



**An Analysis of the Relationships & Views Among the Big
Five Personality Traits and Kolb's Learning Approaches
in Higher Education Students in Dubai, UAE**

تحليل العلاقات والآراء بين السمات الشخصية الخمس الكبرى ومناهج التعلم
التجريبي لكولب لدى طلاب التعليم العالي في دبي، الإمارات العربية المتحدة

by

MOHAMMED ADNAN ALAMEEN

**A thesis submitted in partial fulfilment
of the requirements for the degree of
DOCTOR OF PHILOSOPHY IN EDUCATION**

at

The British University in Dubai

May 2024



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Abstract

In this study, the interplay between personality traits and learning approaches among higher education students in Dubai, United Arab Emirates is explored, using the Big Five Personality Traits and Kolb's Experiential Learning Theory as theoretical frameworks. Conducted at a renowned semi-governmental institution, this mixed-methods research utilized quantitative surveys with 186 students and qualitative interviews with 19 students. Quantitative data were analysed to identify correlations between personality traits (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) and learning approaches (learning modes: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation; and learning styles: Accommodating, Assimilating, Diverging, and Converging). Qualitative interviews provided deeper insights into these relationships. Major quantitative findings indicated significant correlations between traits like Agreeableness and Openness with Active Experimentation and Reflective Observation learning modes, as well as Conscientiousness with Abstract Conceptualization and Concrete Experience modes. Qualitative data revealed that students with high Agreeableness and Openness preferred reflective and experiential learning activities, while those with high Conscientiousness thrived in structured and conceptual tasks. These insights highlight the potential for personalized teaching strategies. These results suggest that incorporating personality traits into educational settings can optimize learning outcomes by aligning teaching methods with students' learning preferences. The study emphasizes the necessity for further research across various educational settings to validate and expand upon these findings, aiming to enhance educational effectiveness through tailored pedagogical approaches.

Keywords: personality traits, learning approaches, learning modes, learning styles, higher education, Kolb's experiential learning theory, big five personality traits

خلاصة

في هذه الدراسة ، يتم استكشاف التفاعل بين سمات الشخصية وأساليب التعلم بين طلاب التعليم العالي في دبي ، وتوظيف كأطر نظرية. تم إجراء هذا البحث (KELT) ونظرية التعلم التجريبي كولب (BFPT) السمات الشخصية الخمس الكبرى متعدد الأساليب في مؤسسة شبه حكومية مشهورة ، واستخدمت استبيانات كمية والمقابلات النوعية مع 186 طالب. تم تحليل البيانات الكمية لتحديد الارتباطات بين سمات الشخصية (الانفتاح ، والوعي ، والانبساط ، والاتفاق ، والعصابية) وأساليب ، والتجريب النشط (AC) ، التصور المجرد (RO) ، الملاحظة الانعكاسية (CO) التعلم (أنماط التعلم مثل الخبرة الملموسة ، وأساليب التعلم مثل التكيف ، استيعاب ، تباعد ، والتقارب). ثم تم استخدام المقابلات النوعية لتقديم رؤى أعمق (AE) لهذه العلاقات. أشارت النتائج الرئيسية إلى وجود ارتباطات كبيرة بين السمات مثل التوافق والانفتاح وأنماط تعلم الذكاء الاصطناعي والتنافسي، تسليط الضوء على إمكانيات الاستراتيجيات التعليمية الشخصية. تشير هذه النتائج إلى أن دمج تقييمات الشخصية في البيئات التعليمية يمكن أن يحسن نتائج التعلم من خلال موائمة طرق التدريس مع ميول الطلاب. تؤكد الدراسة على ضرورة إجراء مزيد من البحث عبر سياقات تعليمية متنوعة للتحقق من صحة هذه النتائج والتوسع فيها ، بهدف تعزيز الفعالية التعليمية من خلال مناهج مصممة خصيصا.

الكلمات الرئيسية: سمات الشخصية ، مناهج التعلم ، طرق التعلم ، أساليب التعلم ، التعليم العالي ، نظرية التعلم التجريبي كولب ، سمات الشخصية الخمسة الكبرى

Dedication

This thesis is dedicated to my parents. Your boundless support and love have been my constant source of strength throughout this journey. Your sacrifices and unwavering belief in me have shaped who I am and fueled my aspirations. I am eternally grateful for your guidance, patience, and the values you've instilled in me.

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List of Abbreviations

AC	Abstract Conceptualization
AE	Active Experimentation
BFI	Big Five Inventory
BFPT	Big Five Personality Traits
BUID	British University in Dubai
CO	Concrete Experience
EI	Emotional Intelligence
EEG	Electroencephalography
ELC	Experiential Learning Cycle
ELT	Experiential Learning Theory
FFM	Five-Factor Model
FSLSM	Felder-Silverman Learning Style Model
FMRI	Functional Magnetic Resonance Imaging
IQ	Intelligence quotient
KLA	Kolb's Learning Approach
KELM	Kolb's Experiential Learning Model
KELC	Kolb's Experiential Learning Cycle
KELT	Kolb's Experiential Learning Theory
KLS	Kolb's Learning Styles
L&D	Learning and Development
LSI	Learning Style Inventory
MOE	Ministry of Education
OCEAN	Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism

RO	Reflective Observation
SLT	Social Learning Theory
UAE	United Arab Emirates
VLE	Virtual Learning Environment
ZPD	Zone of Proximal Development

Chapter 1: Introduction

1.1 Research Background

Learning is a fundamental process that serves as the foundation for personal growth, academic success, and societal advancement. Within the context of education, it is crucial for students to effectively acquire, process, and apply knowledge to excel academically and prepare for future career opportunities. For educators, understanding the intricacies of how individuals learn is equally vital, as it enables the development of teaching strategies that address diverse learning needs and encourage active engagement (Cassidy, 2004; Kolb, 1999). The ability to customize instructional methods to suit individual learning preferences has become increasingly significant in today's diverse academic environment, where student populations encounter multifaceted challenges (Fleming, 1995; Coffield et al., 2004).

In higher education, where students are expected to cultivate critical thinking, problem-solving, and independent learning skills, the importance of understanding learning dynamics is amplified. Effective learning not only involves acquiring information but also retaining, analysing, and applying it in practical, real-world scenarios. Studies show that recognizing and addressing individual differences in how students process and interact with information can greatly enhance academic performance (Cassidy, 2004; Kolb, 1999). Therefore, a comprehensive understanding of learning approaches, coupled with the ability to identify and adapt to diverse learning preferences, is essential for academic achievement and promoting lifelong learning (Furnham, 1992; Zhang, 2006).

Personality traits are another important factor that must be looked at within the field of educational psychology, since understanding students' personalities would allow teachers to cater to their individual needs. According to Furnham et al. (2003), it is important for

educators to understand students' personality traits because such individualized learning approaches cater to students' specific learning needs and preferences. Moreover, Komarraju et al. (2011) highlight how personalized teaching instructions can boost students' motivation by making their learning process more relevant and engaging. Furthermore, having information about personalities helps educators manage classrooms more effectively, provide emotional support to students in need, offer guidance on career paths, predict student reactions and prepare lesson plans accordingly (Poropat, 2009). Thus, such personalized teaching approaches are crucial because they enhance students' overall learning outcomes.

The interrelationship between personality traits and learning approaches represents a critical area of inquiry in educational psychology, offering profound insights into the mechanisms underlying student engagement, performance, and adaptability. This research centers on two primary frameworks: the Big Five Personality Traits (BFPT) model and Kolb's Experiential Learning Theory (KELT). Personality traits, as defined by the BFPT model, influence key aspects of learning, such as motivation, persistence, and the ability to process and apply knowledge effectively (McCrae & Costa, 1997). Meanwhile, learning approaches, as characterized by KELT, shed light on the diverse strategies students use to acquire and internalize information. Understanding how these two constructs interact provides valuable guidance for educators in tailoring pedagogical methods to meet individual student needs, ultimately enhancing both academic success and lifelong learning outcomes (Cassidy, 2004; Kolb, 1999). This research not only addresses a significant gap in the literature but also aims to contribute to evidence-based practices in education by demonstrating how integrating personality traits and learning styles into teaching methodologies can optimize lesson planning and enhance educational outcomes.

The UAE presents a compelling and unique context for exploring the interrelationship between personality traits and learning approaches. The country's higher education landscape is characterized by its rapid expansion, high-quality standards, and a strong emphasis on fostering global competitiveness (Burton & Warner, 2021). As a result, UAE institutions attract a highly diverse student population, with individuals from various cultural, linguistic, and educational backgrounds. This diversity creates a dynamic environment that is ideal for examining how personality traits interact with learning approaches across different demographic groups. Moreover, the UAE's strategic emphasis on education as a basis of national development aligns with the study's objective of improving pedagogical practices. Additionally, the quality and level of education in the UAE is expected to become a global pioneer in the long run when it comes to its educational practices, and act as an international benchmark for other countries (Al Dulaimi et al., 2022). By investigating these constructs within the UAE, this research can provide culturally and contextually relevant insights that inform not only local educational policies but also contribute to the global discourse on personalized and inclusive education. Such a study has the potential to support the UAE's ambition to become a global leader in education, offering evidence-based strategies to enhance learning outcomes in a way that addresses the nation's unique challenges and leverages its demographic richness. Moreover, understanding the interplay between personality traits and learning approaches in this context not only addresses a critical research gap but also supports the UAE's broader goal of fostering inclusivity and academic success.

The UAE has implemented significant educational reforms aimed at fostering innovation, inclusivity, and global competitiveness. These reforms include a strategic focus on integrating technology into classrooms, promoting research-driven teaching practices, and enhancing professional development for educators. Additionally, the UAE's education system

emphasizes tailoring pedagogy to its diverse student population, ensuring that varying cultural and linguistic backgrounds are addressed effectively (Al Dulaimi et al., 2022). By adopting such reforms, the UAE aspires to become a global benchmark for quality education, advancing its vision of cultivating skilled, lifelong learners equipped to contribute to the knowledge economy (Burton & Warner, 2021).

Learning styles play a key role within the context of education since it allows educators to comprehend students' thinking, their behaviour, and the way they learn. Ultimately, educators would be able to plan instructional methods that can effectively facilitate students' learning outcomes. Many scholars developed their own learning model frameworks, which allowed instructors to examine the learning styles of their students. Several of those learning models include: Reinert's Learning Style Model (1976), Kolb & Fry's Experiential Learning Theory (KELT) (1974), and Neil Fleming's VARK model in 1987, which is later developed in 1995 (Fleming, 1995). This study, however, will investigate Kolb's Experiential Learning Theory (KELT); a comprehensive learning model, developed in 1974 and was influenced by the works of other psychologists, namely Jean Piaget (1973), Kurt Lewin (1951), and John Dewey (1938). KELT necessitates that people learn from experience, and that learning demands the attainment of theoretical concepts which can then be executed flexibly in numerous situations. Kolb (1999) states that learners can transform their experiences into knowledge by going through the various stages. KELT operates on two distinct levels: a four-stage cycle of learning, known as learning modes, and four separate learning styles. The learning modes include Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE); whereas the learning styles include Accommodating, Assimilating, Diverging, and Converging. These four learning styles are a crucial component of this research and will be used throughout the thesis.

It is important to note that throughout this thesis, the term “learning approaches” will be used to encompass both ‘learning modes’ and ‘learning styles’.

Another construct that plays a pivotal role within the context of education are students’ personalities, which are individual attributes that display certain patterns of thoughts, feelings, and behaviour (Allik, 2012; Komarraju et al., 2009). While numerous studies have been done on personality traits such as Stogdill’s Trait theory (1974), Big Five Personality Traits (BFPT) (1984), the Eysenck Personality Questionnaire (1975), and Myers–Briggs Type Indicator (1985), this study focused on the BFPT model. This model, also called the Five-Factor Model (FFM), includes five distinct personality traits; these include: Openness, Conscientiousness, Agreeableness, Extraversion, and Neuroticism, and are commonly referred to the acronym OCEAN. This personality model is a breakthrough in the field of psychological studies, with its roots being traced all the way to the 1960s. The first step toward identifying five major personality traits was taken by Tupes and Christal (1961) when they conducted factor analyses on personality descriptors (Goldberg, 1993). Although the model was initially established then, Costa and McCrae's efforts in the 1980s significantly increased its prominence and reached wider audience. Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism are the five dimensions that they measured by developing the NEO Personality Inventory (Costa et al., 1991). This model has been widely accepted and employed for understanding personality, as it has undergone extensive validation and is applied in a variety of psychological contexts (McCrae & John, 1992).

Today, the BFPT remains one of most widely acknowledged and utilized theories in personality psychology for several reasons. A key element of this theory is its proficiency in measuring personalities with a high degree of accuracy. It primarily views personality as a spectrum, rather than as fixed, distinct categories. This approach recognizes that individuals

often do not conform to extreme positions on this spectrum but are typically on points across this spectrum. When viewing the BPFT from a wider perspective, it offers a systematic framework that enhances mutual understanding among individuals, thus facilitating improved interpersonal relationships by explaining the underlying reasons for specific behavioural patterns. Additionally, this theory can be applied by individuals as well to gain insights into personal behaviour, thus fostering better interactions with others.

The construct of the BFPT is widely popular among academic scholars and has been proven to be successful in many areas of research. Within the educational framework alone, there have been countless studies (Chamorro-Premuzic & Furnham, 2009; Gray & Watson, 2002; Hodson, 2009; Komarraju et al., 2011; Nofle & Robins, 2007) that demonstrate how such a construct can be used to predict students' academic achievement. For instance, many findings (Allik & McCrae, 2002; McCrae & John, 1992; O'Connor & Paunonen, 2007) confirmed that the conscientiousness personality factor was the most reliable predictor for students' academic performance. Empirical findings such as these provide enough merit and justification for researchers to choose BFPT as a construct to carry out research.

The distinctive variances in learning styles and personality traits have been long considered an important element in defining an individual's behaviour (Armstrong et al., 2012; Penney & Spector, 2002). However, whether learning style is an essential part of personality theories remains uncertain. Some studies (Furnham, 1992; Jackson & Lawty-Jones, 1996) concluded that learning style is a subgroup of personality based on reliable associations among the two constructs, whereas other studies (Furnham et al., 2007; Von Wittich & Antonakis, 2011; Zhang, 2006) claimed that learning styles are unique and should be investigated independently from personality since the similarities between the two concepts is low. While explanations by scholars, as well as the sample, sample size, and analytical

approaches implemented by different studies collectively contribute to different assumptions from prior research, further investigations that can add to this academic debate is required (Chamorro-Premuzic & Furnham, 2008).

Much of the research that contributed towards this debate has utilized the BFPT since not only is it widely accepted but is also regarded by many scholars to be one of the most exemplary measures of personality traits (Chamorro-Premuzic & Furnham, 2009; Chamorro-Premuzic & Lewis, 2008; McCrae & Costa, 1997). Nevertheless, there is a lack of agreement on the makeup of preference-centred constructs such as learning styles within this continuing deliberation, “with different researchers opting for different instruments and taxonomies” (Swami et al., 2009). Coffield et al. (2004) critically examined various learning style models, including Kolb’s Experiential Learning Theory, highlighting significant limitations that hinder their practical application. They pointed out theoretical ambiguity in Kolb’s model, noting a lack of a clear conceptual foundation, which complicates its use and interpretation. Furthermore, they raised concerns about the reliability and validity of the Learning Style Inventory (LSI), the tool designed to assess learning preferences, suggesting it may not accurately capture individual differences. The review also criticized the tendency of learning style models to categorize learners rigidly, potentially stifling adaptability and overlooking the dynamic nature of learning processes. Additionally, Coffield et al. emphasized the lack of robust empirical evidence supporting the effectiveness of tailoring educational approaches to learning styles, calling into question the utility of such models in improving educational outcomes.

Moreover, they argue that the perplexing definitions surrounding the concept of ‘learning styles’ hinder progress in their applications. The debate over the relationship between personality traits and learning styles is further complicated by the fact that tools used

to measure these constructs were developed for varied contexts, such as the corporate world, career planning, schools, and universities. Nevertheless, many studies examining the relationship between personality traits and learning approaches have focused on higher education students, particularly undergraduates, worldwide. There have also been efforts to generalize these findings to a broader population. These critiques collectively advocate for a more flexible and evidence-based approach to understanding and addressing individual learning differences.

Overall, the focus of this research is to understand the relationship between personality traits and learning approaches in higher education students in Dubai, UAE. The interest in this topic is motivated by contemporary attention to KELT within the educational field. Recent studies demonstrate the intricate linkage between personality traits and learning approaches. Taking into consideration the depth of processing, for instance, students with deep processing are more likely to utilize appropriate study methodologies, make effective conclusions, and are self-adjusted in comparison to students who prefer to process information in a shallow manner (Gadzella et al., 1997). Furthermore, students who utilize deep processing are more likely to be meticulous, curiously intellectual, and extroverts (Furnham, 1992; Zhang, 2003). According to Geisler-Brenstein and Schmeck (1996), these types of students are emotionally stable. Zhang (2003) states that if a student prefers intuitive processing and a learning environment that is structured, the student might be more prone to anxiety and stress. Furnham (1992) emphasizes that students who prefer a dynamic and practical approach usually turn out to be extroverts. Thus, it can be deduced that personality traits and learning approaches are intricately interconnected. Additional investigation into the degree to which personality traits overlap learning approaches, particularly KELT and the BFPT in higher education students, can provide academics with valuable information in assessing their students' performance, and

ultimately determine whether employing innovative teaching methods and modifying their curriculum can contribute to students' overall learning goals.

Overall, there has been a rise in recent studies that are investigating the relationship between personality traits and learning approaches within the educational field (Fallan, 2006; Farsides & Woodfield, 2003; Ibrahimoglu et al., 2013; Lalima & Lata Dangwal, 2017; Purnawarman et al., 2016). Such studies, however, are limited when it comes to KELT and the BFPT, specifically within the contextual background of the UAE. Since the UAE places a great deal of emphasis on students' education, understanding the interplay of personality traits and learning approaches is significant. However, it goes beyond that; understanding the interplay of these two constructs is significant because it enables improved pedagogy, informs policy development to increase student engagement, and, most importantly, helps address the diversity of the student population. Given the UAE's demographic diversity, understanding how students learn best allows educators to more effectively cater to diverse needs. Overall, by gaining a better understanding of personality traits and learning approaches, as well as their complex relationship, educators can ultimately enhance their teaching pedagogy.

1.2 Statement of the Problem

While numerous studies have examined the relationship between personality traits and learning approaches (Busato et al., 2000; Eysenck, 1978; Fallan, 2006; Farsides & Woodfield, 2003; Ferguson et al., 2002; Furnham, 1992; Highhouse & Doverspike, 1987; Siddiquei & Khalid, 2018), a critical gap remains in understanding how the Big Five Personality Traits (BFPT) interact with Kolb's Experiential Learning Theory (KELT) within Dubai's unique higher education landscape. This gap is particularly significant for several reasons.

Firstly, the UAE is positioned as a global education hub, attracting diverse student populations (Abdulla, 2018) who engage in increasingly technology-dependent and blended

learning environments (Garrison & Vaughan, 2008). However, there is a lack of empirical research exploring how these diverse cultural and educational backgrounds may moderate the relationship between BFPT and KELT in such settings. Studies, such as Kim and Glassman (2013), have emphasized the importance of cultural factors in shaping learning preferences, yet their findings remain underexplored in the context of the UAE's multicultural student body.

Moreover, with the acceleration of online and hybrid learning driven by the COVID-19 pandemic (Dhawan, 2020), there is an urgent need to understand how students' personalities may affect their engagement and adaptation in digital contexts. Recent studies (Hwang et al., 2022) have started examining personality traits in online learning environments, but they do not sufficiently address how these traits align with experiential learning models like KELT. Prior research on BFPT and KELT has predominantly focused on traditional learning environments (Siddiquei & Khalid, 2018; Busato et al., 2000), thus overlooking the demands of modern blended learning systems where students' intrinsic personality traits may influence their adaptability, motivation, and ultimately, their success (Lalima & Dangwal, 2017).

Another gap lies in the practical applications of these theoretical insights. While studies highlight the potential of aligning teaching methods with personality profiles (Purnawarman et al., 2016; John & Srivastava, 1999), there remains limited evidence on how such alignments can be operationalized in blended learning environments to address challenges like digital fatigue, reduced student motivation, and diverse learning paces. The absence of targeted strategies for implementing these insights in Dubai's educational institutions underscores the need for this research.

By bridging these gaps, this study aims to provide educators and institutions with actionable insights into how personality traits align with learning approaches, thereby

facilitating the development of teaching strategies that are psychologically attuned to the needs of students in Dubai. The findings will be especially beneficial for the UAE's evolving educational landscape, where personalized learning and instructional innovation are key to remaining competitive globally (Abdulla, 2018). Hence, this research not only contributes to the literature but also offers practical applications that could transform educational practices and foster student success in a blended learning environment.

1.3 Significance of the Study

This study is significant on multiple aspects. The researcher's main aim was to investigate whether there is a link between the BFPT and KELT and to better understand, if it exists, the nature of such a relationship within the context of Dubai, UAE. While this study will primarily investigate the relationship between the BFPT and KELT, it will also examine higher education students' views and experiences related to this topic. Understanding the connection between those two constructs is crucial for educators as it gives them insights into how students think, act, and behave. According to El Othman et al. (2020), this will allow instructors to propose contingent instructional methods based on their students' personality types and distinctive learning styles, which will thus enable an effective classroom environment, enhance students' learning motivation, and successfully contribute towards their academic success. Entwistle (1988) supports this claim and states how catering to students' individual personality types and distinctive learning styles will boost their academic performance and overall learning outcomes.

Since little research has been done on the relationship between higher education students' personality traits and learning approaches in the UAE, the findings of this study will offer educators significant and valuable insights, thus enriching the existing literature within the educational field. This will be especially useful within the context of blended learning and

in understanding how, and if technology plays a role in students' distinct learning approaches. Moreover, the outcomes of this research provide implications and recommendations for further studies on effective instructional methods and lesson plans. These insights will help educators facilitate and enhance student engagement and improve overall learning outcomes through the application of effective teaching pedagogies. Additionally, by investigating the relationship between personality traits and learning approaches within a blended learning environment, the outcomes of the study can help educators and policymakers work with instructional designers to enhance the delivery of educational lessons and serve the learning outcomes of students studying online.

1.4 Research Questions

This study comprises three primary research questions that guided the researcher into achieving the overall outcomes of the study:

- a) What is the relationship between personality traits and learning approaches of higher education students in the UAE?
- b) Do demographic variables contribute to differences among behavioural outcomes and learning approaches of higher education students in the UAE?
- c) To what extent do the views of higher education students correspond with personality traits and learning approaches relevant to the UAE?

The first two research questions are quantitative in nature. The first question is psychological in nature and will investigate the relationship between KELT and the BFPT of higher education students in a reputable university in Dubai. The second question is sociological in nature and will examine higher education students' gender, age range, degree type, and academic discipline in order to determine whether demographic variables play a defining role among the BFPT and KELT. The third research question is qualitative in nature

and will explore higher education students' views and experiences related to their personality traits and learning approaches.

1.5 Purpose of the Study

The purpose of this research is to investigate the relationships and views among the Big Five Personality Traits and Kolb's Experiential Learning Approaches Traits in higher education students in the UAE.

Chapter 2: Literature Review & Theoretical Framework

2.1 Introduction

Investigating the intricate interplay between personality traits and learning approaches discloses substantial psychological implications for learners across diverse educational contexts. This section aims to systematically analyse existing literature as well as contribute towards filling gaps in literature within this field. The chapter begins by providing a historical overview of personality traits and learning styles in general. Next, a general exploration of personality and learning theories and models are discussed and criticized. This is followed by examining the relationship between personality traits and learning styles along with their contribution in existing literature. To address the study's goals and objectives, a specific personality and learning style model were chosen respectively. Thus, this chapter will explore the Big Five Personality Traits (BFPT) as a theory of personality traits, while Kolb's Experiential Learning Theory (KELT) will be explored as a theory of learning styles. These two theoretical frameworks are essential for comprehending the complex dynamics between personality and learning processes. By examining these two models in great depth, this chapter seeks to unveil how individual differences in personality traits and learning styles can considerably impact students' overall learning outcomes. Moreover, this study aims to bridge personality traits with learning styles within the context of Dubai, UAE, specifically BFPT and KELT, offering valuable insights to educators and policymakers to improve and develop teaching methods and enhance learning experiences. Finally, a conceptual framework section was designed to establish a methodical structure for comprehending the relationship between these two constructs.

2.2 Historical Overview of Personality Traits & Learning Approaches

The study of personality traits and learning approaches roots back to ancient civilizations, where they made early attempts to understand human personality and its impact on learning. These beliefs, many of which still serve as the framework for current study, were developed by classical philosophers, physicians, and psychologists (Sadeghi et al., 2012). Studies have shown a historic and consistent interest in understanding personality traits and learning styles (Siddiquei & Khalid, 2018; Swanson & Hansen, 1988; West & Graziano, 1989). This kind of interest could perhaps stem from the inherent human nature of observation, analysis, and sharing of knowledge, which naturally evolves into a vital part of a person's identity and shapes how people view and interact with the world around them. Such a process illustrates an essential aspect of human nature, highlighting the dynamic link between one's personal development and interaction with the environment.

The tradition of temperament theory which claims that human behaviour is influenced by innate traits, was established by Ancient Greek and Roman philosophers such as Hippocrates and Galen (Eysenck & Eysenck, 1985). This is where the basic idea of personality, as a collection of consistent and enduring traits, can be traced back. With writings like the Chinese, I Ching (Wilhelm et al., 1967) and the Indian Bhagavad Gita (Easwaran, 2014) offering intricate character evaluations, ancient Eastern philosophies also demonstrated a deep interest in comprehending personality traits (Eysenck, 1991). Although not empirical, these philosophies helped lay the foundation for further research in the psychology of personality. Similarly, although the awareness of individual variances in learning may be traced throughout historical educational practices, learning styles as a unique area of attention evolved considerably later. For instance, the Socratic method of ancient Greece required active engagement from the learner in the form of question-and-answer sessions (Marzano, 1992).

Thus, the early realization goes in connection with the theory that learning is an individual-based process. Eventually, this concept has become an integral part of modern learning style theories. With the advancement of civilizations, early beliefs have also advanced. Neil Fleming and David Kolb have been the main educational theorists who continue providing insights and knowledge about learning styles. Historically established theories regarding the connection between personality and learning have provided a solid foundation, offering an extensive framework for exploring these constructs (Jung, 1971; Kolb, 1984; Komarraju et al., 2011).

Recent studies in psychology have advanced the understanding of foundational theories by applying modern methods to evaluate personality traits and learning styles among various populations. This research aids in understanding the complex dynamics of human personality and the diverse aspects of learning, highlighting the influence of genetic, environmental, and cognitive elements (Siddiquei & Khalid, 2018). These insights have been crucial in improving pedagogical strategies to accommodate individual learning needs, thereby enhancing educational effectiveness. Additionally, the incorporation of neuroscientific techniques has introduced a fresh perspective on the biological underpinnings of personality and learning styles. For example, imaging studies have begun to reveal how brain activity correlates with personality variations and their impact on learning approaches (Moreira et al., 2021). Such findings lay a groundwork for learning style differences, suggesting a significant correlation between personality, learning, and cognitive functions. Furthermore, the application of technological innovations in education has accelerated the development of novel methods to support various learning styles, ranging from adaptive learning software to virtual reality environments. These technologies use psychological insights to develop more engaging and effective educational experiences. By acknowledging the role of personality in

learning, educators and policymakers are equipped to plan educational programs that address individual differences, thus strengthening the educational framework and improving the overall quality of education.

2.3 Theoretical Explanations & Interpretations

The underlying theoretical foundations that explain the associations between the Big Five Personality Traits (BFPT) and Kolb's Learning Styles (KLS) are rooted in a fundamental assumption: personality, as a consistent and enduring characteristic of individuals, can significantly impact a person's perception, cognitive processing, and engagement with their surroundings, including learning experiences (Pashler et al., 2008). Openness to Experience is one of the basic personality dimensions of the BFPT and includes attributes ranging from imagination to curiosity and even the breadth of interests exhibited by a given individual. In theory, these individuals have an inherent inclination towards exploration and novelty, which corresponds effectively with the active experimentation and tangible experiences that are associated with Kolb's divergent and accommodating learning styles. The individual's inclination towards openness may enhance their willingness to actively participate in and derive knowledge from novel situations, which are fundamental characteristics of the divergent and accommodating cognitive styles (Zhang & Sternberg, 2005).

The characteristic trait of Conscientiousness, on the other hand, refers to people who show characteristics of organization, attention to detail, and diligence most of the time. These kinds of people follow a step-by-step approach in everything that they engage in, even in the process of learning. Hence, individuals may exhibit a propensity to adhere to Kolb's Converging and Assimilating learning styles, characterized by the utilization of logical reasoning, methodical strategizing, and meticulous examination. According to Komarraju et al. (2009), people who possess conscientious traits are inclined towards cautious planning and

meticulousness, which may contribute to their greater affinity for organized and systematic learning processes.

Additionally, extraversion is a personality trait associated with individuals who typically exhibit outgoing, assertive, and active behaviours in social interactions. The inclination towards sociability might potentially be associated with a propensity for learning styles that emphasize interaction and cooperation. An example of such a learning style is the accommodating style, which entails active experimentation and tangible experience, frequently in group settings (Komarraju et al., 2009). Basically, these theoretical constructs provide some good reasons for the association between some qualities of personality and well-defined learning style. The statement above is very clear in emphasizing the kind of personality as an important factor in shaping individual learning encounters and brings out the need for educators to factor this in while devising and implementing educational initiatives developed and integrated into educational initiatives.

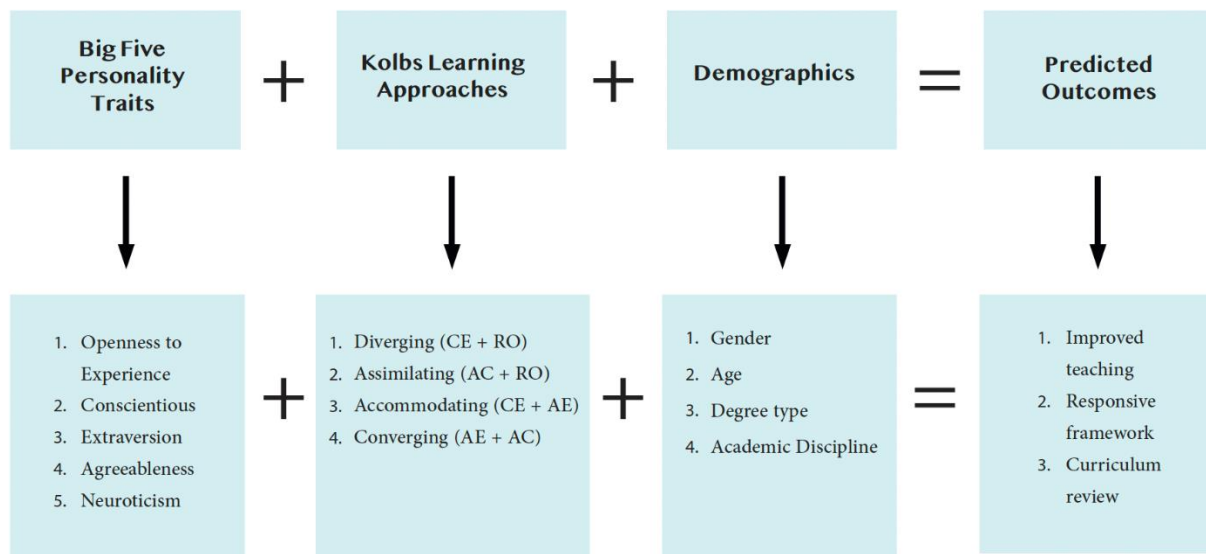
2.4 Conceptual Framework

Based on the underpinning theories of this research, a conceptual framework was developed in a way that connected the main concepts together. This can be seen in Figure 4 below. In this framework, three main constructs, the BFPT, Kolb's Learning Approaches, and Demographics were observed with the aim of combining them to derive outcomes that could contribute to the educational field. The BFPT include Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. KELT, or Kolb's learning approaches (which this study occasionally refers to), on the other hand, refer to both learning modes (AC, CE, RO, and AE), and learning styles (Diverging, Assimilating, Accommodating, and Converging). Finally, Demographics include four variables: Gender, Age, Degree Type, and Academic Discipline. The purpose of this conceptual framework is to understand how the

interplay of personality traits, learning approaches, and demographic variables contribute to overall learning outcomes, and how teaching can support these diverse characteristics. Thus, based on the literature, several predicted outcomes were formulated. These potential outcomes include improved teaching methodologies, a responsive teacher framework, and curriculum enhancements such as innovation, review, and updates.

Figure 1

Conceptual Framework



Note. Created by author.

The purpose of this conceptual framework is to understand how the interplay of personality traits, learning approaches, and demographic variables contributes to students' overall learning outcomes. It predicts that such interactions can inform several areas in education:

1. Improved Teaching Methodologies: For instance, tailoring teaching strategies to align with diverse personality traits and learning styles (Kolb, 1984; Costa & McCrae,

1992). This could involve more personalized learning experiences or varied instructional methods to engage students effectively.

2. **A Responsive Teacher Framework:** Developing a teaching approach that adapts to the dynamic needs of students by considering demographic differences such as age or academic discipline. This framework could guide educators in identifying and addressing unique learner needs (Kolb, 1984).
3. **Curriculum Enhancements:** Including innovations like integrating experiential activities to support hands-on learners (Kolb, 1984), regularly reviewing course content to ensure it remains relevant (Biggs & Tang, 2011) and updating teaching materials to reflect modern educational demands (Laurillard, 2012).

These predictions are grounded in the integration of prior research and theoretical insights, which highlight the importance of considering individual differences in personality, learning preferences, and demographic factors to foster optimal educational outcomes. Together, these outcomes aim to create a more inclusive and effective educational environment for students.

2.4.1 Combining BFPT & KELT

The BFPT and KELT together have the capacity to create a thorough understanding of how people learn on an individual level. The two theories provide a comprehensive framework for comprehending how a human receives and processes information, despite having some elements that are exclusive. When the personality-driven insights from the BFPT are combined with the cyclical nature of KELT, this leads to a better understanding of the individual differences in learning behaviour (Friedman & Schustack, 2016). This synergistic integration enables a deeper dive into the science of learning. According to Merriam and

Bierema (2013), this dynamic perspective on learning highlights how learning is fluid and constantly changing, with each stage building on the previous to create a never-ending cycle of learning and relearning that is influenced by both immediate experiences and reflective processes.

However, by defining five main personality types, which are openness, conscientiousness, extraversion, agreeableness, and neuroticism, the FFM offers a comprehensive representation of personalities (John & Srivastava, 1999). Recent research continues to support the Five-Factor Model (FFM) as a comprehensive framework for understanding personality. For instance, Soto and Jackson (2020) discuss the FFM's utility in capturing the complexity of human personality traits. These characteristics are thought to have the power to affect a person's choices and actions in a learning environment. For example, previous research has discovered a connection between people's inclination to participate in learning activities, conscientiousness and openness to new experiences, and academic success (Komarraju et al., 2009; Poropat, 2009). Similarly, extraversion and agreeableness have the highest likelihood of influencing peer relationships and the dynamics of group learning experiences (Barrick et al., 2001; Nettle & Robins, 2007). These FFM insights demonstrate how innate personality traits can influence interpersonal dynamics, collaborative learning environments, individual learning experiences, and overall educational outcomes for both individuals and groups.

These two frameworks work together to provide new insights into how the learning process is understood. This makes it possible to incorporate both the stable individual variations explained by FFM and the dynamic, situational aspects emphasized by ELT. According to the BFPT, an individual with a high degree of openness, for instance, might be more likely to enjoy the abstract conceptualization stage of the learning cycle as suggested by

ELT. This could show up as a preference for interacting with new concepts and theoretical frameworks (Costa & McCrae, 1992; McCrae & Greenberg, 2014). Likewise, someone with a high conscientiousness level could perform exceptionally well during the active experimentation stage by applying newly learned information in a strict and deliberate manner (Barrick et al., 2001; Judge et al., 2002). The correlation observed between an individual's personality traits and their involvement with various phases of the learning cycle highlights the significance of a customized educational strategy that considers the cyclical nature of learning as well as the stable characteristics of learners.

To tailor teaching methods to individual preferences and strengths, educators and students may find that an integrated perspective on learning provides some insights into what works best for each individual. Such an effect might suggest further research into the potential impact that unique personality traits might have on the efficacy of these diverse teaching strategies. This empirical data demonstrates the kind of educational systems that require complete customization and optimization. By ensuring that learning environments are flexible, responsive, and closely aligned with the various needs and abilities of individual students, this approach not only increases the efficacy of instructional strategies but also opens the door to more individualized and successful education (Dweck, 2006; Peterson & Seligman, 2004).

2.4.2 Identifying Connections Between Personality Traits, Learning Styles, Gender, & Academic Fields

The complex relationship among personality characteristics, learning styles, gender, and academic disciplines are intricate, need a comprehensive methodology to comprehensively grasp these phenomena. The available evidence indicates that each of these components has the potential to exert influence on, as well as be impacted by, the others,

hence having a consequential impact on the process of learning and its subsequent results (Gázquez et al., 2015; Hengartner et al., 2017).

For instance, there exists a correlation among personality qualities and learning styles as well as academic disciplines. According to Hengartner et al. (2017), individuals with a high level of openness to experience, which is one of the personality factors of the BFPT, tend to exhibit a reflective learning style. As argued by Woods and Hampson (2010), it is possible that these children are inclined towards academic disciplines that need advanced conceptual reasoning and creative abilities, such as the humanities or arts. Therefore, people with high conscientiousness, characterized by tendencies to be well organized and reliable, could be conceptualized to have an abstract convergent learning style when integration takes place with active experimentation. Individuals with these traits may show a preference for fields like business or engineering that place a significant focus on problem-solving and the real-world application of academic principles, according to Barrick et al. (2003).

Gender, therefore, emerges as a very key factor in the interaction dynamics that exist between personality traits, learning preferences, and academic fields. Research has often highlighted noticeable differences in personality traits and learning preferences between male and female students. An illustration of this phenomenon may be observed in the research conducted by Costa et al. (2001), which indicates that females commonly exhibit higher scores in neuroticism and agreeableness compared to males. Additionally, Zhang and Sternberg (2012) found that females frequently have a greater inclination towards reflective and collaborative learning styles. The selection of academic subjects can be influenced by gender inequalities, which may contribute to the observed gender gaps in specific fields (Su et al., 2009).

When interrelationships are examined, it should be understood as likely rather than certain. Although there may be statistical tendencies for certain personality traits, learning styles, or genders to be linked with specific academic disciplines, it is noteworthy that individuals can still pursue any subject that matches with their interests and ambitions, regardless of these factors. Such interrelations, in fact, enable understanding in such a way that both educators and researchers are better placed in their line of duty, making better, more wholesome ways of instruction.

2.4.3 Exploring Interactions Among Variables, Including Gender, Academic Fields, Personality Traits, & Learning Styles

Understanding the process of learning will, therefore, call for the need to inquire into the different components with their interplay in what is likely to be affecting this multifarious phenomenon. The different elements that include gender, academic disciplines, personality traits, and learning styles will all have different impacts on the learning process. The significance of gender in influencing personality characteristics and learning styles is substantial. Many studies have demonstrated the differences in characteristics of personality between men and women, bringing into account that women are characterized by more agreeableness and neuroticism, while males are characterized by greater assertiveness (Schmitt et al., 2008). Additionally, it has been demonstrated that gender differences in learning styles exist. Specifically, women gravitate towards exhibiting a preference for a reflective and collaborative learning methods, whereas males are more inclined towards abstract conceptualization and active experimentation (Severiens & Ten Dam, 1994).

There exists empirical data indicating that students across various academic disciplines may exhibit noticeable variations in their personality characteristics. For instance, according to Lievens's et al. (2009) study, it has been observed that students pursuing arts and humanities

tend to exhibit greater levels of openness, whereas business and economics majors frequently exhibit higher degrees of conscientiousness. In addition, it is worth noting that academic disciplines have the potential to influence and promote specific learning styles, hence influencing the learning techniques that students adopt (Jonassen & Grabowski, 2012). Ultimately, the shifting relationship among individual personality features and preferable methods of learning can significantly influence the outcome of the overall learning process. Extraverted students may exhibit a preference for learning experiences that are characterized by increased activity and group involvement, which aligns with a converging learning style. On the other hand, conscientious students may demonstrate a preference for structured learning environments, which reflects an assimilating learning style (Furnham et al., 2007).

2.5 Personality Traits: Theories, Models and Critical Perspectives

Personality is a collection of unique traits that set an individual apart from others. O'Connor and Paunonen (2007) note that while aptitude and Intelligence quotient (IQ) are thought to be indicators of academic performance, personality traits are equally important for academic success. Chamorro-Premuzic and Furnham (2003) and Furnham (2012) state that personality factors influence students' academic motivation and performance. A key component of a popular personality model such as the BFPT developed by McCrae and Costa (1992), states that people with conscientiousness personalities, for example, tend to be more ambitious, diligent, organized, and driven. Additionally, motivation affects how students learn and how well they achieve academically (Vallerand, 1994). Moreover, Azzi et al. (2020) demonstrated that personality plays a critical role in how students learn and is a great indicator of their overall learning outcomes. Abdullah (2015) and Khamparia and Pandey (2018) attested to this, claiming that personality is a significant factor influencing how students learn and acquire new information.

The classification of personality traits has been a debated topic within the discipline of psychology for a considerable length of time, resulting in the development of various theoretical frameworks (McCrae & Greenberg, 2014). According to the theoretical framework put forward by Gordon Allport in 1937, personality traits may be seen as persistent and relatively stable patterns of behaviour, cognition, and emotion that exhibit consistency across many settings and situations. These traits are normally regarded as inherent, something people are born with, providing a reliable basis for predicting and understanding their behaviour, feelings, and overall inclinations. While each model has variations in the quantity and characteristics of attributes incorporated, all strive to encompass the fundamental elements of human personality. Although there exist variations in the quantity of characteristics, two predominant methodologies have emerged for the purpose of identifying and categorizing personality traits: the Lexical Approach and the Statistical Approach.

The Lexical Approach operates on the idea that important personality traits are reflected in language. Essentially, important traits are often described with just one word. This method focuses on examining language to pinpoint critical descriptors of these traits (Goldberg, 1990; Saucier & Iurino, 2020). Moreover, the Lexical Approach suggests that natural language has gradually incorporated all notable individual distinctions. Hence, through a methodical examination of the linguistic patterns employed by individuals to characterize one another, one can uncover the most important traits of personality. The initial utilization of this methodology was undertaken by Allport and Odbert (1936) in their ground-breaking research, which resulted in the identification of over 18,000 phrases that describe traits, extracted from the lexicon.

Conversely, the Statistical Approach is closely linked with factor analysis. This technique scrutinizes data on personality traits to detect common clusters of behaviours. Such

clusters indicate underlying factors or traits that explain these behavioural patterns (Costa & McCrae, 1992). Also known as the factor-analytic approach, the Statistical Approach utilizes factor analysis and other statistical methodologies to determine groupings of interconnected behaviours, attitudes, and emotions, therefore identifying the fundamental personality qualities that underpin them. The utilization of this methodology was notably employed by Raymond Cattell during the formulation of his 16 Personality Factors Model (Cattell, 1943). Cattell utilized the methodological approach of a factor analysis in order to investigate the extensive list of qualities that were first discovered by Allport and Odbert (1936), with the goal of reducing the list to a more concise set of recognizable personality traits. The dynamic interaction between the methodological approaches of Lexical and Statistical led to a substantial impact towards understanding human traits and characteristics. These, in turn, have resulted in the emergence of numerous personality frameworks that have advanced both theoretical knowledge and practical implementations within the field of personality psychology (Uher, 2013).

Throughout the years, several theories and models have been proposed to explain the intricate nature of human personality, each highlighting different aspects of personality. The trait approach to personality has emerged as the dominant perspective, placing emphasis on the quantitative and measurable dimensions of behaviour. The initiation of this methodology was led by Allport and Odbert (1936), who, by employing the lexical hypothesis, established the foundation for subsequent trait theories. Raymond B. Cattell (1943) expanded upon the lexical research conducted by Allport and Odbert by employing component analysis to refine the core personality qualities, leading to the development of the 16 Personality component Model. Hans Eysenck further developed this concept by presenting his Three-Dimensional Model, proposing three qualities: Neuroticism, Extraversion, and Psychoticism. This model

was a departure from previous approaches, since it embraced a more hierarchical framework for understanding personality traits (Eysenck, 1995). The Big Five Personality Model (BFM), often referred to as the Five-Factor Model (FFM), is widely considered to be one of the most significant models in the discipline of contemporary personality psychology. Notable scholars McCrae and Costa (1987) have expanded upon the findings of previous researchers and have defined five primary personality traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. These dimensions are commonly referred to as OCEAN, an acronym they have coined in 1987 (Costa & McCrae, 2000). In recent years, there has been more attention directed towards the HEXACO model, which was introduced by Ashton et al. (2014). The inclusion of Honesty-Humility as a sixth component in the standard five-factor model provides a more thorough and developed perspective on human psychology. For instance, a study by Pletzer et al. (2019) demonstrated that Honesty-Humility significantly predicts workplace delinquency, underscoring its relevance in organizational settings.

The upcoming sections discuss theories and models that have historically shaped the field of personality psychology. It starts with The Four Temperaments, an ancient framework that suggests personality is determined by bodily humours. The evolution of theory then moves to the ground-breaking work of Freud (1955) and his Psychoanalytic Theory, which emphasizes the influence of the unconscious on behaviour. Jung's (1959) Analytical Psychology is also discussed, with its focus on archetypes and the collective unconscious. Adler's (1927) Individual Psychology is examined for its take on personal growth and the notion of inferiority complexes. Furthermore, Erikson's (1950) stages of Psychosocial Development are outlined, charting personality development across the lifespan. Finally, the widespread Big Five Personality Traits Model is also mentioned, which is a crucial theory for this research paper. In addition to detailing these pivotal concepts, this section presents critical

perspectives on these theories. It examines the criticisms regarding their scientific validity, cultural and historical context, and applicability to diverse populations. This critique is essential for a balanced understanding of the strengths and limitations of each theoretical approach within personality psychology.

2.5.1 *The Four Temperaments*

Attributed to the early Greek physician Hippocrates (1931) and later developed by Galen (1997), this is one of the earliest theories, proposing that personality types are determined by the balance of bodily fluids. This ancient theory laid the foundational idea that personality could be categorized into distinct types. Hippocrates, who first established the four temperaments of sanguine, choleric, melancholic, and phlegmatic, is credited with developing one of the oldest theories of personality. The Four Temperaments is an ancient framework that suggests personality is determined by bodily humours, a term that refers to four bodily fluids: blood, yellow bile, black bile, and phlegm. These fluids were believed to influence human behaviour and emotions, with each humour corresponding to a different personality type. It was thought that each temperament had a relationship to a certain body fluid and affected how people learned and interacted with their surroundings. Hippocrates, who is regarded as the "father of modern medicine," established the foundation of clinical medicine. Personality theories were founded on his theory of the four temperaments. The balance or imbalance of the four bodily fluids or humours, was thought to be the primary cause of the four temperaments: sanguine, choleric, melancholy, and phlegmatic (Eysenck, 1994)

Due to the prevalence of blood, sanguine people were perceived as being upbeat, gregarious, and energetic. They were thought to learn most well in social situations and in groups. Choleric people were thought to be irritable, quick-tempered, or short-tempered due to

an excess of yellow bile. They were perceived as motivated, goal-oriented learners who frequently preferred working by themselves and on difficult assignments. Melancholic people were supposed to be quiet, frequently gloomy, and associated with an abundance of black bile. They were inclined towards choosing a structured learning environment that allowed for in-depth study and reflection. Lastly, those with a phlegmatic temperament, which is characterized by an excess of phlegm, tend to be calm, collected, and quiet. They were frequently seen as content learners who valued a consistent pace and a calm, supportive learning environment (Santrock, 2002).

The four temperaments theory had a major impact on medicine and psychology prior to the introduction of modern science. Even though the hypothesis was eventually disproved, the idea that personalities might be classified into different types provided an important foundation for future personality psychologists. Hippocrates' focus on the connection between physiology and personality traits paved the way for later biological and physiological theories of personality (Eysenck, 1994). And while though Hippocrates' four temperaments are no longer the focus of research today, his work is undeniably significant towards the development of personality theories. Hippocrates' ideas may be seen in certain modern learning style theories, which consider the many ways people interact with their environment, including how they prefer to learn. The Four Temperaments theory, while foundational, has been criticized for its lack of empirical support and scientific basis. The theory's reliance on bodily fluids to explain personality types is now considered obsolete, reflecting a pre-scientific understanding of human physiology and behaviour. Modern psychology and medicine have disproven the direct correlation between bodily humours and personality, highlighting the theory's limitations in explaining the complexities of human personality and behaviour (Allport, 1937; Eysenck, 1994).

2.5.2 *Freud's Psychoanalytic Theory*

Developed in the late 19th and early 20th centuries by Sigmund Freud (1955), this theory introduced the concept of the unconscious mind and proposed that personality is shaped by the dynamics among the id, ego, and superego, emphasizing the importance of early childhood experiences. Freud developed his theory primarily from the 1890s through the early 20th century, highlighting the influence of the unconscious mind on behaviour. His psychological model, which includes the id, ego, and superego, explores the complex interactions that shape personality and behaviour. According to Freud, these elements reveal the tensions between innate desires and societal expectations, which he believed were central to the development of neurotic symptoms. Additionally, Freud's theory introduces the concept of psychosexual stages of development, suggesting that early childhood experiences significantly shape adult personality. Another key aspect of Freud's work is the idea of defence mechanisms. This part of his theory suggests that the ego defends itself against anxieties by repressing and distorting reality, potentially impacting mental health. Despite the critiques regarding its scientific validity and perceived overemphasis on sexuality, Freud's contributions continue to be a keystone in fields like psychoanalytic and psychodynamic therapy, as well as influencing cultural, literary, and psychological discussions.

Freud's theory has faced significant criticism for its heavy reliance on unobservable psychological processes and the lack of empirical evidence supporting many of its concepts. Critics argue that the theory is not scientifically testable due to its emphasis on the unconscious mind and early childhood experiences, which are difficult to verify or quantify. Furthermore, Freud's theories have been criticized for their gender bias and the overemphasis on sexual drives in personality development (Crews, 1998; Grünbaum, 1985).

2.5.3 *Jung's Analytical Psychology*

In Carl Jung's 1921 book "Psychologische Typen," the Swiss psychiatrist developed an extensive theory of psychological traits. A pivotal turning point in the area of personality psychology was marked by Jung's psychological types, which marked a substantial break from the physiological ideas of his period (Jung, 1971). After Hippocrates, Jung proposed his psychological kinds, which served as the foundation for contemporary personality theories. Extraversion vs. introversion, sensing vs. intuition, thinking vs. feeling, and judging vs. perceiving are only a few of the cognitive attitudes and functions he described as influencing individual learning styles (Jung, 1971). As per Jung's theory, people's perception of the world and how they make judgments is what essentially differentiates people. These variations are the result of the interaction among cognitive processes and attitudes. The cognitive functions are categorized as functions concerning "obtaining information" and "decision making". Sensing (S) and Intuition (N) are the "obtaining information" functions, while Thinking (T) and Feeling (F) are the "decision making" functions. Jung claimed that everyone predominantly employs one of these four functions, whether consciously or unconsciously (Myers & Myers, 1995). The direction of a person's energy flow is determined by their attitudes, extraversion (E) and introversion (I). Extroverts have a stronger tendency to focus on the external world. The dimensions of perceiving (P) and judging (J), which determine whether a person chooses to utilize a decision-making function, thinking or feeling, or an information-gathering function, sensing or intuition, when responding to their external environment, are also included in Jung's psychological types (Jung, 1971).

Jung's classifications also have significant consequences for learning styles. Intuitive people could enjoy learning through theoretical, conceptual challenges, whereas sensing people would learn better through actual, practical exercises. Individuals who are feeling

might benefit from personal, value-oriented circumstances, whereas those who are thinking could prefer rational teaching and objective content. While introverts might do best in autonomous or one-on-one learning contexts, extraverts might prefer group projects or discussion-based seminars. Last but not least, judging people may favour organized, planned learning whereas perceiving people may do best in more adaptable, spontaneous learning situations (Lawrence, 1993).

Although the validity and reliability of Jung's typology have been questioned, his theory significantly affected learning style models and personality psychology, which lead to the introduction of popular tools like the Myers-Briggs Type Indicator (MBTI) (Myers & McCaulley, 1985). Jung's theory has been critiqued for its abstract nature and the lack of empirical evidence supporting his typology. While Jung's concepts of introversion and extraversion have been influential, the broader applicability and reliability of his psychological types have been questioned. Critics argue that Jung's theory lacks the methodological rigor necessary for scientific psychology and that his typology oversimplifies the complexities of human personality (Eysenck, 1994; Myers & McCaulley, 1985).

Jung's Analytical Psychology is frequently criticized for being subjective and for lacking scientific rigor and empirical support, especially when it comes to its theories about archetypes and the collective unconscious. According to Schultz, D. P. and Schultz S. E. (2011), the scientific community finds it difficult to measure or validate these constructs, thereby undermining the credibility of Jung's theories. Jung's claim that there are universal archetypes and a collective unconscious that all people share faces cynics because it relies more on introspective analysis and anecdotal evidence than on experimental verification or empirical data. Moreover, Stevens & Slavin (1995) has criticized Jung for his dependence on introspection and personal interpretation over empirical observation or experimentation,

arguing that this could result in confirmation bias and subjective bias in analysis. This has raised doubts about the reliability and replicability of Jungian analyses and therapeutic techniques, as they heavily depend on the therapist's interpretation and the client's introspection, leaving them vulnerable to personal biases. Furthermore, many in the field of psychology have demanded a concrete, evidence-based framework, and Jung's emphasis on symbolism and metaphorical interpretations in dream analysis and other therapeutic practices has been perceived as excessively ambiguous and prone to misinterpretation (Samuels, 2003). Critics argue that Jung's method could favour subjective symbolism over objective analysis, which could impede the advancement of therapy and result in interpretations that are unclear or deceptive.

2.5.4 *Adler's Individual Psychology*

Alfred Adler, who was a contemporary of Freud and Jung, developed his theory in the early 20th century, focusing on the importance of social interest and the concept of striving for superiority, introducing the idea of the inferiority complex and its influence on personality. Adler's focus on social interest and community feeling as central to personality development has been critiqued for its limited consideration of innate biological factors and the complex interplay of genetics and environment in personality development. Critics argue that while Adler's theory offers valuable insights into the social aspects of personality, it may overlook the role of inherent psychological and physiological factors (Ansbacher & Ansbacher, 1956; Hoffman, 1994).

Adler's theory of the "creative self" as a motivating factor in personality development has also received recognition for highlighting the potential for self-actualization. Adler's theory emphasizes the ability of the individual to actively shape their own destiny through

creative problem-solving and goal-directed behaviour, in contrast to Freud's deterministic view of personality or Jung's emphasis on archetypal forces. Adlerian theory's emphasis on individual accountability and self-determination in the search for purpose and fulfilment is in line with modern human-centred and existential psychological perspectives (Carlson & Englar-Carlson, 2017). In addition, Adler's therapeutic approaches, which include empathy, encouragement, and the utilization of early memories, have received recognition for their applicability and accessibility. Adlerian therapy places a strong emphasis on developing a cooperative therapeutic alliance between the client and the therapist, with a shared emphasis on goal-setting and respect. Adlerian therapy seeks to enable people to overcome barriers to personal development and make positive life changes by assisting them in exploring their subjective experiences and gaining understanding of their underlying motivations. This focus on self-actualization and empowerment is consistent with current psychotherapy trends that value client autonomy and strengths-based methods of treating mental illness.

Adler's Individual Psychology has been widely criticized for placing too much emphasis on social factors in personality development, which some academics believe may be at the expense of innate biological factors and the intricate interactions between genetics and environment (Ansbacher and Ansbacher, 1956; Hoffman, 1994). Although Adler's emphasis on social interest and a sense of community offers insightful information about the interpersonal dynamics that shape personality, some argue that it may oversimplify the complex process of human development. The great variation seen in individual behaviours and traits may not be sufficiently explained by Adler's theory since it minimizes the importance of biological tendencies and genetic influences.

Furthermore, it has been suggested that Adler's theory of the "inferiority complex" has the potential to diagnose common emotions of inadequacy, which could result in the

medicalization of commonplace experiences (Sweeney, 2014). Because of this diagnosis, people may seek out pointless therapies or interventions for feelings of insecurity that are really normal and controllable. Wagoner et al. (2014) have highlighted the need for a more culturally sensitive approach to understanding personality development, noting that Adler's theory has also been criticized for its low attention to cultural diversity and its applicability across various cultural contexts. Adler's theories, which stem from his observations of Viennese society during a specific historical period, have been criticized for failing to adequately represent the wide variety of cultural experiences and values that influence people's lives all over the world.

2.5.5 Erikson's Psychosocial Development Theory

Erikson (1950), in the mid-20th century, proposed a theory that extends across the lifespan, emphasizing eight stages of psychosocial development. Each stage presents a crisis that contributes to personality development, integrating social and cultural factors. Erikson's theory, though widely respected for its lifespan perspective on development, has been criticized for its lack of empirical grounding and the difficulty in testing its stages. Critics also point out that Erikson's stages may not universally apply across different cultures and socioeconomic backgrounds, questioning the theory's universality and flexibility in accommodating diverse life experiences (Kroger, 2006). There have also been concerns expressed by some academics regarding Erikson's framework's possible oversimplification of complex human experiences. Moreover, Erikson's Psychosocial Development Theory has been criticized for lacking empirical evidence to support his concept of distinct stages and crises. Although the theory provides a thorough framework for comprehending human development, some academics contend that the crises and stages may be challenging to verify empirically

(Waterman, 1999). It has been questioned whether Erikson's classification of distinct phases, each with a corresponding crisis, is applicable to a wide range of demographics and cultural contexts. Critics cast doubt on the universality of Erikson's suggested stages, arguing that people's experiences and difficulties throughout development may differ greatly depending on elements like culture, socioeconomic status, and historical background. Moreover, the idea that there is a crisis at every turn suggests a straight line in the process of development, which could be oversimplifying the intricate and multifaceted process of human development. This criticism calls into question whether Erikson's theory can be applied to people who experience development in non-linear ways or who might not neatly fit into his suggested developmental timeline (Lerner, 2018).

2.5.6 *Myers-Briggs Type Indicator (MBTI)*

Carl Jung's theories served as inspiration for the creation of Isabel Briggs Myers and Katharine Cook Briggs' personality assessment instrument, the Myers-Briggs Type Indicator (MBTI). Sixteen personality types are identified, based on four dichotomies: Introversion vs. Extraversion, Sensing vs. Intuition, Thinking vs. Feeling, and Judging vs. Perceiving. Helping people understand themselves and others is the main objective since this theory promotes better interpersonal relationships, professional advancement, and personal growth.

The validity and reliability of the MBTI have drawn both praise and criticism. Research shows that it can be useful in situations where it is advantageous to comprehend a variety of personality types, such as team building and counselling (McCaulley, 2000). Its dichotomous nature and scientific rigor, however, have drawn criticism for potentially oversimplifying the complexity of personality traits (Pittenger, 1993). The MBTI is criticized for its binary categorization, which does not reflect the continuum of human personality and

yields inconsistent results on repeated tests, despite its popularity in a variety of settings, including workplaces and educational institutions, where it is used to improve team dynamics and guide career and educational pathways (Thompson & Borrello, 1986). Moreover, the application of the MBTI in diverse cultural contexts reveals both culturally specific and universal personality patterns, indicating the necessity of cultural sensitivity in result interpretation (Furnham, 1996). This cultural component emphasizes how difficult it is to apply the MBTI universally and highlights ongoing discussion and critique among experts and researchers.

The MBTI has been criticized heavily for lacking the empirical validity and reliability that are essential components of psychological measurement. It fails to adhere to many of the fundamental requirements that are expected from scientific psychological tests, according to critics. Test reliability is a problem because, for example, the same person taking the test multiple times frequently gets different results (Pittenger, 1993). The MBTI's ability to produce accurate or long-lasting personality assessments may be compromised by this variability.

2.5.7 Big Five Personality Traits (BFPT) Model

The exploration of the BFPT model represents a pivotal section of this review, focusing on one of the most empirically supported and broadly recognized frameworks within personality psychology. This model delineates personality across five major dimensions: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (OCEAN). These dimensions capture a universal language for describing individual differences in behaviour, emotion, and thought in a structured manner. The BFPT model's importance extends beyond mere descriptive utility; it is highly regarded for its predictive capabilities

concerning various significant life outcomes, including but not limited to academic success, career achievements, and the quality of interpersonal relationships (John et al., 2008). Initially, this section introduces the conceptual underpinnings and summarizes pivotal research findings related to the BFPT. However, the forthcoming discussions are combined to investigate into more detailed analyses, critically examining each dimension's cross-cultural applicability, real-world relevance, and the criticisms concerning the model's scope and the foundational mechanisms governing personality traits. These subsequent sections aim to enrich the understanding of the intricate interplay between personality dimensions and their influence on human behaviour and social interactions (Goldberg, 1993; McCrae & Terracciano, 2005).

While the BFPT model is one of the most empirically supported personality frameworks, it has faced criticism for its descriptive rather than explanatory nature. Critics argue that while the model effectively categorizes personality traits, it does not fully explain the underlying mechanisms that drive these traits. Additionally, the model's applicability across different cultures has been questioned, suggesting that it may not capture all aspects of personality globally (Block, 1995; McAdams, 1992).

2.6 Learning Styles: Theories, Models and Critical Perspectives

Learning styles are the continuing individual differences in cognitive processes and comprehension. Within the educational perspective, learning style is the notion that each student has his or her own unique way of learning. According to Keefe (1979), these behaviours, containing cognitive, emotive, and physiological aspects, serve as consistent indicators of how learners perceive, interact with, and respond to the learning environment. These learning styles, therefore, do not only dictate the way in which learners prefer to be given information but also influence how this information is internalized and used.

Furthermore, learning styles largely influence students' academic achievements and general

experiences in learning. Felder and Spurlin (2005) add that learning styles are biological and mental traits that serve as constant indicators on how students acquire knowledge and process information.

The role of unique approaches to learning has been deliberated in many studies within the past decade and has been generally accepted as an important notion within the educational framework. According to Sternberg and Zhang (2005), aligning teaching methods with students' individual learning styles can enhance learning outcomes and, subsequently, academic success. Felder (1993) states that an extensive variety of instructional methods needs to be applied by educators in order to accommodate students' unique learning styles rather than opting for one particular strategy which might not be aligned with all students' learning outcomes. This, however, has to be cautiously approached as several researchers have disagreed with its empirical support.

Research conducted by Dembo and Howard (2007) highlights that despite its popularity, there is no robust empirical evidence supporting the efficacy of tailoring teaching methods to specific learning styles, and they caution educators against adopting unproven practices. Moreover, studies such as those conducted by Pashler et al. (2008) and Rohrer and Pashler (2012) have found little to no evidence to substantiate the effectiveness of tailoring instructional strategies to students' purported learning preferences. Additionally, Coffield (2013) further critiques the persistence of learning style theories, arguing that they lack a solid theoretical foundation and divert attention from evidence-based practices that genuinely enhance learning outcomes. Newton and Miah (2017) also emphasize that the learning styles myth is not only unsupported by scientific evidence but can also propagate ineffective teaching methods and potentially hinder the learning process by promoting a fixed mindset. These findings suggest that while the concept of learning styles is popular and appealing to

many scholars, it may not hold up under rigorous scientific examination. Together, these works underline the need for educators to move beyond the allure of learning styles and focus on strategies grounded in cognitive science and pedagogical research.

The categorization of learning styles has been the focus of extensive research in the field of education, leading to the development of numerous frameworks. While these models vary in their categorizations, they all emphasize the importance of understanding and recognizing individual learning preferences to enhance the educational process. Despite facing criticism regarding their scientific validity and practical application, these models remain widely used today, reflecting their enduring influence in both educational theory and practice. Various theories and models in educational psychology attempt to explain and categorize learning styles, offering diverse perspectives on how to address and accommodate individual learning differences.

The pioneering work of Pavlov (1927) on Classical Conditioning is outlined, illustrating how associative learning can occur through stimulus and response. Operant Conditioning, as developed by Skinner (1953), is also detailed, highlighting the role of reinforcement and punishment in behaviour modification. Piaget's (1954) stages of Cognitive Development are described as well, emphasizing how children construct knowledge as they interact with the world around them. Constructivism by Vygotsky (1978) is also considered for its perspective on the social context of learning and the importance of cultural tools in cognitive development. Moreover, this section talks about the VARK Model (Fleming, 1995), which categorizes learning preferences into visual, auditory, reading/writing, and kinaesthetic modalities. The section further examines Kolb's Experiential Learning Theory (1984), which proposes that learning is a process whereby knowledge is created through the transformation of experience. The section also addresses the criticisms regarding those theories and the

debates over the applicability of learning styles and the challenges to developmental stage theories in accounting for variability in learning. This critical examination allows for an understanding of the complexities and intricacies of learning theories and their impact on educational practices.

As people began to notice their different ways of learning, the idea of various learning styles became more popular. Researchers realized that mastering these distinctive teaching methods might enhance the effectiveness of instruction and student learning results (Coffield et al., 2004). The early learning style theories have exerted a significant impact on education and pedagogy due to their emphasis on the importance of applying diverse teaching methods that cater to different learner types. By establishing a connection between an individual's preferred learning approach and their personality traits, they have also constructed a connection to theories of personality. For instance, some researchers, like Furnham (1992), have suggested a link between extraversion and introversion and a preference for social (group) or solitary (individual) learning styles. Additionally, they associate sensing and intuition with a preference for concrete (kinaesthetic) or abstract (visual) learning modalities. Though some researchers have questioned their efficacy, it should be noted that the use of learning styles in education has not been without criticism (Pashler et al., 2008). Studying learning styles has clearly helped to understand the different ways individuals learn, laying the groundwork for more research in this area.

2.6.1 *Classical Conditioning (Pavlov)*

In the early 20th century, Ivan Pavlov's experiments with dogs led to the discovery of classical conditioning. The procedure entails the acquisition of knowledge through the process of association, where a neutral stimulus becomes linked with a reflexive reaction. The

contributions of Pavlov (1927) established the fundamental concepts around which behaviourist theories of learning are built. Critics argue that human learning is far more complex than simple stimulus-response associations, involving intricate cognitive processes that Pavlov's model does not account for (Miller, 1991; Olson & Fazio, 2001).

It has been argued that the reductionist method of classical conditioning ignores the emotional and social contexts of learning, aspects that Bandura (1977) emphasises are crucial, highlighting the importance of social context and observational learning. Furthermore, the discoveries made in the field of neuroscience have broadened the comprehension of the mechanisms underlying classical conditioning, demonstrating that it involves more than just the mechanical association of stimuli and responses. Numerous brain regions linked to memory, attention, and decision-making are activated during conditioning (Schultz, 2006). The simplicity of Pavlov's original model is called into question by this evidence, which favours a more comprehensive understanding of conditioning that takes neural networks and cognitive processes into account (LeDoux, 2000; Schultz, 2006).

2.6.2 *Operant Conditioning (Skinner)*

B.F. Skinner (1953) further developed the behaviourists perspective in the mid-20th century with his theory of operant conditioning. This approach prioritises the acquisition of knowledge through the outcomes of actions, wherein incentives and penalties influence subsequent behaviours. Skinner's research developed the notion of reinforcement and its influential function in the processes of learning. His emphasis on behaviour modification through reinforcement and punishment, however, has been criticized for its applicability to understanding the depth of human learning and motivation. Critics highlight that human behaviour is influenced by internal drives and cognitions, which Skinner's model largely

ignores. This theory's application to education has been questioned, with concerns that it may oversimplify the learning process and overlook the role of intrinsic motivation and self-determination (Chomsky, 1959; Deci et al., 1999).

Nevertheless, there has been much criticism of Skinner's emphasis on observable behaviours and external control through reinforcement, especially with regard to its applicability and efficacy in intricate human learning contexts. Critics argue that operant conditioning might be too mechanical to adequately account for the complexities of human learning, which is influenced by complex internal thought processes and emotions in addition to external stimuli (Chomsky, 1959). The criticisms imply that the theory may not adequately foster a deep understanding, since it might overlook the internal motivational states that drive learning and personal growth. The use of operant conditioning in educational settings has also generated discussions regarding the method's long-term efficacy and ethical implications. There have been worries expressed regarding the possible decline in intrinsic motivation resulting from learners' dependence on external rewards, which could cause them to place a higher value on the learning process itself. The development of independent learning and critical thinking abilities may eventually be hampered by this (Deci et al., 1999). Furthermore, new developments in cognitive neuroscience have shed light on issues that call into question operant conditioning's behavioural focus. Research has demonstrated that learning is a complex process involving neural networks that actively participate in internal cognitive mapping and processing in addition to responding to external stimuli. These results imply that effective learning strategies should take into account the learner's cognitive and emotional states in addition to behavioural outcomes, supporting a more holistic view of learning that integrates both the behavioural and cognitive aspects (Gazzaniga & Sprague, 1995).

2.6.3 Bandura's Social Learning Theory (SLT)

Albert Bandura, in the mid-20th century, introduced the SLT, which expanded the behaviourist framework to include learning through observation and imitation. Bandura's theory emphasized the significance of social environment and cognitive processes in the process of learning. It included conceptual frameworks such as modelling and observational learning, which involve the acquisition of behaviours, attitudes, and emotional reactions. Bandura introduced several key elements, including the ideas of observational reinforcement and self-efficacy, which have broadened the understanding of how individuals perceive and are influenced by their social environment. Moreover, this theory emphasizes how important cognitive functions like motivation, attention, and retention are when people watch and then mimic the actions of others. Additionally, while the theory established the important role that social interaction and observation play in learning, it was criticized for failing to take individual differences and biological tendencies into account. Critics argue that learning has strong biological and genetic roots in addition to being a result of environmental and social influences.

Furthermore, the SLT has drawn criticism for its limitations and the factors that are prioritized, even though it has made a substantial contribution to educational psychology and behavioural studies. Critics have pointed out that while Bandura's model accurately incorporates the role of the social environment, it may not sufficiently account for the biological and genetic factors that also shape learning and behaviour. This discrepancy raises questions about whether the theory has been applied too simplistically to the wide range of individual experiences and the intricate ways that genetic, biological, and environmental factors interact to shape human learning. SLT has also drawn criticism for undervaluing innate biological tendencies that may, apart from social modelling, influence people to specific

behaviours. For example, the theory falls short in addressing aspects of temperament and neurobiological responses, which can have a significant impact on behaviour patterns. Some critics, such as Judith Harris, argue that the impact of the social environment may be exaggerated. Harris (1998) points out that children adapt to their peer groups as well as their family and immediate social models, indicating a more distinct interaction of social influences than Bandura first suggested.

2.6.4 Cognitive Development (Piaget)

In the middle of the 20th century, Jean Piaget (1954) and Margaret Cook (1952) put forth a theory of cognitive development that was centred on how children create their own understanding of the world around them. Piaget's phases of cognitive development highlight the importance of active engagement and interaction with the environment in learning and explain how children's capacities for thought and reasoning change from birth to adolescence. Additionally, Piaget's theory has influenced educational practices by emphasizing the value of learning activities that are appropriate for a child's developmental stage and in line with their cognitive abilities. According to his theory, for instance, younger children gain from practical, hands-on experiences because they enable them to develop mental models and reach higher, more sophisticated cognitive levels. Children develop more complex problem-solving abilities as they get older because they can handle abstract ideas and hypothetical scenarios. Due to this understanding, instructional strategies that prioritize teaching methods suitable for the developmental stage have been developed.

Piaget's theory of cognitive development, although widely accepted, has been subject to various criticisms. Piaget's stages, according to critics, are overly rigid and fail to take into consideration the variation in each child's unique development. When they receive the right

instruction and environmental support, children can perform tasks at earlier ages than Piaget acknowledged, according to later research (Mehler & Bever, 1967). However, the idea has been criticized for undervaluing children's abilities in early cognitive development and ignoring how social and cultural settings affect kids. (Cole, 1998; Lourenço, 2012; Siegler, 1998). These elements imply that cognitive development is more complex and subject to a wider variety of influences than is suggested by Piaget's model.

2.6.5 *Constructivism (Vygotsky)*

Lev Vygotsky's (1978) theory of social constructivism marks a major shift in understanding cognitive development by focusing on the crucial role of social interaction and cultural context. Unlike theories that emphasize individual cognitive development in isolation, Vygotsky introduced the concept of the Zone of Proximal Development (ZPD), which describes the range of tasks that a learner can perform with the help and guidance of others, but cannot yet perform independently. This concept serves as the foundation for the educational strategy known as scaffolding, in which a teacher or other knowledgeable individual helps a student solve problems or pick up new skills by gradually reducing help as the student gains more competency.

Moreover, Vygotsky's focus on the social foundations of cognition contradicts previous theories by arguing that cognitive processes are essentially social and cultural before they became internalized by the individual. His theories have led to a greater appreciation for cooperative learning settings where students participate in discussions that improve their capacity for critical thought and problem-solving. Furthermore, Vygotsky's theories have been expanded upon and implemented in a variety of contemporary educational contexts, highlighting the ways in which digital technologies can improve the social components of

learning. Through adaptive learning systems, educational technology can create environments in which students collaborate virtually with their peer who are located in different geographical locations, in addition to interacting with the content. The idea that social interaction is essential for cognitive development is supported by this application of Vygotsky's principles to technologically enhanced learning environments, which expands social interaction outside of traditional classroom settings. Researchers have explored how tools such as online forums, interactive simulations, and collaborative virtual workspaces can scaffold learning effectively, further validating the relevance of Vygotsky's ideas in the 21st century (Dabbagh & Kitsantas, 2012; Resta & Laferrière, 2007).

Constructivism has been criticized for what is arguably an overemphasis on the cultural and social context of learning at the expense of the learner's active participation and internal motivation. Even though social context is unquestionably significant, some critics argue that people are born with the skills and motivations necessary to learn without the direct assistance of other people. Critics such as Kirschner et al. (2006) and Mayer (2004) have suggested a more balanced perspective that takes into account both individual and social factors in the learning process.

2.6.6 VARK

The VARK model, first presented by Neil Fleming in 1987, was one of the hypotheses on early learning styles. The model identifies four main learning styles: visual, kinaesthetic, auditory, and read/write. This theory groups students based on the sensory modality that they prefer to use to receive information. People who have a preference for visual aids, like graphs, pictures, and diagrams, to help them comprehend and remember information better are said to have a visual learning style. When exposed to auditory stimuli like lectures, dialogues, and

audio resources, auditory learners exhibit optimal learning outcomes. Individuals who identify as dominantly reading and writing learners are more likely to learn information from text-based materials. Lastly, kinaesthetic learners show the best learning results when they participate in practical tasks, hands-on activities, and real-world experiences. The VARK model has been instrumental in helping educators understand that students have unique learning needs, which calls for the use of a variety of instructional strategies to meet each student's individual needs. However, it is important to note that individuals may have a combination of styles rather than just one since these four VARK model aspects are not mutually exclusive (Fleming & Mills, 1992).

The VARK model's concept of learning styles has been extensively critiqued for the lack of empirical evidence supporting the idea that instructional methods matched to individual learning styles improve learning outcomes. The model's critics argue that it ignores how context affects learning and oversimplifies the complexity of learning preferences. Research has repeatedly demonstrated that the nature of the task and the content matter more when it comes to effective teaching strategies than does the alignment of instructional strategies with assumed learning styles (Pashler et al., 2008; Newton, 2015). Moreover, several studies have cast doubt on the efficacy of learning styles-based instruction, emphasizing in particular that matching teaching strategies to individual learners does not result in a significant improvement in learning outcomes. For example, a thorough analysis conducted by Pashler et al. (2008) showed that there is little empirical evidence to support learning styles theories, as experiments did not confirm the positive educational effects of modifying instruction according to the VARK model. This raises questions about the model's applicability in educational settings and indicates that funds would be better used to support all students with evidence-based teaching strategies.

Neuroscientifically, the VARK model has been critiqued that the brain's learning processes are far more interconnected than the model makes allowance for. According to research on cognitive neuroscience, visual, auditory, and kinaesthetic processing are all integrated rather than discrete cognitive processes. By arguing that classifying learners into these styles may oversimplify and misrepresent the complexity of how learning actually occurs, this challenges the fundamental theory of the VARK model (Howard-Jones, 2014; Vaiserman, 2015).

2.6.7 Felder-Silverman Learning Style Model (FSLSM)

The FSLSM, which was first presented in 1988, is a significant development in the comprehension of the diverse learning preferences exhibited by students. It finds five unique dimensions along which individual learning preferences differ, in contrast to simpler models: Intuitive vs. Sensing, Visual vs. Verbal, Active vs. Reflective, Sequential vs. Global, and Inductive vs. Deductive. These dimensions encompass the entire range of student preferences for information processing, organization, and reception. A student's preference for concrete facts and data or abstract theories and concepts is examined. For instance, in the Intuitive versus Sensing dimension. Similarly, the Visual versus Verbal dimension distinguishes between people who learn best from written and spoken words and people who learn best from diagrams, images, and spatial understanding (Felder & Silverman, 1988).

Because it provides a framework that teachers can use to better tailor their instruction to the diverse learning styles of their students, this model is especially valued for its application in educational settings. Teachers can make learning environments more effective by offering structured materials for sequential learners alongside more exploratory tasks for global learners, or by combining visual aids for visual learners with thorough explanations for

verbal learners. Furthermore, empirical research has provided support for the Felder-Silverman model, indicating that matching instructional strategies to students' learning styles improves academic performance. According to Felder and Spurlin (2005), students perform better and report higher levels of satisfaction when instructional strategies are modified to fit the learning styles outlined in the model. This evidence suggests that understanding and addressing diverse learning styles is not just a theoretical exercise but has practical implications that can lead to improved educational effectiveness.

Although the FSLSM is a comprehensive approach, it has been criticized. One of the main criticisms is that the strict classification of students into discrete learning styles may oversimplify the complexities of unique learning processes. Human learning behaviour is flexible and adaptive. This criticism argues that although the model helps explain general preferences, it might not adequately represent the dynamic way that students learn in various contexts or over time (Kirschner et al., 2006). Another significant criticism is related to the empirical validation of the model's effectiveness in improving educational outcomes. While some research has found evidence in favour of the model, other studies have not consistently found evidence in favour of the model's suggestions that learning outcomes are improved by teaching strategies customized to individual learning styles. The practical usefulness of implementing the model in various educational contexts is called into question by this lack of consistent empirical support (Pashler et al., 2008). Furthermore, the model has been critiqued for potentially reinforcing stereotypes about learning capabilities, which might limit the exploration of alternative learning methods that could benefit learners. Educators may unintentionally limit students to specific learning activities by designating them as preferring one learning style over another. This could potentially hinder their growth in areas that are not in line with their identified style (Judge et al., 2007).

2.6.8 Kolb's Experiential Learning Theory (KELT)

KELT, which was first introduced by David Kolb in 1984, emphasizes that experience is transformed into knowledge. This model's cyclical learning process is made up of four stages: Abstract Conceptualization (AC), Concrete Experience (CE), Reflective Observation (RO), and Active Experimentation (AE). Accommodating, Diverging, Assimilating, and Converging, on the other hand, are Kolb's four main learning styles. Each learning style corresponds to a preference for one of these cyclical stages, indicating that moving through these stages continuously is necessary for effective learning and improves the depth and retention of information. In numerous educational contexts, this fundamental idea has been reinforced and developed, demonstrating its wide applicability and usefulness (Kolb, 1984; Kolb, A. Y. & Kolb, D. A, 2009).

KELT is widely regarded as one of the most significant concepts in the field. Kolb's research hypothesis that knowledge is produced cognitively through the transformation of individual experiences into meaningful understanding. According to Kolb, humans possess distinct inclinations for comprehending experience, either through CE or AC, and subsequently converting it into knowledge through RO or AE. These inclinations manifest as four different learning styles: Converging, which integrates AE and AC; Diverging, which combines RO and CE; Assimilating, which connects AC and RO; and Accommodating, which combines AE and CE. Further research has investigated and confirmed these styles in greater detail, emphasizing their influence on learning outcomes and processes (Kolb, 1984; Morris, 2020).

Kolb's model, which has been widely used, has drawn criticism, especially for its overly broad generalizations and possible circular reasoning within its framework, which views the stages of learning as both the process and the result. The different learning styles

that Kolb proposed are also met with criticism, as there is a lack of empirical data supporting either the existence of these styles or their value in enhancing learning outcomes. Moreover, questions have been raised concerning the model's generalizability to a variety of learning contexts and populations, implying that it might not adequately capture the complexities of the learning process (Kayes, 2005; Merriam et al., 2020).

Nonetheless, there is no denying the value of Kolb's theory in advancing an all-encompassing approach to education. It motivates teachers to design classrooms that support each phase of the learning cycle, promoting a more balanced development of students' critical thinking, reflective, and practical application skills. Kolb places more emphasis on the integration of experience and reflection than other models, such as the VARK, which primarily focuses on sensory-based learning preferences. This makes for a more thorough and transformative educational experience. Because of this, it is especially relevant to fields that emphasize flexible learning and the capacity to use information in challenging, unforeseen circumstances (Harvey et al., 2016; Kolb, A. Y. & Kolb, D. A, 2005).

Despite criticisms, Kolb's theory remains a pillar in educational psychology and continues to have an impact on teaching methods and student engagement all over the world. It promotes an inclusive educational strategy that considers not only the assimilation of knowledge but also the thorough acquisition of the skills required to successfully navigate and innovate in one's surroundings. Higher levels of engagement and retention have been demonstrated to be facilitated by this holistic approach, supporting its continued use over more constrained models (Jarvis, 2006; Kolb, 1984).

2.7 Relationship Between Personality Traits & Learning Styles

Motivation levels in learning for the students would depend on the uniqueness of a learning style and attributes of personality. Comprehending this can aid educators in

implementing teaching techniques and approaches that would promote student involvement and academic achievements (Wolk & Nikolai, 1997). A study conducted by Selim (2007) examined the impact of personality factors on students' preferences for various learning settings within the UAE context, further demonstrating the significance of personality characteristics in learning. To further support the correlation among personality characteristics and learning preferences, Selim discovered that Extraversion, one of the factors in the BFPT, strongly increased students' preference for interactive and collaborative learning environments.

These studies highlight the intricate interplay concerning personality characteristics and learning preferences and their combined effects on academic achievement. They demonstrate a growing scholarly interest in comprehending these processes in the specific sociocultural setting of the UAE and the greater Gulf area. This signifies a positive tendency towards more individualized, learner-centred instructional practices that take into account and adapt to personal preferences for learning and personality (Cassidy, 2004).

Few studies have focused on the Middle East; the majority of research on personality traits and learning styles has been done in capitalist-oriented nations (Diseth, 2006). Studies have shown that people in the Middle East have quite different personalities, attitudes, and values than people in capitalist Western nations (Kalyuzhnova & Kambhampati, 2008). Furthermore, while a number of studies have looked at the connection between personality traits and related concepts, very little study has focused on the connection between learning styles and personality features, especially in the Middle East (Caspi et al., 2005).

Various studies looked into the link between a student's personality qualities and their styles of learning. The association between personality types and academic achievement among accounting students in the United States and the United Kingdom was investigated by

Oswick and Barber (1998) and Lawrence & Taylor (2000), respectively. The findings were mixed; Oswick and Barber (1998) found no link between accounting students' personality types and their unique learning styles and their success in accounting classes. Lawrence and Taylor (2000), on the other hand, discovered that students with introverted personalities scored higher than those with extroverted personalities. While it is clear that similar research on this topic have been undertaken in a number of nations around the world, no such study has been conducted in the UAE. And although it is clear that similar studies have been carried out in a number of countries around the world, no particular study has been done extensively on this subject in the UAE. Therefore, the gap in this area will be addressed by this research.

In summary, the BFPT and KELT are significant frameworks that provide extensive perspectives on human nature and the processes of learning. Gaining a comprehensive comprehension of these ideas and their intricate interactions might yield a more deeper understanding of learning behaviour and personality, thereby facilitating the development of enhanced educational methods and results.

2.7.1 Learning in a Blended Learning Environment.

In order to improve their educational outcomes, several countries are attempting to keep up with the rapid diffusion of technology in the modern day by adopting online learning platforms and cutting-edge teaching strategies like blended learning. A Virtual Learning Environment (VLE) is an online classroom that allows instructors to interact with students, give resources, and conduct informational exchanges. Blended learning is an extension of this model. Blended learning, which is mostly utilized as a cutting-edge method of instruction, can produce the perfect environment for raising student engagement and performance levels (Cannott et al., 2023).

Earlier studies (Gagne & Shepherd, 2001; Woodill & Officer, 2004) showed uncertainty on blended learning's effectiveness in comparison with the traditional face-to-face classroom sessions. This uncertainty could have stemmed from the primitive technology available at the time, as technology was not as advanced as the ones available today and do not offer the kind of interactive features such as VLEs that are available today. While blended learning has been used for nearly a decade in some parts of the world, its adoption has been escalated due to the Covid-19 pandemic. In the UAE, the Ministry of Education (MOE) instructed schools and universities to largely reduce campus visits and face-to-face learning and instead continue education at a distance via online systems (Alterri et al., 2020). Some universities even gave students the freedom to choose between attending campus or studying online from home. This kind of hybrid learning has given students some flexibility when it comes to their education. Studies by Hussain et al. (2020) and Thabet et al. (2021) demonstrated the effectiveness of blended learning in universities and claimed that students and faculty members recognized the merits of incorporating digital technology in the education process; both parties benefited from this, but most importantly, this had little to no impact on students' overall performance. Hence, it is interesting to investigate whether students' distinctive learning styles and personalities play a role differently in online versus face-to-face components of a blended learning environment

2.8 Field Development & Advancements

Empirical studies and technological innovations in the discipline are the major contributors towards emerging trends in personality traits and learning styles, which provides the study with a more in-depth understanding of the concepts. In recent decades, significant advancements and progress have been made in the field of personality traits and learning styles. The growth of empirical research and the introduction of new technology have

benefitted the area and led to a deeper comprehension of these topics (Howard-Jones, 2014; Poropat, 2009). For instance, the integration of machine learning techniques has provided deeper insights into these areas, enhancing the comprehension of individual differences in learning processes (Sonlu et al., 2024). Additionally, the application of advanced quantitative methodologies has improved the reliability of assessment instruments, leading to a better understanding of the interplay between personality, cognition, and behavior (von Davier, 2023). The progress in these areas has been facilitated by the use of rigorous quantitative research methodologies, a meticulous examination of the reliability of assessment instruments, and a deeper understanding of the interplay between personality, cognition, and behaviour (Chamorro-Premuzic & Furnham, 2009). It is significant to note that the area has been shaped by the fusion of several disciplines, including psychology, neuroscience, education, and information technology, each of which has contributed distinct viewpoints and techniques (Dweck, 1986).

Technological advancements, particularly in the domain of neuroimaging, have facilitated researchers in gaining unprecedented insights into the neurological foundations of personality traits and learning preferences. The association among brain anatomy, function, and individual variations in personality and learning has been studied using methods including Functional Magnetic Resonance Imaging (fMRI) and Electroencephalography (EEG) (DeYoung, 2010b; Howard-Jones, 2014). Furthermore, the utilisation of "big data" analysis can provide a more comprehensive understanding of learning processes, owing to the digitization of education and the increasing prevalence of online learning platforms. This has also made it possible for academics to look at how various personality qualities affect how successful certain online learning modalities are (Zhou, 2016). The development of more robust and multidimensional models of personality traits and learning styles has also been

made possible by improvements in statistical methods techniques, such as factor analysis and structural equation modelling (Donnellan et al., 2006; Bartholomew et al., 2011).

2.8.1 Improvements in Measuring Techniques

The development of psychometric tools like the MBTI, the BFPT, and the LSI has made it possible to assess personality traits and learning styles in a more accurate and valid manner (John et al., 2008; Kolb & Fry, 1974; Myers & McCaulley, 1985). As the study of personality traits and learning preferences advanced, there was a growing need for more dependable and accurate assessment tools. The MBTI, the BFPT, and the LSI, which provide more accurate and valid assessments of personality traits and learning styles, were established due to the ground-breaking advancements in psychometrics.

One of the most widely used personality tests nowadays is the MBTI, which was influenced by Carl Jung's theory of psychological types (Myers & McCaulley, 1985). The theory is used in a variety of contexts, from organizational development to career counselling and education (Furnham, 1996; Myers & McCaulley, 1985) and it distinguishes 16 personality types based on combinations of four dichotomies: extraversion/introversion, sensing/intuition, thinking/feeling, and judging/perceiving (Myers & McCaulley, 1985). Despite facing difficulties to its validity and reliability, the MBTI continues to maintain its relevance, particularly in research examining the potential impact of personality traits on learning preferences and interpersonal interactions (Pittenger, 2005). However, because the MBTI uses a type-based method instead of a trait-based method like the BFPT model, MBTI results must be interpreted with caution (McCrae & Costa, 1989).

A self-report questionnaire such as the BFPT was created to measure distinct personality traits. The BFPT (John et al., 2008) model offers a brief and scientifically rigorous

method for measuring the FFM of personality (John et al., 2008). According to Komarraju et al. (2009), this trait-based method has provided researchers with an effective foundation for investigating the links between personality traits and a variety of life outcomes, including learning preferences and academic success. The LSI, on the other hand, has made a substantial contribution to the comprehension of individual learning variations (Kolb, 1976).

Accommodating, diverging, assimilating, and converging are the four distinct learning styles identified by the approach, which is based on ELT. These styles are thought to be influenced by the interaction between a person's perception (concrete or abstract) and processing (active or reflective) of information (Kolb, A. Y. & Kolb, D. A, 2005). The LSI has been extensively utilised in organisational and educational settings to enhance the efficacy of training programmes and improve learning outcomes. To increase its validity and dependability, it has been criticized and called for revision (Coffield et al., 2004). Despite the existence of various viewpoints on the credibility and reliability of these models, it is undeniable that they have improved the examination of personality traits and learning styles through the provision of conceptual frameworks and the stimulation of further investigation aimed at enhancing the understanding of individual learning variations.

2.8.2 *Multidimensional Models*

The development of multidimensional personality and learning style models that integrate cognition, motivation, and emotion has been facilitated by recent research. The FSLSM and the HEXACO personality model stand out among them (Ashton et al., 2014; Felder & Silverman, 1988; Smidt & Seebauer, 2021). The developments that took place later in the field were characterised by the development of multidimensional models that incorporated personality and learning preferences. These models place significant emphasis on

an integrated approach that incorporates cognition, motivation, and emotion. One such illustration is the HEXACO personality model created by Ashton and Lee (2007). The six primary aspects of personality proposed by this model, which transcends the BFPT, include: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. According to research, the HEXACO model has been shown to be effective in forecasting a variety of behavioural outcomes and offers a more detailed understanding of personality (Veselka et al., 2009; Mlacic & Goldberg, 2007). Furthermore, it has ramifications for learning preferences and educational outcomes.

The FSLSM is one of the complete models that have simultaneously been introduced to the field of learning styles. A more thorough description of learning styles was put out by Felder and Silverman (1988), taking into account many aspects such as sensory-intuitive, visual-verbal, active-reflective, and sequential-global. FSLSM has had a major effect on education, assisting in the development of instructional techniques that cater to various student learning preferences and promoting enhanced learning outcomes (Zywno, 2003). A study by Pintrich et al. (1993) adds to the evidence in favour of incorporating cognition, motivation, and emotion into learning style models. The Motivated Techniques for Learning Questionnaire (MSLQ) is a comprehensive instrument created to evaluate students' motivational biases and their use of different learning techniques. This framework provides a dependable means of understanding the intricate interplay of personality, motivation, and learning. These models offer a more extensive understanding of personality and learning styles; yet, their complexity poses challenges in terms of comprehension and application. Nevertheless, the multidimensional approach emphasises the intricacy of personality and learning, providing a more profound understanding of these concepts that might enhance educational implementation.

2.8.3 *Neuroscientific Research*

Neuroscientific research has profoundly advanced knowledge of the brain's role in personality traits and learning preferences. Studies employing FMRI and EEG have illuminated the relationship between brain anatomy, its functions, and the individual differences observed in personality and learning. (DeYoung et al., 2010; Kozhevnikov et al. (2014). These neuroimaging techniques have been instrumental in linking specific brain areas and activities with variations in personality and learning styles. For instance, convincing association among the BFPT and certain brain areas has been demonstrated by DeYoung et al. (2010). People who scored higher on extraversion and openness to experience, for example, had increased volume in the medial orbitofrontal cortex, an area associated with reward, curiosity, and exploration. This study provided empirical evidence in support of personality theories and their relevance to cognitive processes and behavioural patterns.

Concurrently, the field of neuroscience has begun to provide light on the brain foundations of different learning preferences. In this line, Kozhevnikov et al. (2014) made a substantial contribution by examining the brain processes underlying preferences for verbal and visual learning. It was found that those who exhibited a preference for visual learning had increased neural activity in the brain's visual processing areas, whereas those who favoured verbal learning exhibited heightened activation in the brain's auditory and language processing regions. Additionally, EEG research has demonstrated that when performing learning tasks that fit their preferred learning style, people have distinctive neural fingerprints. For instance, when performing physical learning activities, those who preferred kinaesthetic learning differed from their counterparts who preferred other learning styles in their patterns of brain wave activity (Gevins & Smith, 2003). The function of neuroplasticity in learning and adaptation has also been backed up by neuroscientific studies in a broader sense. According to

this body of research, human brains may alter in reaction to learning events, which may have an effect on their learning styles and, possibly, their personality traits over time (Draganski et al., 2006).

Overall, while the findings are undeniably robust, it is imperative to use caution when interpreting them. Two prevalent challenges encountered in neuroimaging research are limited sample sizes and the absence of causation despite association (Liu et al., 2023). However, these developments contribute a novel perspective to the examination of personality traits and learning styles, continuing to offer a promising field for future research.

2.8.4 Applications and Implications

The practical implications of field developments are extensive. The creation of more individualized teaching methods can be facilitated by a better knowledge of individual characteristics, which can also optimize learning outcomes in the classroom (Cassidy, 2004). The advancement and enhancements in one's comprehension of personality traits and learning styles have significant practical implications, particularly within the field of education. Recognizing this paves the way for enhancing educational practices, maximizing learning outcomes, and creating more individualized teaching methodologies (Cassidy, 2004). For instance, knowing that learners have distinct personalities and learning styles might influence how pedagogical tactics are designed and executed in classrooms. To better engage students and improve learning results, teachers can adapt their teaching strategies to accommodate a variety of learner preferences (Felder & Brent, 2005). Additionally, the development of more inclusive classrooms, which promote equality and diversity in education, has also resulted from the identification of different learning styles (Hall, 2013). Furthermore, comprehending the personality traits of students can aid teachers in creating a welcoming and encouraging

learning environment. To control classroom dynamics and personalize interactions with students, for instance, educators might benefit from understanding the basic personality traits of extraversion and introversion (Cain, 2012). Understanding these crucial traits can also help develop student counselling, courses, and educational policy (Poropat, 2009). A study conducted by Zhang and Sternberg (2012) claims that students can also benefit by understanding their own learning styles which would lead to individualizing their learning processes, resulting in more effective study techniques, greater academic achievement, and increased self-efficacy.

The development of personalized learning environments and adaptive learning preferences is also aided by studies on personality factors and learning styles (Kinshuk et al., 2009). E-learning systems, for example, can be modified to respond to various learning preferences in order to create personalized learning routes that might enhance student engagement and accomplishment (Popescu, 2010). Nevertheless, it's important to avoid simplifying or stereotyping of learners while simultaneously acknowledging the benefit of knowing personality traits and learning styles (Coffield et al., 2004). In order to provide a balanced and deeper approach to educational practice, the comprehension of these individual distinctions should operate as a guide rather than a strict categorization.

2.9 Regional Research Context

This section provides important background against which the subsequent subsections, related to personality traits, learning styles, and their interplay within the UAE and broader Arab region, will be considered. Additionally, this section contextualizes the development of research and educational paradigms in the region, observed through the earlier years from the traditional times to the modern times when it would register growing interest in the areas of personality psychology and educational psychology. This outlines the strategic efforts that the

UAE government has put in place to be able to position it as one of the learning and innovation hubs, hence boosting its educational infrastructure and research ability. In addition, this section presents some dimensions of diversity that characterize the Arab world within academic and cultural contexts, and how this particular diversity has an impact on educational research in perspective to understanding student behaviour, processes of learning, and outcomes of education.

This section also addresses the relatively up-and-coming state of research in personality and learning styles. It provides a background by reviewing previous research and more recent studies of how these variables interact within the unique socio-cultural fabric of the UAE and the wider Gulf area. The basic concepts, along with the theories and models and empirical findings related to personality traits and learning styles are explored. The regional context is important in two aspects, firstly, it deepens the understanding of the research environment in specific regions, which is Dubai, UAE. Secondly, it sheds light on the importance of tailoring research practices to be culturally sensitive.

2.9.1 Overview of Research in the UAE & Arab Region

Over the last several decades, the UAE and the larger Gulf area have served as a prime focus for expanding research and higher education breakthroughs (Donn & Al Manthri, 2010). The UAE's strategic initiatives to become a knowledge-based economy, which support a culture of research and innovation inside its higher education institutions, are primarily responsible for this progress (Davidson, 2008). The Arab World hosts a diverse academic environment which engulfs influences from different cultures. This region has been the subject of various studies in fields such as humanities, social sciences, and natural sciences. There has been an increased emphasis in educational psychology research on understanding students'

behavioural patterns, educational achievements, and overall learning experiences. In comparison to Western nations, studies on personality and learning preferences are still in their infancy in the area. The need to improve educational efficiency and recognize individual variations among learners has, however, steadily increased interest in these domains.

Notably, a number of research have sought to analyse the intricate relationships between personality characteristics and learning preferences among students in the UAE and other Gulf nations. For instance, Hakimi et al. (2011) studied how Emirati students' personality qualities and academic success related to one another. The results of the study validated the significance of personality traits in influencing academic performance. A similar trend towards visual and kinaesthetic learning methods was seen in Chaabane's et al. (2021) study on learning style preferences among Arab and North African students. These findings mark the start of a vibrant area of research that holds the capacity to greatly enhance educational practices at the regional level. There is a significant amount of knowledge to be acquired on the interrelationships and viewpoints between the BFPT and KELT among higher education students in the UAE, nevertheless the valuable insights provided by the current study. Further investigation in this field is imperative and holds the capacity to significantly impact educational methodologies, considering the cultural and educational dynamics of the region.

2.9.2 Relevance to Personality Traits & Learning Styles

Despite being sparse, research on personality characteristics and learning styles in the UAE and the larger Gulf area has proven illuminating. Indicating the importance of personality in educational situations, Afari's et al. (2012) study on Emirati students discovered substantial correlations between personality characteristics and academic success.

Additionally, local studies have looked at Arab students' preferred learning methods and found that visual and kinaesthetic learning techniques are frequently preferred (Chaabane et al., 2021). The statement aligns with Kolb's theory on experiential learning, suggesting compatibility with the prevailing educational paradigms in the local context. Furthermore, a study conducted by Selim (2007) revealed a noteworthy association between students' personality features and their inclinations towards different learning styles.

Despite being limited, research on the correlation between personality traits and learning preferences in the UAE context and the broader Gulf region has yielded valuable insights. This was demonstrated by Afari's et al. (2012) study, which found a substantial correlation between personality traits and academic success among Emirati students. Conscientiousness, one of the BFPT, was explicitly discovered in this study to be positively correlated to students' academic achievement, demonstrating the educational significance of personality traits within the UAE environment.

Parallel to this, interest in learning style research has grown. In research on the preferred learning methods of medical students in Oman, Panambur et al. (2014) found that Auditory and Kinaesthetic learning styles were more popular. The findings align with KELT, which suggests that individuals tend to acquire knowledge via active inquiry and physical experiences. This hypothesis is particularly relevant to those who exhibit visual and kinaesthetic learning styles. This correlation implies that Kolb's model might potentially be relevant and suitable within the context of higher education institutions in the region, thus highlighting the necessity for pedagogical approaches that consider these individual learning preferences.

2.9.3 Considerations and Influence of Culture

Investigating personality traits and learning styles must take cultural effects into account, especially in a place like the UAE where native and expatriate populations interact (Hamdan, 2006). Personality development and learning preferences can be influenced by cultural norms, values, and educational practices (Hofstede, 1986). Culturally specific research, such as the one done by Song and Oh in 2011, have demonstrated the enormous impact that cultural background has on preferred learning styles, highlighting the need of culturally sensitive instructional strategies. Based on the findings of this study, it can be observed that students from collectivist cultures, such as Arab countries, exhibit a preference for cooperative learning environments that facilitate collaborative assignments and the exchange of knowledge. Individualist cultures tend to exhibit a preference for competitive or solitary learning environments among its students. This finding highlights the need of employing culturally sensitive pedagogical approaches that align with the prevailing cultural norms and values in the UAE.

Cultural factors can also influence personality traits to a great extent. For instance, a study by McCrae (2001) found that the BFPT exist in all countries but also found that the expression and prevalence of the traits vary, highlighting the cultural intricacy in personality studies. The region's cultural dynamics, the diverse backgrounds of students, and the blending of Eastern and Western educational paradigms must all be taken into consideration while doing research on personality traits and learning styles in the UAE's higher education setting. This will facilitate a comprehensive understanding of the setting, potentially enhancing the educational effectiveness of the region. Likewise, personality traits can be influenced by cultural circumstances. McCrae's (2001) study provided empirical evidence supporting the broad application of the BFPT across many cultural contexts. However, the study also

highlighted significant variations in the manifestation and prevalence of these attributes in other nations. Specifically, it was shown that extraversion and openness to experience; two personality traits, were more widespread in Western countries, whilst traits like agreeableness were more prominent in Eastern societies.

Overall, it is important to be aware of the cultural dynamics that define this particular setting while doing research on personality traits and learning preferences within the background of higher education in the UAE. A culturally sensitive approach is required due to the varied student body and the merging of Eastern and Western educational philosophies. This idea will guarantee a more thorough and contextual comprehension of the rapport amongst personality characteristics and learning preferences, leading to improved educational efficacy in the area (Hamdan, 2006).

2.10 Theoretical Foundations

This section serves as a foundation for the comprehensive examination of personality traits and learning theories that are crucial to understanding individual differences in educational settings. Moreover, this section lays down the groundwork for the detailed analyses that follow, focusing on the research's main area of investigation of the BFPT and KELT. It provides a thorough understanding of the key principles as well as the empirical evidence supporting these theories. This section explores how these personality traits, Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism, serve as a framework for categorizing human personality. It highlights the model's relevance in prediction its application in educational psychology. Similarly, examining KELT highlights its significance in framing how individuals learn from experiences. The discussion also covers the four stages of the learning cycle proposed by Kolb's learning modes, CE, RO, AB, and AE, as well as Kolb's learning styles (Accommodating, Diverging, Assimilating, and

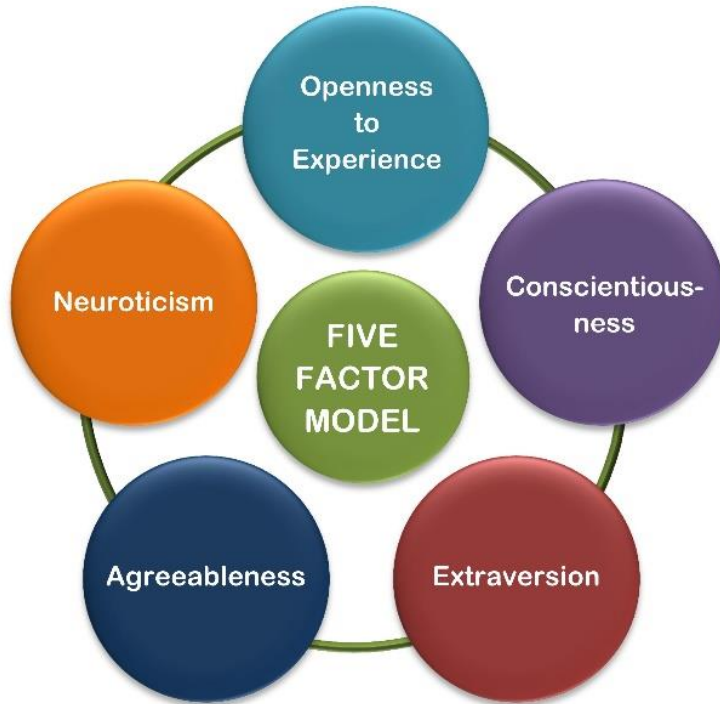
Converging) which emphasizes the theory's implications for designing and implementing effective educational strategies.

2.10.1 Detailed Exploration of the Big Five Personality Traits (BFPT)

The BFPT, also known as the FFM, which was created by Costa and McCrae in 1992, is one of the most widely used and trustworthy personality models in the world today (Figure 1). Openness, conscientiousness, agreeableness, extraversion, and neuroticism are its five distinguishing personality traits, famously known for its acronym OCEAN (Harris & Lee, 2004). Individuals who exhibit openness encompass traits such as creativity, diversity of interests, novelty seeking, and openness to new experiences. Those that exhibit conscientiousness are reliable, well-organized, and hardworking. Those that exhibit compassion, friendliness, kindness, and cooperation are considered agreeable. People that are extraverts are gregarious, lively, and receive their energy from interacting with others. Those who exhibit emotional instability, mood swings, and general tenseness are considered neurotic. Poropat (2009) investigated the role of personality factors on students' individual learning styles while researching the BFPT and its effects on students' learning outcomes. Miller (1991) emphasizes how crucial it is for educators to take into account students' distinct learning styles and personality types while creating lesson plans. Doing this can promote more learner engagement and produce fruitful learning outcomes. For example, teachers might enhance extroverted students' learning experiences by involving them in practical activities and workshops. Students would therefore perform better academically, which eventually results in effective academic attainment, and they would also score higher on exams.

Each of the five elements in the BFPT model is a middle ground between two extremes. For instance, the concept of openness spans a range ranging from curiosity and a

preference for novelty and diversity at one extreme to a preference for regularity and familiarity at the other. The level of organization, responsibility, and dependability a person demonstrates is known as conscientiousness. Extraversion may be conceptualised as a spectrum of behaviours that spans from outgoing and lively conduct to introverted and quiet behaviour. According to John et al. (2008), agreeableness is characterized by traits like trust, altruism, friendliness, and affection, whereas neuroticism is characterized by emotional instability, anxiety, moodiness, irritability, and melancholy. Overall, the BFPT model serves as a comprehensive framework for understanding individual differences in personality. One of its strengths lies in its wide applicability and validation across various cultures, making it a reliable tool for assessing personality in diverse populations, including higher education students in Dubai, UAE. However, a limitation of this model is its broad categories, which may overlook deeper aspects of personality that are influenced by cultural and environmental factors specific to the UAE. To address this, this research incorporates qualitative data from student interviews, allowing the study to explore the depths of personality traits and their unique manifestations.

Figure 2*Five Factor Model*

Note. From "Exploring the role of personality in the processes and pathways of learning and achievement," by D. Mcilroy and S. Palmer-Conn, 2019 (<https://ntf-association.com/exploring-the-role-of-personality-in-the-processes-and-pathways-of-learning-and-achievement/>).

The BFPT, often referred to as the FFM, is a prevailing and largely accepted framework in the field of personality psychology. The origin of the FFM may be traced back to the lexical hypothesis, which proposed by Goldberg (1981), suggests that the greatest significant dimensions of human personality are embedded within the language individuals employ in their everyday interactions. The theory proposes that via the analysis of language, it is possible to distinguish fundamental psychological traits that serve as the foundation for human behaviour. Significantly, the FFM theorises that the personality dimensions it

encompasses are characterized by continuity rather than categorization, since people exhibit varied degrees rather than distinct types. Extraversion and introversion are commonly conceptualized as contrasting poles along a continuum, rather than discrete and mutually exclusive traits.

The first dimension among the BFPT model is Openness to Experience, which is distinguished by traits such as a vivid imagination, a heightened appreciation for aesthetics, introspective awareness, a penchant for diversity, and a strong intellectual curiosity. Individuals that exhibit high levels of Openness are often characterized by their inclination towards creativity, appreciation for art and beauty, enjoyment of fresh experiences, and possession of a diverse array of interests. According to McCrae & Greenberg (2014), individuals of this kind tend to have a natural inclination towards curiosity regarding the world around them, along with a strong enthusiasm for exploring novel ideas and diverse views.

The second characteristic, Conscientiousness, encompasses attributes such as organizational skills, responsibility, and reliability. Conscientious persons are commonly characterized by their reliability and punctuality, adherence to norms and ethical principles, preference for planned rather than spontaneous actions, and their rigorous pursuit of personal objectives. Many studies have continuously established a positive relationship between Conscientiousness and achievements in academic and vocational domains, hence emphasizing its practical importance (Barrick & Mount, 1991; Rodrigues et al., 2023; Tedesqui et al., 2023).

Extraversion, as the third component, encompasses an individual's level of sociability, assertiveness, and positive orientation in social contexts. Extraverts are commonly identified by their inclination towards sociability, verbosity, assertiveness, and their ability to gain energy from social interactions. Frequently, individuals tend to demonstrate a tendency for

seeking excitement and maintain an optimistic perspective on life. In contrast, people with low scores on the extraversion trait, sometimes referred to as introverts, exhibit a tendency towards being more reserved, quieter, and displaying a greater degree of comfort in isolation (John et al., 2008).

The fourth characteristic, Agreeableness, encompasses qualities such as trustworthiness, generosity, benevolence, and warmth. Individuals that possess a high degree of agreeableness tend to exhibit cooperative behaviour, demonstrate compassion, and place importance on maintaining harmonious relationships with others. It is probable that they will be seen as amicable, magnanimous, and thoughtful. Conversely, people who exhibit low ranges of Agreeableness might be perceived as displaying suspicious, aggressive, or competitive behaviours (Graziano & Eisenberg, 1997).

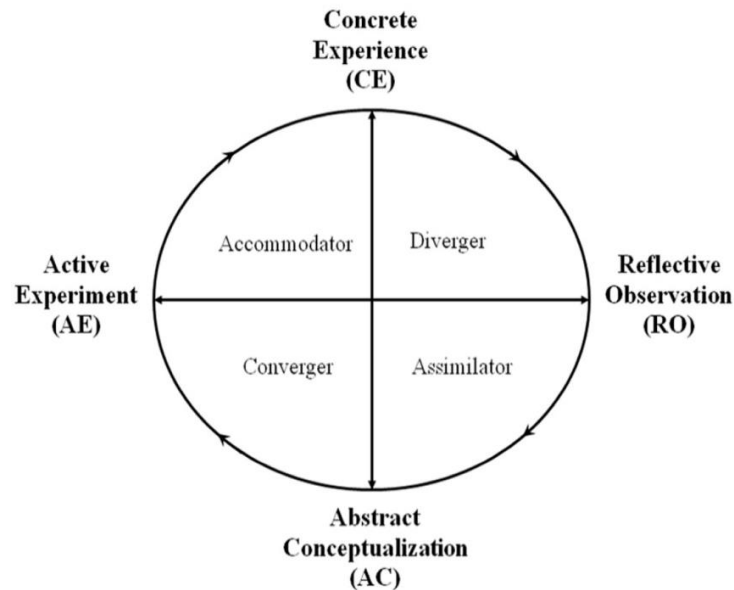
The final dimension, Neuroticism, signifies the inclination to undergo adverse emotions such as rage, worry, or melancholy. Individuals that exhibit elevated levels of Neuroticism may demonstrate a heightened susceptibility to adverse reactions in the face of stresses, a tendency to see commonplace circumstances as menacing, or a propensity for experiencing frequent fluctuations in mood. Alternatively, those with lower scores of Neuroticism tend to exhibit emotional stability and are less prone to experiencing anxiety or agitation when faced with difficult circumstances (Lahey, 2009).

2.10.2 Detailed Exploration of Kolb's Experiential Learning Theory (KELT)

KELT is a well-recognized and prominent theory within the realm of learning and education. Kolb's theory is founded on the fundamental notion that specifies learning as a dynamic process that necessitates the active participation of learners in their surrounding environments (Kolb, 1984). Additionally, Kolb's theory challenges the conventional

understanding of learning as a passive process of receiving knowledge, suggesting instead that learning encompasses cyclical processes of engaging with experiences, reflecting upon them, engaging in critical thinking, and taking action.

Developed in 1974, Kolb's Experiential Learning Cycle (KELC), a fundamental component of KELT, is a four-stage model that examines learning as a unified process. These four distinct stages, also referred to as learning modes are: CE, RO, AC, and AE. All four stages are equally supportive since Kolb believes that competent learning is a circular process that includes experiencing, reflecting, thinking, and acting. Moreover, Kolb and Kolb (2005) assert that in order for learning to be effective, learners need to actively participate in each step, resulting in a cohesive cycle that facilitates ongoing learning. This model entails two ways of acquiring knowledge; AC and CE. The other two types, which include AE and RO, assist learners to convert their experience into knowledge. It is also important to note that every single stage is used as a basis for the upcoming stage, thus aligning with Kolb's view that learning is a circular process. Overall, KELC emphasizes how learners are constantly changing and adapting because of conceptualization, experience, experimentation, and reflection. Moreover, the cycle describes how learning occurs when learners face an experience and reflect on that experience. This prompts to an analysis and preparation of theoretical concepts; subsequently, learners can then proceed to test and experiment their hypotheses in different situations. Figure 2 below illustrates KELC.

Figure 3*Kolb's Experiential Learning Cycle*

Note. From Li and Armstrong (2015)

2.10.2.1 Kolb's Learning Modes. This section explains the four variables in KELC, which are: CE, RO, AC, and AE.

- a) **Concrete Experience (CE).** KELC is usually illustrated with CE at the pinnacle in order to indicate that the process begins from there. During this stage, learners face or confront a particular experience. This experience can be completely new or one that had already occurred (Kolb, 1999). Kolb considered the crux of learning lies within involvement and participation. He argued that it is not sufficient for learners to simply read or observe demonstrations to gain new knowledge, but rather, they should actively immerse themselves in an experience. This can, for instance, include being exposed to a new task or a novel method of executing a project which they are previously familiar with (Kolb & Fry, 1974). While the experience is often personal, it can also be a joint experience where learners can gain

knowledge by reading, listening or even observing another person's experience. This type of learning, which is referred to as social learning, comes with numerous benefits. Drawing upon the psychological framework of Albert Bandura in the 1970s, SLT is rooted within human nature. Bandura et al. (1961) claims that learning is maximized when it occurs in an environment that involves the presence of other people and argues that humans learn best when they observe others, which they then model and reap the benefits of the so-called 'shared knowledge' ideology.

b) *Reflective Observation (RO)*. RO succeeds CE. When learners engage and participate in an experience, learners need to take a step back and reflect on the task they had performed. This stage in the learning cycle enables learners to ask questions and share their experiences with other people. For most people, however, this stage is where observing and participating converts into immediate absorption of new information (Kolb & Fry, 1974). In real life, this can involve a situation where a learner is shown how to attain a particular goal and then see how this can be applied in various other situations. In any case, communication is key as it permits learners to recognize any inconsistencies between their comprehension levels and the experience itself. Moreover, talking about their experiences with other people helps them ease the reflection process by examining other perspectives. Additionally, during this stage, learners will make an effort to place the experience together with other preceding experiences in order to search for patterns or any significant differences (Kolb & Fry, 1974). This helps learners reflect on the inconsistencies and any gaps between their comprehension levels and the experience itself.

c) *Abstract Conceptualization (AC)*. AC comes right after RO. During this stage, learners construct new ideas or modify their existing understanding based on the reflections that resulted from the preceding stage. Learners travel from RO to AC once they start to categorize concepts and develop conclusions on the events that happened (Kolb & Fry, 1974). As a result, AC provides learners the opportunity to evaluate how their new ideas can be executed in practice. They can do this by interpreting the experience and creating comparisons to their existing understanding of the concept. Once learners go back to a task they have previously done, they can go back with the aim of executing their deductions to new experiences (Kolb & Fry, 1974). To put it another way, learners can produce abstract theories that they can execute to future situations. The focus here, after all, lies primarily in conclusion formulation and lessons learnt based on the experience. Thus, this signifies that information is easier to retain if it is pertinent to people's lives and if they are given a chance to apply and execute it.

d) *Active Experimentation (AE)*. The final stage of the ELC entails AE. During this stage, learners execute their novel ideas to the world and to those around them. This enables them to check if there are any modifications in the upcoming occurrence of the experience (Kolb & Fry, 1974). As a result, this stage provides learners with the opportunity to test out and experiment their new ideas and the lessons they learnt from the experience. By experimenting actively with various concepts, people can learn how to relate what they have experienced with novel ideas. This kind of experimentation leads to new concrete experiences that effectually activate the start of the next cycle. Ultimately, a person's life sums up to a series of intricate yet intertwined experiences.

2.10.2.2 Making the Most of the Cycle. While CE lies at the pinnacle of the ELC, learners can join any stage and follow through its logical order. However, one stage greatly depends on the other, and a learner cannot move from one stage before the completion of all four stages to be able to develop new learning. Consequently, learners need to fully complete the cycle in order to guarantee that effectual knowledge transferal takes place. Kolb (1999) stresses that not a single stage holds merit on its own, and to maximize the learning process and develop new knowledge, all four stages need to be completed. And, in this process, each new experience makes the learner integrate new observations into existing comprehension levels.

According to Kolb (1999), a person's preferences carry out a significant role in deciding the best mode of experiential learning. This is because people have a preferred method of learning, which comes from their past life experiences and the environment that they are surrounded with. As a result, Kolb stated that people who prefer RO are considered 'watchers', while those who prefer AE are considered 'doers'. Kolb then expanded his EL based on these differences. Today, these preferences serve as the groundwork for KLS.

2.10.2.3 Kolb's Learning Styles. In 1984, Kolb expanded his learning cycle by introducing a model regarding the different styles of learning. Merging the two models together, KELT was brought to life, a revolutionary theory that explores the inner cognitive and thought processes of learners. Although Kolb's four stages of learning operate together to produce a learning process, some people prefer particular styles over others. Learners can heavily rely on reflective and concrete experiences but still choose to spend less time on active and abstract stages (Kolb, 1984). Due to this, Kolb classified four unique styles of learning that are based on ELC's four stages. Kolb states that a person's preferred style of learning is the result of two pairs of variables, which he claims can be viewed as two independent choices that people make. Kolb demonstrates every stage of the learning cycle by these two

overlapping axes, which can be seen in Figure 2 above. Each of these distinctive learning styles entails placing a focus on two phases of the learning styles, which are often easier understood when they are organized in a table, like in Figure 3 below.

Figure 4

Experiential Learning Cycle and Experiential Learning Style

ACCOMMODATOR <i>Active Experimentation and Concrete Experience (AE & CE)</i> - Can carry out plans - Interested in action and results - Adapts to immediate circumstances - Trial and error approach - Sets objectives and schedules - Likes a practical, experiential approach	DIVERGER <i>Concrete Experience and Reflective Observation (CE & RO)</i> - Imaginative and good at generating ideas - Can view situations from many angles - Open to experience - Recognizes problems - Investigates - Senses opportunities - Prefers to watch than act, and uses imagination to solve problems
CONVERGER <i>Abstract Conceptualization and Active Experimentation (AC & AE)</i> - Good at practical applications - Makes decisions - Focuses effort - Evaluates plans - Selects from alternatives - Solves problems - Prefers technical tasks	ASSIMILATOR <i>Reflective Observation and Abstract Conceptualization (RO & AC)</i> - Able to theorize - Compares alternatives - Defines problems - Establishes criteria - Formulates hypotheses - Takes a concise logical approach - Prefers a good explanation to a hands on experience

Note. From Healey et al., (2004).

One notable characteristic of the ELT is its ability to distinguish four distinct learning styles, which align with particular phases of the ELC. The classification of styles, namely Diverging, Assimilating, Converging, and Accommodating, is contingent upon an individual's inclination towards the learning modes discussed in the previous section, which are CE, AC, RO or AE (Kolb, 1984).

- a) Diverging.** Kolb refers to this type of learning style as diverging since these individuals tend to perform better in situations requiring them to generate and explain a

wide range of concepts and theories. They also tend to view things from different perspectives. Furthermore, they usually have a wide range of cultural interests, enjoy learning new information and use their imaginative skills to solve problems (Kolb, 1984). Individuals with a diverging learning style achieve better results in courses related to humanities, social sciences, and liberal arts. They also tend to prefer group projects over individual ones since group projects allow them to receive feedback and listen to others. These types of learners therefore prefer feeling and observing over taking action first, and individuals who possess a Diverging learning style tend to have an inclination for engaging in CE and engaging in RO. According to Kolb and Kolb (2005), individuals demonstrate exceptional proficiency in the process of brainstorming and exhibit a propensity for considering issues from several angles. Moreover, they possess a remarkable capacity for inventive thinking and display heightened emotional sensitivity.

- b) Assimilating.** The Assimilating learning style might be viewed as individuals who apply the "think and watch" approach, as such learners tend to gravitate towards RO and AC. Since individuals with this learning style consider ideas and concepts to be more important to their learning than other learners, they adopt a concise and logical approach to learning. Instead of practical opportunities of learning, they gravitate towards requiring clear explanations. Moreover, individuals with the Assimilating learning style perform better in understanding a wide range of information and systemizing it logically, and rely on reasoning and exploring analytical models. Therefore, these individuals prefer proven and scientific theories and are found to excel in careers such as the Sciences and Mathematics.

- c) Converging.** The Converging learning style demonstrates a type for learners who tend to gravitate towards solutions relevant to their problems. This is closely associated with AE and AC, which has been labelled as the "think and do" approach (Kolb, 1984). Individuals with this kind of learning are excellent problem solvers who apply what they have learned to suggest fixes for real-world concerns and problems. Their preferences of tasks are more towards tasks that are technical in nature, and they are usually not interested in social-oriented activities. They prefer to experiment with new concepts and work on real-world problems. One of their strengths is their ability to apply concepts and abstract theories to actual problems and situations. Additionally, convergent learners show a preference for problem-solving exercises, computer-based simulations, and structured worksheets. Furthermore, convergent learners like problem-solving exercises, computer-based activities, and worksheets as teaching modalities. According to Kolb and Kolb (2005), individuals frequently exhibit a preference for technical jobs while displaying a lesser inclination towards interpersonal components.
- d) Accommodating.** The Accommodating learning style is best described as individuals who prefer a "hands-on" experience, where they can rely on their intuition rather than logic. This kind of learning style is a mix of CE and AE. Such individuals prefer learning strategies that help them in applying a more experiential and practical approach of critical thinking and independent learning (Kolb, 1984). Rather than following logic, these individuals use the trial-and-error route instead of the logical reasoning route. Individuals with the accommodating learning style take the initiative, make plans, and actively pursue, even if it means relying more on intuition than on logic. Furthermore, as these individuals are constantly in the pursuit of challenges and

new experiences, they have excellent people skills and are able to modify their methods under given circumstances. Such learners excel in fields such as Business, Sales, and Marketing. According to Kolb et al. (1999), such learners often depend on intuition as opposed to logical analysis, acquire knowledge largely via experiential learning, and have a high level of adaptability in unfamiliar and uncertain circumstances.

2.10.3 Relationship Between the Big Five Personality Traits and Kolb's Learning Approaches

Prior to exploring the connection between the BFPT and KLS, it is essential to address the impact of these personality traits on Kolb's learning modes. Kolb defines four modes of learning within his ELT: CE and AC, which involve the intake of information, and RO and AE, which pertain to processing that information.

People with high Openness tend to be more creative and like new experiences, which is consistent with Kolb's AC mode. According to McCrae and Costa (1997), these people are probably going to be excellent at learning new theories and conceptual thinking. Since openness entails being willing to try new things, it might also improve performance in the CE mode. However, those with high Conscientiousness levels may favour the AC learning style, which calls for methodical preparation and logical thought (Judge et al., 2002). These people probably like well-structured classrooms and meticulously prepared materials.

Those that are extroverted are usually gregarious and highly motivated. According to Furnham (1992), this trait is correlated with a preference for AE, in which students actively interact with the outside world in order to experiment and gain experience. Additionally beneficial to extraverts' engagement with the CE mode are learning environments that entail group projects and discussions. Conversely, individuals who score highly on Agreeableness

are usually cooperative and place a high importance on getting along with others. They might favour learning methods like RO, which allows them to examine various viewpoints and pick up knowledge from watching others (Digman, 1990). This quality fosters interaction and constructive criticism in a cooperative learning environment.

Lastly, those with high Neuroticism may struggle with anxiety and emotional instability, which may affect how they prefer to learn. Learners with high Neuroticism may prefer the structured learning environments provided by the AC mode, which can give them a sense of control and predictability, even though there is less of a direct correlation between Neuroticism and specific Kolb's modes (Costa & McCrae, 1987).

Understanding Kolb's learning modes and the more complex relationship between these traits and KLS begins with an understanding of how the BFPT impact these learning modes. Since these connections between Kolb's learning modes and the BFPT can help educators and learners better tailor educational experiences to suit individual learning preferences, it provides a clear background that helps in understanding why students might prefer one style over another. This could potentially improve both the efficiency and enjoyment of the learning process.

Empirical studies have shown the relationship that exists between different personality traits and specific styles of learning. Zhang and Sternberg (2005) conducted a thorough research which demonstrated that those with higher scores in Openness to Experience and Extraversion preferred learning methods characterized by divergence and accommodation. The Divergent learning style, which exhibits a preference for tangible encounters and thoughtful observation, corresponds with the inclination towards openness and inquisitiveness that is present in the personality attribute of Openness.

Likewise, the accommodating approach, characterized by a preference for tangible encounters and dynamic experimentation, aligns with the extroverted individuals' sociable and lively disposition. In contrast, people are more likely to adopt a converging and integrating approach when they display high levels of conscientiousness. The convergent style of learning is characterized by the utilization of AC and AE, which is in accordance with the diligent, organized, and pragmatic attributes commonly associated with conscientious people. The assimilating approach, which is distinguished by abstract thinking and deliberate observation, aligns well with the concentrated, deliberative, and detail-oriented inclinations frequently observed in those with high levels of conscientiousness.

Furnham (1992) conducted independent research to study the relationship between the BFPTs and students' learning styles. The study uncovered clear evidence of a relationship between the divergent learning style and neuroticism. These findings suggest that individuals with high levels of neuroticism, often associated with traits like anxiety, worry, and emotional instability, may tend to exhibit a divergent learning style. Since the divergent style of learning places emphasis on tangible experience and introspective observation, this method to learning may be particularly suitable for people who demonstrate high levels of neuroticism, since it tends to be more comfortable and less anxiety-inducing for them.

Even though these studies offer significant insights, they also point out the challenging link that comes about with personality traits and learning styles. Accordingly, personality and styles of learning relate in such a way that it demands the traits and styles to be analysed, not just independently of each other but also as parts of a highly complex, interrelated system that affects learning behaviours and outcomes. Research suggests that there exist links between specific personality traits and individuals' learning preferences. For instance, dependable and organized people with high levels of conscientiousness may choose structured learning

environments and strongly favour the read-and-write learning style (Komarraju et al., 2009). In collaborative learning settings where the auditory learning style can be used, extraverts, who are frequently social and assertive, may do particularly well (Zhang, 2003). According to KELT, openness to experience, which is characterized by intellectual curiosity and a liking for novelty, may correlate with a propensity for AC and RO (Zhang, 2003). While the relationship between personality and learning is intricate and influenced by several factors, studies have acknowledged overlaps between the BFPT traits and KLS. According to Von Stumm et al. (2011), these factors include each student's goals, the learning environment, and the type of activities or materials being taught.

Gaps in the Literature

There are numerous studies that explore how personality traits are linked to learning styles. However, most of the existing research mainly focuses on Western perspectives, which might not fully capture the variances seen in different cultural frameworks. This regional concentration limits the applicability of findings across different cultural settings, especially in non-Western contexts. A notable example is the Middle East, particularly the UAE, where cultural differences significantly impact personality development and learning style adoption. Research in these regions would not only fill a significant gap but also provide insights that are culturally specific, thereby enhancing the applicability and relevance of learning style theories globally (Hofstede, 2001).

Furthermore, the dynamic nature of how personality traits and learning styles evolve over time remains underexplored. Most existing studies utilize a cross-sectional design, which provides only a snapshot of the relationships at a specific point in time. However, personality and learning preferences are not static; they develop and change as individuals grow and encounter different life experiences. Longitudinal research is thus essential as it allows for the observation and assessment of the same individuals over extended periods, offering valuable

data on potential developmental changes across various life stages. This approach can significantly enhance the understanding of the stability and fluidity of learning styles and personality traits (Coffield et al., 2004).

Additionally, there remains a need for a more specific, in-depth, and refined understanding of the relationships between personality traits and learning styles. Most studies have not thoroughly examined how moderating and mediating variables such as gender, age, socioeconomic level, and educational background could influence these relationships. For instance, socio-economic status may affect access to educational resources, thereby influencing preferred learning styles. Similarly, age-related cognitive changes could shift an individual's preferred method of learning, reflecting more on experiential rather than theoretical learning approaches. Investigating these factors could uncover deeper insights into how personality and learning styles interconnect within varied demographic contexts (Zhang, 2013).

2.11 Role of Gender & Academic Fields in Personality Traits & Learning Styles

This section explores the ways gender and certain academic disciplines intersect with and influence individual personality traits and learning preferences. This comprehensive examination seeks to uncover gender-specific trends in personality traits and learning styles, highlighting how these differences manifest and potentially impact educational experiences and outcomes. Additionally, it explores how variations in personality and learning preferences can be attributed to the academic fields themselves, suggesting that the nature of a discipline, whether it lies in STEM, humanities, social sciences, or others, may align with or attract certain personality types and learning approaches. The section further investigates the intricate gender dynamics within various academic fields, considering how these interactions influence the educational landscape, peer relations, and individual academic pursuits. Through this

analysis, readers will gain insight into the complex interplay of gender and academic specialization in shaping the educational journey, providing a basis for more tailored and inclusive teaching strategies.

2.11.1 Gender Differences in Personality Traits

The study of gender differences in personality traits has emerged as a significant focus of research within the field of psychology. It has been widely stated that such apparent differences are subject to a very complex interplay between Biology and psychological and socio-cultural factors. Based on a thorough cross-cultural research done by McCrae (2002) and Schmitt et al. (2008), it was shown that women often exhibit higher scores in the domains of neuroticism, agreeableness, warmth (an aspect of extraversion), and openness to feelings. Emotional instability characterized by anxiety, moodiness, and emotional volatility is the nature of neuroticism. The observed phenomenon of women obtaining higher scores in this particular feature might perhaps be attributed to cultural norms or social expectations that afford women greater freedom in the expression of their emotions compared to males.

Research points toward women tending to show higher scores in agreeableness and warmth; that is, being more compassionate, more cooperative, and placing a higher value on interpersonal bonds than men. This might be the reason why social norms position women's engagement in activities that are meant for nurture and care. In other words, women are a little bit more willing to feel than men, one aspect of the broader personality trait of openness to experience. This finding means women have higher levels of emotional intelligence compared to men, and they are more emotionally responsive and empathetic. On the other hand, men had a tendency for assertiveness and receptiveness to new ideas (Schmitt, 2015). This inclination may stem from socio-cultural expectations regarding the traditional gender roles that tend to

emphasize the characteristics of men and women. The fact that men do tend to score higher on measures of openness to ideas would seem to indicate that they might be more disposed to want to explore and engage in activities that would be more intellectual. It is noteworthy to acknowledge that there exists a distinction among openness to ideas and openness to feelings. This suggests that women may be more inclined to embrace their own emotional experiences, while men may have a greater tendency to focus on intellectual pursuits outside of themselves.

There is vast evidence across cultures that document gender differences in personality traits such as academic competence. Personality traits are known to influence many aspects of a person's life such as in academic and workplace settings. For instance, individuals who possess high levels of agreeableness and warmth may find occupations that necessitate significant cooperation, empathy, and emotional intelligence more appealing. It would, therefore, be expected that highly assertive and intellectually driven individuals may find other alternatives more to their liking along the line of occupation that fulfils some specific need of them. However, it is to be noted that these are some of the statistical trends in findings and not fixed differences. Personality variables exhibit a continuous distribution, with substantial overlap observed between individuals of different genders. Furthermore, it is noteworthy that cultural norms and social expectations may be just one factor in shaping gender variations in personality characteristics, and as attitudes towards gender roles continue to shift, these differences have the potential to change (Schmitt, 2015).

2.11.2 Gender Differences in Learning Styles

Gender differences involve not just personality traits but also extend to learning styles. The concept of learning styles, as outlined by KELT, encompasses the unique approaches that individuals employ to interact with, comprehend, and assimilate novel knowledge. Wehrwein

et al. (2007) conducted a comprehensive meta-analysis that examined the variations in learning styles based on gender, as outlined by Kolb's model. The female participants in the study showed a preference, according to introspective observation leaning towards the converging and assimilating learning styles. In general, convergent style is perceived in the light of problem solving and decision-making because it involves active exploration, coupled with AC. This points to the predisposition of theoretical frameworks and abstract concepts to have problems addressed, not dependent on individual experiential knowledge.

In contrast, the absorbing style of learning combines AC with RO, indicating a tendency towards employing straightforward and logical methods for information processing. Assimilative learners have exceptional proficiency in comprehending a diverse array of knowledge and effectively structuring it in coherent and rational frameworks. They are very good at understanding and organizing into meaningful, logical frameworks of the most varied and diverse kinds of knowledge. The findings suggest that women might find more appealing, on average, learning environments that permit reflective observation of practical problems and focus on theories, together with logical, theory-driven methods of knowing. Some may even demonstrate exceptionally high talent in professions that require the integration of knowledge and judgment based on logical thinking.

On the other hand, it was seen that males preferred the divergent and accommodating styles, indicating a greater inclination towards engaging in active experimentation. The divergent style of learning incorporates the use of tangible experiences, indicating an inclination towards actively engaging in activities to acquire knowledge. This style is frequently linked to the capacity for imagination and the ability to consider actual events from several viewpoints.

On the other hand, the accommodating approach observes CE with AE. Generally, learners with this learning orientation normally rely more on their intuition than their reasoning. In addition, they show a strong tendency toward embracing new experiences. People, whose preference of the mode of learning have a strong tendency of learning through the theoretical, practical experiences, and they will always prefer a style of learning that is focused on practical, experiential methods. The implication of the study thus suggested the possibility that there was a higher tendency for males to be attracted to learning environments with AE, which may lead to their success in tasks with practical applications and experiential learning. These studies point out an important influence related to gender with respect to students' interaction, cognitive processing, and information integration in educational environments. It is vital for educators to comprehend these distinctions, since doing so may facilitate the customization of educational methodologies to suit a wide array of learning preferences, thus creating a more effective and inclusive learning environment (Wehrwein et al., 2007).

However, as with gender differences in personality, care needs to be taken in noting that such findings indeed refer to mean values and not absolute characteristics. There exists a notable degree of convergence in the learning styles exhibited by both males and females. Moreover, it is worth noting that the extent of individual variations within each gender might surpass the average differences observed between genders. Additionally, it is important to acknowledge that learning styles can be influenced by cultural and socio-economic variables (Hall, 2013).

2.11.3 Academic Field Variations in Personality Traits

The research on the relationship between personality traits and academic achievement points to very interesting findings. The central argument suggests that distinct academic disciplines tend to encourage and attract various personality qualities, which subsequently impact students' decisions and achievements in their academic pursuits. A larger investigation that was centred on examining the personality traits among students in different academic areas, respectively, was carried out by Lievens et al. (2003), and the very remarkable trend was established: students who major in arts, humanities and social sciences tend to lean more towards openness. This seems to go hand in hand with the intrinsic nature of these fields, where students are required to learn new and complex ideas and theories and are forced to be innovative and creative in problem-solving; requirements that seem to go in line with the personality trait of openness. Moreover, these characteristics are congruent with the personality trait of openness, which is distinguished by a dynamic imagination, inclination towards diversity, and intellectual inquisitiveness, all of which are fundamental to disciplines such as the arts, humanities, and social sciences (Christensen, 2020; McCrae & Costa, 1987).

In contrast, it was observed that students pursuing Business and legal disciplines exhibited elevated levels of extraversion and agreeableness. These kinds of disciplines often involve working in groups on different projects, making professional network connections, and presentations in public. Such disciplines often attract students with the characteristics of being gregarious, assertive, and energetic. According to John and Srivastava (1999), these qualities are commonly connected with extraversion. In addition, the collaborative aspect of these disciplines may have a special appeal for those who exhibit high levels of agreeableness, a personality characteristic characterized by attributes such as trust, generosity, friendliness, love, and other behaviours that promote the well-being of others (Graziano & Tobin, 2009).

It is furthermore important to note that the reported outcomes of the research agree with the results of the previous research of Chamorro-Premuzic and Furnham (2003) in relation to fields such as the Arts and Humanities being related to openness to experience. In addition, their research established an association between the choice of business courses and extraversion. Above this, the findings from the above-discussed studies seem to indicate the possible influence of personality traits on the preferences of academic discipline. A deeper understanding of the relationship can bring change to educational counselling and might lead students to more enlightened choices in their academic and career paths.

However, it is important to note that these relationships do not suggest certainty. Although certain personality traits may be prevalent in particular professions, students of all personality types have the ability to thrive in any academic discipline. Moreover, it is critical to take into account the likelihood of a bidirectional association, where not only can personality qualities have an influence on the preference of an academic discipline, but also the academic discipline itself could have long-term effects on how a student's personality develops (Helson et al., 2002).

2.11.4 Academic Field Variations in Learning Styles

The alignment of academic disciplines and their respective methodology can closely correspond to various learning styles, thus mirroring the essential features of the subject matter and the teaching methods commonly used in each discipline. The study by Franzoni et al. (2008) explored how learning styles relate to academic subjects. For example, engineering students tend to prefer visual and sequential learning. Visual learning involves understanding information through graphics or images, which is useful in engineering because it often requires interpreting diagrams and schematics. Sequential learning means learning step by

step, which matches well with the systematic approach in engineering. On the other hand, social science students showed a preference for verbal and global learning. Verbal learning focuses on words, either written or spoken, which suits social sciences because these fields involve a lot of reading and discussion. Global learning means understanding the big picture before focusing on details. This approach is effective in social sciences, where students often study complex societal systems and structures. This implies that teaching methods and educational materials can be more effective if they are tailored to match the preferred learning styles of students in different academic disciplines.

The result of such a study is, therefore, highly important for educators. The proposal goes such that, thus, teaching approaches could be much more fruitful in particular if they would be adapted to fit those learning methods that are more frequent in a given course or discipline among students. Organized and visual approaches, among other verbal and comprehensive techniques used in social science teaching in engineering, are of help and value for increasing academic achievements. However, it is essential to take into account learning styles when formulating educational approaches. Nevertheless, it is equally important to refrain from categorizing students based on their academic fields. In a given academic discipline, students often demonstrate a range of learning styles, necessitating an adaptable strategy that can effectively accommodate this variation.

2.11.5 Gender Dynamics within Academic Fields

Gender dynamics and academic disciplines come together to present a clearer view of personal characteristics and ways of learning. This dynamic recognizes the relationship between the two aspects and highlights how their mutual influence might offer a more elaborate explanation for both phenomena. Shahzad et al. (2013) examined these dynamics by

studying potential gender differences in personality traits across various academic disciplines. The implications of this research are that gender differences in some fields might add to the increase of gender-related differences between personality. The research has proven that males learning in female-dominated academic disciplines, for example, nursing or teaching, reflect high levels of agreeableness, qualities generally associated with females.

Their results imply that gender may interplay with the academic environment in the development of personality traits by adaptive prevailing environments or the kind of career most likely to attract people with those traits. The interaction between gender dynamics and academic disciplines also encompasses learning methods. According to Taylor-Smith et al. (2023), female students who end taking up subjects that are largely directed at males, such as engineering or computer science, tend to modify their approach to learning. This may be attributed to the modes of learning that are mostly used by these fields, and they may be inclined more towards typical modes of learning for men. This might require female students to adapt their natural learning tendencies in a context such as this. These findings suggest the interaction of gender with academic discipline needs to be considered within the perspective of personality and learning styles. This statement refers to the comprehensive approach to the varied characteristics of students stemming from different disciplines, an interplay of biological, psychological, and social factors.

However, it is important to use caution when interpreting such research conclusions. The concepts of gender and academic discipline are useful to explain the tendencies of communities but lie outside the encompassing borders of a trait of an individual. Once again, the differences in diversity between both genders often exceeded the differences between the groups and serve as a reminder of the complexity and diversity of personality and cognitive development in humans.

2.11.6 Degree Type & Personality Traits

Research has shown that personality traits can evolve and adapt as students progress through different academic levels. Students at the Bachelor's level, often in the earlier stages of academic and personal development, might demonstrate a broad spectrum of personality traits, with varying degrees of openness, conscientiousness, and extraversion (Komarraju et al., 2011). As students advance to Master's and Ph.D. levels, however, studies indicate an increase in traits such as conscientiousness and openness to experience, which are associated with the demands of graduate and doctoral-level studies (McCrae & Costa, 2003).

Graduate students, particularly those in research-intensive fields, often develop higher levels of openness, as this trait is essential for engaging with complex theories, exploring novel ideas, and thinking creatively (Komarraju et al., 2011). At the Ph.D. level, the demands of independent research foster intrinsic motivation, intellectual curiosity, and resilience. Lovitts (2005) found that Ph.D. candidates exhibit a strong sense of perseverance, aligning with increased levels of conscientiousness and openness.

Understanding how personality traits correlate with degree types is valuable for educators, as it suggests that advanced academic environments may adopt particular personality developments. Tailoring academic support to align with these evolving traits could support students' growth more effectively as they progress through their studies.

2.11.7 Degree Type & Learning Styles

Learning preferences also shift as students move from undergraduate to graduate and doctoral studies. At the undergraduate level, students often favour learning styles that emphasize active experimentation and concrete experiences, reflecting Kolb's experiential learning theory (Kolb, 1984). Bachelor's students are frequently drawn to hands-on, practical

applications that allow them to immediately engage with material and observe tangible outcomes (Entwistle & Peterson, 2004).

As students progress to Master's level programs, they tend to adopt more reflective and abstract learning approaches. Graduate-level curricula often demand critical thinking, synthesis of complex concepts, and integration of theory and practice, encouraging a shift toward reflective observation and abstract conceptualization (Peterson et al., 2005).

At the Ph.D. level, learning preferences further evolve toward independent study and self-directed research, with a strong emphasis on abstract conceptualization and active experimentation. Doctoral students are typically required to generate new knowledge and apply theoretical frameworks innovatively, favouring self-guided learning styles that are essential for research (Lovitts, 2005). Recognizing these shifts in learning preferences across degree types helps educators design curricula and instructional strategies that align with students' evolving academic needs and cognitive capabilities.

2.12 Age-Related Factors in Personality & Learning

This section explores how age influences the development and expression of personality traits, as well as learning capabilities and preferences. This section lays the foundational understanding necessary to examine the intricacies of personality evolution throughout a person's life, the stability and mutability of personality characteristics, and the cognitive transformations associated with aging. It aims to explain the complex interplay between age-related changes and their impact on educational engagement and effectiveness. By examining the various stages of life, from childhood and adolescence through adulthood to later life, it highlights how developmental stages are linked with shifts in personality and cognitive function. Furthermore, it discusses strategies to improve learning outcomes across different age groups, emphasizing the importance of tailoring educational approaches to meet

the evolving needs of learners as they progress through different the different stages of life.

Through a comprehensive overview, this section sets the stage for an in-depth analysis of the lifelong journey of personality development and learning.

2.12.1 *Personality Development Across the Lifespan, Stability & Change in Personality Traits*

The manifestation of personality traits demonstrates stability and change throughout an individual's life, a topic widely studied in psychology. The cumulative continuity principle suggests that personality traits generally stabilize over time due to environmental stability and increased self-awareness (Caspi et al., 2005). For instance, studies show a typical decline in extraversion and neuroticism, with a corresponding increase in conscientiousness and agreeableness as people age (Roberts et al., 2006). Significant changes in personality are primarily observed during pivotal developmental stages such as adolescence and old age.

Costa and McCrae's longitudinal study (2006) indicates that most personality changes occur before the age of 30, after which traits tend to stabilize. However, later life events can still induce changes, supporting the concept of "personality plasticity" (Specht et al., 2011). This idea is encapsulated in the "personality paradox," which refers to the coexistence of stability and change in personality traits throughout one's life (Caspi & Roberts, 2001). Research also highlights that certain traits like conscientiousness and agreeableness may increase with age, reflecting higher levels of maturity and social responsibility, while extraversion and neuroticism typically decrease, likely due to reduced social engagement and increased emotional stability (Roberts et al., 2006). Overall, while some personality traits exhibit higher stability, significant transformations can occur, particularly during critical life transitions, illustrating the ongoing interaction between individual characteristics and environmental influences in personality development.

2.12.2 Influential Factors in Personality Development

An intricate relationship of numerous biological, psychological, and social factors plays a significant role in the complex process of personality development. According to twin and family studies, biological research has shown that genetics have a substantial impact on how personality traits develop. According to these studies, genetic variables may account for between 40 and 60 percent of the variation in personality traits (Polderman et al., 2015). For instance, heritability studies in the past have shown that traits like extraversion and neuroticism are significantly influenced by genetics (Plomin, 1999). Nevertheless, it is crucial to note that the variance in personality characteristics might be attributed to environmental factors. Socio-cultural aspects include the culture and environment where a person grows up, along with the social norms and expectations associated with it. The manifestation of personality characteristics can be influenced by cultural factors, since some qualities may be either appreciated or discouraged within particular cultural settings (McCrae et al., 1999).

In a similar manner, it is worth noting that social ties and interactions, including a wide spectrum from the dynamics between parents and children to peer relationships, hold considerable weight over the formation of an individual's personality. Empirical data reveals that loving and encouraging parenting is linked to the growth of higher levels of agreeableness and conscientiousness in people (Prinz et al., 2009). Conversely, it has been discovered that parenting that is tense or neglectful may result in children that are less pleasant and more neurotic. Life events, favourable and unfavourable, have the potential to affect the formation of the personality structure. According to Lodi-Smith and Roberts (2007), individuals may undergo changes in their personality characteristics because of various experiences, such as career transitions, marriage, parenting, or traumatic events. The way that people interpret and react to these events will determine how these transitions occur.

Emerging research indicates that personality development is significantly influenced by gene-environment interactions. The notion of "genetic sensitivity" states that specific genetic traits can make individuals more responsive to their surroundings, resulting in a heightened vulnerability to environmental factors compared to others (Prinzle et al. (2009). For instance, people with certain genotypes may be more susceptible to the impact of parenting quality on the emergence of personality traits. The relevant elements add up to the dynamic aspects in personality development, meaning that through genetic composition, a basic framework is laid down; however, people's experiences and surroundings continue to shape and develop their personality traits throughout their lives.

2.12.3 Cognitive Changes in Aging

As people age, they often experience significant cognitive changes that affect their ability to learn. Aging can lead to a decline in fluid intelligence, which includes skills like problem-solving, reasoning, and processing speed. Older adults may also see a decrease in their working memory, which involves holding and working with information briefly (Salthouse, 2004). However, not all mental abilities decline with age. Crystallized intelligence, which is the knowledge and skills gathered over a lifetime, usually remains stable or even improves. This means that older adults can use their extensive knowledge and life experiences to help them learn new things, enhancing their understanding of new material (Schaie, 2009).

It is worth noting that cognitive ageing appears to be linked to a transition towards increased use of independent learning strategies. The use of metacognitive methods, which encompass the deliberate regulation of learning processes, is frequently observed among older individuals. It is, therefore, designed to pursue organized and purposeful preparation, self-monitoring, and regulation of learning activities to their best effectiveness. For example,

individuals may employ elaborative rehearsal techniques, which include connecting newly acquired material with pre-existing knowledge, or engage in spaced practice, which is distributing learning sessions across time intervals to improve memory retention (Dunlosky & Metcalfe, 2008). In addition, existing research indicates that cognitive flexibility, which refers to the capacity to transition between tasks or cognitive operations, can be preserved or enhanced as individuals get older, particularly when they engage in cognitive activities (Buitenweg et al., 2012). This perception adds further proof of the potential change in cognitive and learning processes over life. Moreover, it is crucial to acknowledge that cognitive ageing exhibits substantial individual diversity, wherein certain individuals have notable decreases, while others maintain relative stability or even demonstrate improvements in certain cognitive domains. The degree of this variation is determined by a multitude of elements, encompassing heredity, health condition, lifestyle preferences, and environmental influences (Park & Reuter-Lorenz, 2009). Further exploration of the impact of age-related variables on personality and learning necessitates a more comprehensive examination of the developing cognitive capacities, socio-emotional development, and accumulated life experiences that occur as individuals progress through the ageing process.

From a cognitive perspective, aging has been found to bring large impacts on learning strategies and processes, mostly from the developmental changes that occur in the brain. In accordance with Piaget's theory of cognitive development (Piaget, 1954), as kids develop, they switch from thinking in concrete terms to thinking in more abstract terms. According to Bjorklund and Causey (2018), these modifications have the potential to modify the learning preferences and methods of individuals, leading to a greater inclination towards more intricate and self-directed modes of learning among older pupils. The change in learning methods described by KELT is also consistent with the transition in cognitive development that was

previously discussed. This idea argues that as people get older, they gradually transition from concrete experience to reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). Furthermore, it is crucial to acknowledge the significant effect of life events on the learning process. Vygotsky's sociocultural theory places significant emphasis on the impact of cultural and social interactions on the formation and advancement of learning processes (Vygotsky, 1978). With age comes experience, and sociocultural interaction that develop in one's life and aid in establishing the view of the world and learning perspectives. Consequently, they become increasingly adept at establishing connections between novel information and pre-existing knowledge, a phenomenon commonly referred to as schema theory (Anderson, 2018). Variables that are age-related play a major role in shaping the development of personality. According to Specht et al. (2011), longitudinal research has shown evidence that personality characteristics undergo varying degrees of change across an individual's lifespan. As individuals progress through the ageing process, there is a tendency for some features, such as conscientiousness and agreeableness, to exhibit an increase. This may be seen as an indication of the development of social maturity and responsibility (Roberts et al., 2006).

2.12.4 Promoting Effective Learning for Students

It is important to understand how changes in learning preferences and learning abilities emerge with age and across different age groups to put in place strategies that will foster successful learning experiences during the many life course stages. When considering younger students, instructional activities may be customized to harness their innate curiosity, cognitive adaptability, and inclination towards active learning. Piaget (1954) suggested that children had an inherent inclination to engage in exploration and interaction with their surroundings, driven

by internal motivation. The researcher further argued that all these active undertakings are mediums through which the children gain knowledge; so, the introductions of instructive methodologies, one of experiential learning, another of interactive problem-solving, and the third of collaborative group work, can be greatly strengthened to boost the process of knowledge acquisition. Multimedia technologies and game-based learning may be effectively integrated so that the diversity of the students' learning preferences may be well accommodated to enhance the level of students' engagement and enjoyment of the educational experience. This will develop a nurturing, all-inclusive learning environment that may boost learners' confidence and their ability to face all sorts of challenges, hence laying a sound basis for a continuous learning process throughout life.

Adolescents will develop more cognitive abilities during this period: abstract thinking, logical thinking, and metacognitive skills. Thus, adaptation of learning techniques helps in improving the engagement of higher cognitive skills. In other words, part of the learning activities may include real-life situations, debates, simulations, and research projects, and be much more effective compared to the rest in promoting deeper knowledge of complex concepts and being useful for the critical development of thinking in the student population. It is interesting to note the fact that adolescents place the highest value on an autonomous ability and personal relevance in any experiences surrounding their educative undertaking. Hence, the provision of options in educational activities and the integration of the curriculum with students' individual interests and real-world contexts have the potential to enhance their levels of motivation and active involvement (Erikson, 1950).

In other words, adults enter a learning situation with an abundance of personal and professional experiences that naturally shape their learning preferences. Based on the concepts of andragogy proposed by Knowles et al. (2011), it may be argued that adult learners exhibit a

greater inclination towards self-direction, practicality, and goal orientation in comparison to their younger counterparts. Furthermore, intrinsic motivation is observed when learning aligns directly with an individual's everyday life and proves useful for immediate application. Thus, it is imperative that the learning methodologies designed for adult learners prioritize self-directed learning, problem-solving abilities, experiential learning, and practical application in real-life contexts. In flipped classrooms, methods like case studies, scenario-based learning, project-based learning, and collaborative learning work well because they give students plenty of opportunities to apply what they have learned. This would mean that reflection could be included as an activity that engage people's metacognitive capacity, thus allowing one to learn at a deeper level. Overall, understanding the developmental changes in learning that take place with the increasing age of the learners can greatly inform the pedagogy of very effective methods of instruction and educational settings, thus catering to the ever-growing needs and preferences of the learners. This will support the enhancement of lifelong learning and personal development.

Chapter 3: Methodology

3.1 Research Approach

This research follows a mixed-methods approach that investigates the relationships between BFPT and KELT of higher education students in the UAE. Empirical in nature, this research will utilize a single-case study within the higher education sector at a reputable semi-governmental institution in Dubai. The choice of conducting a single-case study at a specific university in Dubai is strategically aligned with the research objectives of examining management and educational leadership within a higher education context. The chosen university presents a unique stance due to its strong accreditation, broad curriculum, and innovative approach to student learning. Moreover, the university is known for implementing top-notch management practices that reflect in its high academic standards and academic achievements of its students. The above listed reasons provide a strong baseline to investigate the research questions outlined in chapter one. Ultimately, the choice of a single-case study methodology is not only justified by such reasons, but is also pivotal in acquiring in-depth insights that might not be explicitly evident in a multi-case research approach.

The advent of the mixed research method has been met by searching for a philosophical paradigm that unites quantitative and qualitative approaches in one research (Biddle & Schafft, 2015; Hall, 2013). Thus, scholars have considered pragmatism as the most prevalent philosophical justification for the mixed research method (Hathcoat & Meixner, 2017; Uzun, 2016). Pragmatism is based on the idea of “what works”, and aims to address and solve real-world issues rather than relying on underlying assumptions related to the epistemological nature of knowledge (Creswell, 2007; Shannon-Baker, 2016). This, according to Brown (2020), signifies that pragmatism pilots “action-oriented” research methods. Because

of the study's nature, the pragmatic research allows to investigate the research questions by constantly addressing the notion of "what works best" and ultimately leading to solutions in innovative ways.

Creswell (2014) states that the fundamental belief of the mixed methods approach is that combining both quantitative and qualitative methods deliver a thorough comprehension of the study's problem statement rather than using only one research method. Thus, the researcher aims to utilize this method in order to strengthen the rigor and depth of this study. Additionally, a mixed research approach will allow the researcher to benefit from "complementary strengths" which uses the strengths of one research approach to support and complement the other one; their combination will also address weaknesses and limitations found in one research method (Johnson & Christensen, 2019; Sale et al., 2002). Another reason for opting for a mixed research method is the benefit of "triangulation". The aim of triangulation is to enhance and reinforce the results of a study by using various data collection methods and analyses to research the same phenomenon in order to acquire a thorough comprehension of the phenomenon. Additionally, triangulation aims to evaluate and compare the findings derived from a specific research method with findings derived from another research method (Glogowska, 2015; Greener, 2008; Molina-Azorin, 2016).

Since most of the studies conducted on the relationship between KELT and the BFPT were quantitative in nature, this study employed the explanatory sequential mixed methods design to further explore the views of these two constructs and add in-depth analysis to the findings. The collected data was completed in two phases. In the first phase, the quantitative data was collected by using surveys, which is followed by distributing the surveys to respondents, and then analysing the responses using SPSS. In the second phase, the qualitative

data was collected by conducting interviews which were analysed by using thematic analysis.

Thus, the study's design is sequential in nature as phase 2 followed phase 1.

3.2 Research Methods

The main purpose of this study is to investigate the relationships and views among BFPT and KELT of higher education students in the UAE. Table 1 below displays the study's research questions and their appropriate approaches, instruments used, participants, samples, and the tools used for data analysis. The first two research questions utilize quantitative analysis with various statistical tests, while the third research question utilizes qualitative analysis with thematic analysis as the main method.

The BFPT model is a robust theoretical foundation, where a major strength of the model is its ability to blend complex human characteristics into five distinct personality dimensions, which provides a flexible approach to assessing personalities. These include Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. When comparing BFPT to other models such as the Myers-Briggs Type Indicator (MBTI) or the Eysenck Personality Inventory (EPI), the BFPT stands out as having one of the most accurate measures, is empirically consistent, and reliable, thus enhancing its relevance across the literature (Soto & John, 2017). However, a limitation of this model is its broad categories (Gurven et al., 2013), which may overlook nuanced aspects of personality that could be influenced by the specific demographic factors examined in this study, such as gender, age, degree type, and academic discipline, within the educational setting of the UAE. To address this limitation, the addition of qualitative data from interviews supports the quantitative data, as the semi-structured interviews can reveal potential nuances that are not fully captured by standard questionnaires. This approach not only enhances the depth of the analysis, but also ensures that the findings accurately reflect the intricate complexities of personality dynamics

within the UAE. This makes the BFPT model the most suitable choice for exploring the specific demographic factors outlined in this research.

KELT model, on the other hand offers a rigorous framework for understanding the learning process of higher education students. This model is favoured in understanding how individuals learn from experience as it offers a structured yet flexible framework that facilitates the examination of learning as a dynamic process. Moreover, the model provides a comprehensive view by encompassing the full spectrum of experiential learning, from thinking to acting and experiencing and reflecting, making it particularly relevant for diverse learning environments. This makes the model perfectly suited to explore the diverse and interactive learning environments found in higher education in the UAE. Furthermore, Kolb's Learning Style Inventory (LSI) is a tool that helps individuals recognize their learning styles, has clear instructions and is simple to complete, especially the one developed in 1985 which only contains 12 statements and is the one used in this study. Moreover, the simplicity of this tool, in comparison to many other learning assessment tools such as the MBTI (Myers & McCaulley, 1985) which contains 93 statements, or the Honey and Mumford's (1992) Learning Style Questionnaire, which contains 80 statements, gives it an advantage over other tools.

An important consideration is that the model's linear progression through stages may not fully capture the complex, iterative nature of learning experienced by students in the UAE, where diverse demographic factors such as gender, age, degree type, and academic discipline significantly influence educational engagement. To address this, the study employs qualitative methods such as interviews with students in order to gain deeper insights into students' learning approaches. By acknowledging such complexities, this research not only enriches the

application of Kolb's model, but also enhances its relevance for the specific demographic variables outlined in this study.

It is important to note that this study incorporates both of Kolb's learning modes (CE, RO, AC, AE) and Kolb's learning styles (Accommodating, Assimilating, Diverging, and Converging). Hence, throughout this study, the term "Kolb's learning approaches" will refer to these two components. The decision to utilize these two theoretical components stems from a commitment to a comprehensive analysis of learning processes. Moreover, by recognizing the limited research on the interaction between learning modes with personality traits, especially in Dubai, UAE, this study aims to bridge this gap by exploring how these aspects of the learning process interact with personality dimensions of the BFPT. This approach acknowledges the complexity of students' learning experiences by integrating intrinsic preferences (learning styles) and the dynamic phases of learning (learning modes) with the BFPT. By combining these constructs, the research provides a detailed framework that not only examines students' differences but also offers actionable insights into optimizing educational strategies. Furthermore, this dual approach enables the exploration and identification of intricate relationships and potential contradictions between different components of learning preferences and personality. Additionally, incorporating both learning modes and learning styles lead to a comprehensive perspective which ensure that the developed educational methodologies are adaptable and well-informed, offering significant contributions to educational psychology and pedagogy. Finally, the integration of both Kolb's learning modes and learning styles aims to set a precedent for future studies in instructional strategies, potentially leading to more personalized teaching methods tailored to individual personality traits.

In summary, both the BFPT and KELT offer valuable perspectives for examining the interplay between personality traits and learning approaches among higher education students in Dubai, UAE. While each model has its strengths and weaknesses, they collectively provide a comprehensive framework for understanding how different personality dimensions and learning styles interact not just with each other, but also within the diverse demographic context of gender, gender, degree type, and academic discipline. By acknowledging the limitations and adapting the application of these models to the specific research setting, the study leverages the BFPT and KELT to uncover rich, contextual insights into student learning and personality dynamics.

When it comes to answering the research questions, research question 1 “What is the relationship between personality traits and learning approaches of higher education students in the UAE?”, Descriptive Statistics, Pearson’s Correlation, Multiple Regression, and Binary Logistic Regression were used. As for research question two, “Do demographic variables contribute to differences among learning approaches and behavioural outcomes of higher education students in the UAE?”, Descriptive Statistics, Multiple Regression, Analysis of Variance (ANOVA), and Binary Logistic Regression were used. Lastly, for the third research question “To what extent do the views of higher education students correspond with personality traits and learning approaches relevant to the UAE?”, thematic analysis was used to analyse semi-structured one-on-one interviews conducted with students.

Table 1**Table Summary of Research Methods**

Research Questions	Research Approach	Data Collection Instruments	Participants	Sample	Data Analysis
Q1: What is the relationship between personality traits and learning approaches of higher education students in the UAE?	Quantitative	Survey	Undergraduate and graduate students at a semi-governmental university in Dubai	186 students	Descriptive Statistics, Pearson Correlation, Multiple Regression, Binary Logistic Regression
Q2: Do demographic variables contribute to differences among learning approaches and behavioral outcomes of higher education students in the UAE?	Quantitative	Survey	Undergraduate and graduate students at a semi-governmental university in Dubai	186 students	Descriptive Statistics, ANOVA, Multiple Regression,

					Binary Logistic Regression
Q3: How do the views of higher education students relate to personality traits and learning approaches in the UAE?	Qualitative	One-on-one interviews	Undergraduate and graduate students at a semi-governmental university in Dubai	19 students	Thematic Analysis

3.2.1 Research Context

The research is conducted within the context of UAE, at a semi-governmental university institution located within the city of Dubai. The justification behind choosing one university lies within the purpose of the study, which is a single case-study that investigates a specific university in great detail. This approach allows to investigate the research questions in great detail and depth within the higher education sector. Additionally, the findings of this approach provide rich insights into the relationship between personality traits and learning approaches within the educational sector. According to Baxter and Jack (2008), case studies are often used for research investigations that necessitate in-depth understanding of the phenomenon being studied, and are useful within educational settings. Moreover, concentrating on a single institution allows for a more controllable scope of study and provides a depth of analysis that can be challenging to attain in research with a broader scope (Merriam & Tisdell, 2015). This ensures that the study remains comprehensive and thorough, tackling the intricacies that are often lost in wider and more broad studies. Furthermore, the semi-governmental university institution has a sound reputation in the UAE and upholds a strong accreditation. It also offers a variety of different academic disciplines, which helps examine the theoretical concepts of this study. Overall, the methodological approach of adopting a single-case study is grounded in the essence of a case study research, which focuses on conducting detailed analysis in order to understand and interpret the complex challenges of an educational phenomena effectively. Thus, this will allow the research to tackle nuanced questions pertaining the relationships between personality traits and learning approaches that might not be effectively investigated in a broader context.

3.2.2 Population, Sampling, and Participant Selection

The population of this study are higher education students; university students that include both undergraduates (Bachelor's) and graduates (Master's and PhD). The reason behind choosing this type of population rather than students from K-12 is that most of the studies done on this topic include higher education students, so obtaining literature on this population demographic is more accessible. Another reason is that students at the university level contribute more accurately to the study's objectives than students at the K-12 division. According to Yu (2021), children's behaviour and personality are constantly being influenced by biological and environmental factors, and it is not until they are at least eighteen years of age that those factors finally start to set in. Thus, since the age of university typically starts from eighteen years, the researcher decided it would be in the study's best interest to select these types of participants. Moreover, various studies (Braskamp, 2007; Schwartz et al., 2005; Schwartz, 2006) demonstrate that students during university are considered to be at a meticulous phase of their lives of self-discovery towards adulthood and the actual world. Thus, the researcher felt it was important to investigate these participants in order to gain valuable insights from their experiences and understand their journey into adulthood.

Since this is a single-case study, the sample comes from one primary university; a semi-governmental institution that offers a variety of multiple disciplines. The choice for opting for this specific university as a single case study was driven by a number of clearly established benchmarks, critical for tackling the research questions concerning the interplay between higher education students' personality traits and learning approaches in the UAE. These benchmarks include the university's strong presence in the UAE, its ranking (both locally and globally), as well as its regional and international accreditations. Furthermore, the university's strong leadership, which is reflected in its high academic standards and academic achievements of its students, also played a role in the choice of choosing this university.

In terms of the quantitative approach, survey responses were collected from 186 students ($n=186$) across multiple disciplines, including engineering, business, education, architecture, informatics, and artificial intelligence. Permission was obtained from instructors and professors teaching classes across these disciplines and degree levels, which included Bachelor's, Master's, and PhD students, ensuring a diverse sample in terms of academic progression. The researcher visited the classes to explain the purpose and details of the surveys to the students and shared the online survey links to facilitate their participation. According to Fraenkel and Wallen (1993), the acceptable minimum sample size needs to be at least 10% of the target population (which in this case is 1,000) in order to have a representative sample and successfully carry out the study. Out of these respondents, 88 were male, and 98 were female. For the qualitative approach, one-on-one semi-structured interviews were conducted online with 19 students. Obtaining these interviews was more challenging; 32 students were approached to secure 19 participants. According to Fraenkel and Wallen (1993), the sample size for qualitative research needs to be at least 10% of the 10% of the target population derived from the quantitative methods (which in this case is 186) to carry out the study successfully. Since the total number of survey respondents was 186, representing approximately 18.6% of the target population, the figure was rounded to 19 interview participants.

The participation of 19 students is across various levels of higher education, comprising of eight Bachelor's students, six Master's students, and five PhD students, thus allowing for a wider range exploration of educational experiences. This diverse participant group facilitated a broad examination of perspectives across different stages of academic journeys, enhancing the study's thoroughness and depth.

Overall, this study utilized a convenience sampling method, where surveys were distributed directly to students in their classes. This method ensures that the sample is representative of higher education students in Dubai and includes participants from different degree levels and various academic disciplines. The sample size was determined to capture 10% of the total student population, ensuring a substantial representation for the analysis. With 186 students participating in the quantitative survey and 19 in the qualitative interviews, the sample size is adequate for identifying significant correlations and gaining in-depth insights. Potential biases include the self-selection of participants and the specific educational context of Dubai, which may influence the generalizability of the findings.

3.2.3 Data Collection Instruments

Since this research undertook a mixed methods approach, data collection consisted of two phases: quantitative methods in phase one and qualitative methods in phase two. The data that was collected by employing those two methods is intended to be both thorough and representative, capturing a diverse range of student demographics, perspectives, and experiences throughout the university's community. Moreover, these methods were designed to answer the research question: "What is the relationship between personality traits and learning approaches of higher education students in the UAE?" In order to investigate this question, the researcher relied on two main instruments: surveys and one-on-one interviews.

3.2.3.1 Tools. Three distinct tools were utilized for the quantitative aspect of the research to ensure a comprehensive approach to data collection and analysis.

Tool 1: Kolb's Learning Style Inventory (LSI)

The first tool was Kolb's Learning Style Inventory (LSI), a validated learning assessment based on Kolb's experiential learning model (Appendix A). It consists of 12 scenarios, each accompanied by four possible responses representing different learning preferences: Concrete

Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE).

- Participants ranked the four responses for each scenario, assigning 4 to the most relevant response and 1 to the least relevant response based on their learning preferences.
- After completing the rankings, participants transferred their scores to a scoring sheet, which calculated totals for each learning mode.
- Using these totals, students plotted their scores on a quadrant chart to create a visual representation in the form of a kite. The quadrant with the largest covered area determined their dominant learning style.
- This tool was distributed physically to students in classrooms, enabling direct interaction and immediate data collection.
- The results provided valuable insights into students' learning preferences and styles under Kolb's framework.

Tool 2: The Big Five Inventory (BFI)

The second tool was the Big Five Inventory (BFI), an online personality assessment designed to measure participants' personality traits on a continuum across five dimensions: openness, conscientiousness, extraversion, agreeableness, and neuroticism (Appendix B).

- The BFI comprises 44 Likert-scale items that participants accessed via a web link (<https://www.personalityassessor.com/bigfive/>).
- Participants rated their agreement with statements on a scale, which provided percentage scores for each personality trait.

- These scores were vital for the study as they enabled the researcher to analyse correlations between personality traits and students' learning approaches.
- The online nature of the tool allowed for easy access and convenience for participants.

Tool 3: Survey Tool on SurveyMonkey

The third tool was a custom survey created on SurveyMonkey (Appendix C). Unlike the first two tools, which were assessment tools, this survey functioned as a reporting mechanism to consolidate and organize data.

- Participants recorded their results from Kolb's LSI and the Big Five Inventory within this survey.
- Additionally, the survey collected demographic information, including gender, age range, degree type, and academic discipline.
- The survey also included Likert-scale questions to capture additional insights related to the research objectives.
- The data collected via SurveyMonkey was downloaded into Microsoft Excel for cleaning and preparation before statistical analysis in SPSS.

The use of these three tools aligns with Creswell's (2012) recommendations for employing surveys to reach large numbers of respondents efficiently. By combining validated assessment tools (Kolb's LSI and the BFI) with a custom-designed survey tool, the researcher ensured a structured and comprehensive approach to data collection, enabling a robust analysis of the relationship between students' learning styles, personality traits, and demographics.

3.2.3.2 One-on-One Semi-Structured Interviews. One-on-one interviews that are semi-structured in nature were used with students in order to understand how students' personality types are linked to their distinctive learning styles within a blended learning

environment. A total of 19 students were interviewed for the purposes of primary data collection. These include 8 Bachelor's degree students, 6 Master's degree students, and 5 PhD-level students. These interviews were all conducted using the software Zoom. Prior to being interviewed, the participants were informed that the interview will be recorded and later transcribed. They were also assured that their names will not be used in the transcription or research for privacy concerns and ethical reasons, and that the audio files would be destroyed after the interviews were fully transcribed. All the interviews were transcribed by using Otter (<https://otter.ai>), a website that converts audio files to text. After the transcription for all 19 participants were completed, the generated transcription was double-checked to verify that the transcription of the audio recordings was accurate word by word. After that, the recordings were destroyed. Appendix D contains these transcribed interviews.

According to Johnson and Christensen (2019), interviews are communicative and interactive in nature, and can assist a researcher in collecting freer speaking discussions and responses to the proposed research questions from participants. While semi-structured interviews have prearranged questions, they also offer participants complete freedom in their responses. Moreover, researchers can be in control and direct questions in the manner they wish to do so while also collecting valuable and insightful answers that are relevant to the overall study's aims and objectives (Brenner, 2006; Gaad & Khan, 2007; Partington, 2001). After receiving consent to record the interviews, the interviews were transcribed and analysed using thematic analysis. This form of qualitative data collection ultimately added depth in the analysis by combining the results with the quantitative data collected from the survey. These interviews helped elaborate further on the surveys answered by the students by providing deeper insights related to the topics of personality traits and learning styles. In a mixed-methods research approach, conducting qualitative interviews after quantitative surveys can

enhance the depth and clarity of the study. Quantitative data from surveys can identify broad patterns and trends, which interviews can then explore in greater depth, providing context and explanations behind those trends. This sequence allows for the clarification of any ambiguous results from the survey and can help refine or generate new hypotheses based on initial findings. Furthermore, interviews can validate the survey data through triangulation, ensuring a more robust and reliable set of findings. This methodological strategy not only enriches the understanding of the data but also leverages the strengths of both approaches to yield a comprehensive analysis of the research topic (Creswell & Plano Clark, 2017).

3.2.4 Reliability & Validity

The reliability and validity of the research is important in order to be thoroughly tested for credibility, feasibility, and overall effectiveness (Fraenkel & Wallen, 1993; Navarro Sada & Maldonado, 2007). Since the study focused on mixed methods, it conserved the overall credibility, reliability, and validity of the results (Creswell, 2012; Johnson & Christensen, 2019).

In the quantitative phase of this research, two main instruments were utilized: the Big Five Inventory (BFI) and the Learning Style Inventory (LSI). The BFI, developed by John in 1991 (John et al., 1991), is a 44-item assessment that demonstrated excellent Cronbach's alpha reliability values for each personality dimension: Openness (0.85), Conscientiousness (0.82), Extraversion (0.87), Agreeableness (0.79), and Neuroticism (0.90). These values, ranging from good to excellent, affirm the reliability of the BFI. The LSI, on the other hand, consistently showed Cronbach's alpha reliabilities between 0.81 and 0.88, as reported by Kolb and Kolb in 2005. Regarding the learning modes assessed by the LSI, the reliabilities were as follows: Concrete Experience (CE) at 0.82, Reflective Observation (RO) at 0.81, Abstract Conceptualization (AC) at 0.83, and Active Experimentation (AE) at 0.87. The learning styles,

particularly the differences between AC-AE and AE-RO, were found to be 0.83 and 0.88 respectively. Overall, to ensure reliability for both instruments, it was verified that the Cronbach's alpha coefficient for each instrument did not fall below 0.7, as explained by Taber in 2018. Therefore, both the BFI and LSI are considered reliable, with coefficient alpha reliabilities for personality dimensions, learning modes and learning styles demonstrating strong internal consistency.

In the qualitative phase of this research, a semi-structured interview approach was used in order to allow for flexibility whilst ensuring consistency in the questions and topics being covered with the students. This allowed follow-up questions to be explored in greater depth and gave students the freedom to share further insights on the questions being asked. Additionally, the interview process was standardized for all 19 students, and used the same format and process in order to maintain consistency, and thus minimize variations in the data collection method. Finally, the interviews were recorded and later transcribed to capture the entirety of student's thoughts, ensuring complete, comprehensive, and authentic responses, thus facilitating credibility checks whilst analysing the data.

A pilot study was not conducted due to several reasons. Firstly, the sample size of 186, which is slightly more than 10% of the 1000-student population, covers a significant portion of the student body, making it representative for a single-case study. Secondly, time constraints played a significant role in the decision not to conduct a pilot study, as prioritizing the collection of data from the full sample was deemed more effective. While the researcher understood the importance of a pilot study, measures were taken to ensure the trustworthiness and validity of the qualitative tool. Specifically, the integration of both quantitative and qualitative approaches acted as a form of triangulation, strengthening the credibility of the findings and mitigating uncertainties in the research design. These considerations helped

address potential concerns regarding the absence of a formal pilot study. In conclusion, based on the representativeness of the sample size, time constraints, and the methodological measures undertaken, the researcher chose not to conduct a pilot study but ensured the research remained valid and trustworthy.

3.2.5 Data Analysis

Taking into account the mixed methods nature of the study, while the data gathered from quantitative and qualitative methods was analysed separately, the results were combined from both approaches to produce an integrated outcome. The results derived from the quantitative method were used to execute a plan for the qualitative method. One benefit of the explanatory sequential mixed methods design is that it is easier for the researcher to achieve than other designs such as convergent mixed methods, since one method justifies the other and collection of data can be spaced out over time (Creswell, 2014).

In phase one, for quantitative analysis, the statistical SPSS tool was used to analyse respondents' results from the surveys. In addition to descriptive statistics, inferential statistics such as Pearson Correlation, Multiple Regression, ANOVA, and Binary Logistic Regression, were used (Johnson & Christensen, 2019). Descriptive statistics were utilized in order to provide an initial overview of the data, presenting central tendencies, variability, and distribution for both the continuous data for personality traits and learning modes, and the categorical data of learning styles and demographics. This step ensures the appropriateness of subsequent analyses. Pearson Correlation was employed to examine the strength and direction of linear relationships between the continuous personality traits and continuous measures of learning modes, identifying the most significant correlations with specific learning approaches and guiding deeper analysis. Multiple Regression was crucial for investigating how multiple personality traits predict learning modes when measured continuously, allowing for an

assessment of the combined effects and unique contributions of each trait. ANOVA was used to compare mean differences in demographics and learning modes separately across different levels of personality traits, interpreting whether variations in personality result in statistically significant differences in demographic variables learning preferences. Finally, Binary Logistic Regression was specifically utilized for learning styles, which were coded dichotomously, thus enabling the modelling of binary outcomes based on the influence of demographic factors and personality traits.

In phase two, for qualitative analysis, students were interviewed to explore their views on the research topic in greater detail. The one-on-one semi-structured interviews were transcribed verbatim and then analysed using thematic analysis to find similar keywords and phrases, which allowed patterns and common themes to emerge (Fraenkel & Wallen, 1993). Given the manageable sample size of 19 students, the researcher decided to conduct the thematic analysis manually, finding it more practical and engaging than using an advanced qualitative software like NVivo.

The process started with coding, where each participant was labelled according to his or her degree type, such as ‘Bachelor’s student 3’ or ‘Master’s student 4’. This labelling facilitated clearer recognition and organization of the collected data. Manual analysis allowed the researcher to deeply engage with the data, read over the entire transcripts, and familiarize himself with the text, which helped in observing patterns and obtaining further insights into emerging themes (Clarke & Braun, 2017).

Key themes identified included the preference for reflective and experiential learning activities among students with high Agreeableness and Openness, and a preference for structured and conceptual tasks among those with high Conscientiousness. These themes were

then related back to the quantitative findings, providing a deeper understanding of the relationships between personality traits and learning approaches.

Thematic analysis was conducted separately for each degree type (Bachelor's, Master's, and PhD), followed by a collective analysis across all categories. This dual approach ensured greater depth and accuracy in understanding the unique experiences of each student group, allowing for a thorough exploration of unique themes within each degree and enabling distinct comparisons across the three academic levels. The overall combined analysis integrated these findings to deliver a comprehensive view of the student experience, emphasizing trends prevalent across all degrees and specific to each academic degree. Additionally, this approach enhanced the rigor of the findings and facilitated the development of specific recommendations for academic policies and educators, making the results more applicable and beneficial in educational settings.

Overall, according to Creswell (2012), the various approaches used to analyse the derived data from quantitative and qualitative methods provided a solid base to compare, contrast, transform and ultimately consolidate the data.

3.2.6 *Ethical Considerations*

Ethical clearance was acquired from the observed university's Institutional Review Board to allow for data collection within the university. Moreover, the university's code of ethics has been adhered to stringently. Prior to the data collection, the participants were informed about the purpose of the study, and consent was obtained. Confidentiality and anonymity have been strictly maintained throughout to ensure the integrity of the research.

The ethical approval was acquired from the university before distributing surveys and conducting interviews to collect the research data. Additionally, the research participants were provided with consent forms which informed the participants in clear language about the

study's purpose, and how their contribution will help in meeting the study's overall aims and objectives. The consent forms also informed the participants that they have the right to withdraw their participation at any point during the surveys or interviews (Cohen et al., 2003).

Finally, participants were assured that their results would remain anonymous and confidential, and aliases were used in order to protect their identities (Fraenkel et al., 2018; Rubin & Rubin, 2005). Lastly, stringent practices were applied while collecting data during the recording of interviews in order to reduce ethical sensitivities and result in satisfactory transcription of data (Creswell, 2014). The audio files were destroyed as soon as the interviews were fully transcribed for all 19 students.

Chapter 4: Presentation of Findings

4.1 Introduction

This chapter presents the findings on relevant results concerning the analysis of the relationships and views among Big Five Personality Traits (BFPT) and Kolb's Learning Approaches (KLA) in Higher Education students in Dubai. The findings and discussion in this chapter are divided into sections corresponding to each research question. The first two research questions utilized a quantitative approach, whereas the third research question utilized a qualitative approach. Research question one presents the empirical findings on the relationship between learning approaches and personality traits of higher education students in the UAE in section 4.2. Research question two presents the interpretation of findings on how demographic variables contribute to differences in learning approaches and behavioural outcomes among higher education students in the UAE in section 4.3. And lastly, in section 4.4, research question three explores the extent to which the views of higher education students relate to learning approaches and personality traits specific to the UAE. All three sections link the empirical data findings to the literature review's theoretical frameworks in chapter 2, providing a comprehensive analysis of how the findings align with prior research. In doing this, this not only confirms the study's validity, but also highlights any new insights or contractions to existing theories in education.

4.2 Reliability of Instruments

The reliability of the tools used in this study was assessed through Cronbach's alpha, a statistical measure commonly utilized to determine internal consistency, which reflects the extent to which items within a scale are correlated and measure the same construct. The Big Five Inventory (BFI) and Kolb's Learning Style Inventory (LSI), both well-established

instruments in personality and learning style research, were analyzed for this purpose. As presented in Tables 2 and 3, the Cronbach's alpha coefficients for both instruments exceeded the generally accepted threshold of 0.70, indicating strong internal consistency. This demonstrates that the items within each scale are highly reliable and effectively capture the constructs of personality traits and learning styles as intended. The high reliability of these tools ensures that the results obtained are consistent and free from measurement error, enhancing the validity of the findings in this study. The robust internal consistency observed also supports the suitability of these instruments for application within the context of higher education students in Dubai, UAE, confirming their relevance and adaptability across diverse settings.

Table 2

Cronbach Alpha – Big Five Inventory (BFI)

Trait	Cronbach's Alpha
Openness	0.82
Conscientiousness	0.78
Extraversion	0.84
Agreeableness	0.76
Neuroticism	0.88

Table 3

Cronbach Alpha – Kolb's Learning Style Inventory (LSI)

Learning Mode	Cronbach's Alpha
Concrete Experience (CE)	0.80
Reflective Observation (RO)	0.77
Abstract Conceptualization (AC)	0.81
Active Experimentation (AE)	0.83

4.3 Research Question 1

This section addresses the first research question by presenting the findings of the relationship between the personality traits and learning approaches of higher education students in the UAE. Personality traits encompasses Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. On the other hand, learning approaches refers to both Kolb's Learning Styles (Accommodating, Assimilating, Diverging, and Converging) and Kolb's Learning Modes (Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation). For the purpose of exploring this relationship, four statistical tests were conducted: Descriptive Statistics, Correlation Analysis, Multiple Regression Analysis, and Binary Logistic Regression Analysis. These tests offer various important insights into the intricate dynamics of the relationship between personality traits and learning approaches, which are presented in detail below.

4.3.1 *Descriptive Statistics*

The summary statistics for the data is displayed below in Table 4. The table presents the range, minimum, maximum, mean, mode, standard deviation, skewness, and kurtosis. It provides useful information about the distribution and characteristics of the study variables and serve as a foundation for further analysis.

4.3.1.1 **Personality Traits.**

a) Openness: Openness scores ranged from 7 to 99, with a wide range of 92 points, indicating a diverse set of responses among participants. The average score was 65.74, which is above the midpoint of the possible range, suggesting a tendency towards higher openness. However, the mode of 52, which is the most common score, was significantly lower than the average, indicating that a plurality of participants had a score around the lower middle range. The

standard deviation was quite high at 21.527, reflecting this wide range of responses. The distribution of scores was moderately left-skewed (-0.869), meaning that there were more high scores than low scores. The kurtosis was close to zero (-0.064), suggesting that the distribution of Openness scores was relatively flat and spread out evenly, rather than peaked or having heavy tails.

b) Conscientiousness: Conscientiousness had a range of 94, with scores from 5 to 99, which is similar to Openness in terms of variability. The mean score was 72.79, indicating that on average, participants rated themselves as quite conscientious. The mode was 70, which is close to the mean, suggesting that scores were frequently clustered around this high value. The standard deviation was 17.174, which is lower than that for Openness, indicating less variability among participants' Conscientiousness scores. The distribution was significantly skewed to the left (-1.730), with more participants scoring higher. The kurtosis was quite high (4.323), indicating a distribution with a sharp peak and heavy tails, meaning that there were more scores at the extremes than would be expected in a normal distribution.

c) Extraversion: Extraversion scores also showed a wide range (94) and high variability, with a minimum of 4 and a maximum of 98. The mean score was 70.99, with the mode at 81, suggesting a general tendency towards higher extraversion among participants. The standard deviation was 20.115, indicating a broad spread of scores. The skewness was negative (-1.388), showing a leftward skew with more high scores. The kurtosis (1.257) was positive, indicating a somewhat peaked distribution, but not as pronounced as Conscientiousness.

d) Agreeableness: The range of Agreeableness scores was slightly narrower at 87, with a minimum score of 10 and a maximum of 97. The mean score was high at 73.48, with a mode of 76, indicating that participants were likely to see themselves as agreeable. The standard deviation was 19.636, showing a fair amount of variability but slightly less than Extraversion.

The distribution had a negative skewness (-1.328), indicating a concentration of higher scores, and a positive kurtosis (1.256), suggesting a distribution that is somewhat more peaked than normal.

e) Neuroticism: Neuroticism had the widest range of 95 points, from 3 to 98. The mean score was 49.58, which is around the midpoint of the scale, indicating a balanced view of neuroticism among participants. The mode was lower at 42, suggesting a commonality of lower scores. The standard deviation was 18.693, indicating a moderate spread of scores. The skewness was very close to zero (-0.114), suggesting a distribution that is almost symmetrical. The kurtosis was slightly positive (0.589), indicating a distribution that is slightly more peaked than normal.

4.3.1.2 Learning Modes.

a) Concrete Experience: Concrete Experience scores had a much narrower range of 34 points, from 14 to 48. The mean was 30.28, and the mode was 32, indicating a clustering of scores around the lower end of the scale. The standard deviation was low at 5.215, suggesting that participants' scores were relatively similar to each other. The skewness was just slightly negative (-.107), indicating a very slight leftward skew. The kurtosis was positive (.895), suggesting a slightly more peaked distribution than normal.

b) Reflective Observation: Reflective Observation had a range of 28 points, with scores from 15 to 43. The mean was 30.04, with a mode of 32, showing a small spread of scores around the lower end of the scale. The standard deviation was 4.723, indicating low variability among participants. The skewness was moderately negative (-.676), and the kurtosis was positive (1.407), indicating a distribution that is somewhat peaked and has a slight leftward skew.

c) Abstract Conceptualization: Abstract Conceptualization scores ranged from 14 to 44, with a mean of 29.80 and a mode of 32. The standard deviation was 4.830, showing a similar level of low variability as Reflective Observation. The skewness was zero (.000), indicating a perfectly symmetrical distribution of scores. The kurtosis was positive (1.317), suggesting a slightly more peaked distribution than normal.

d) Active Experimentation: Active Experimentation had the narrowest range of 26 points, from 17 to 43. The mean score was 29.88, with a mode of 28, indicating a tight clustering of scores around the lower end of the scale. The standard deviation was 4.610, reflecting low variability. The skewness was positive (.506), indicating a slight rightward skew with more low scores. The kurtosis was slightly positive (.531), indicating a distribution that is slightly more peaked than normal.

4.3.1.3 Learning Styles.

a) Assimilating, Diverging, Accommodating, Converging: These variables are binary with ranges of 1, indicating they represent dichotomous choices. The means for these variables are all below 0.5, suggesting that the majority of participants were categorized as '0' for these traits. The skewness for these variables ranged from moderate to high, with Accommodating and Converging showing substantial positive skewness (1.857 and 2.161, respectively), indicating that the majority of scores were at the lower end (0). The kurtosis values were also quite high, especially for Converging (2.699), indicating very peaked distributions with thin tails, which is typical for binary data with an imbalance in the distribution of responses.

Table 4**Summary Statistics for Learning Modes, Learning Styles, and Personality Traits**

Variables	Range	Minimum	Maximum	Mean	Mode	Std. Deviation	Skewness	Kurtosis
Concrete Experience	34	14	48	30.28	32	5.215	-.107	.895
Reflective Observation	28	15	43	30.04	32	4.723	-.676	1.407
Abstract Conceptualization	30	14	44	29.80	32	4.830	.000	1.317
Active Experimentation	26	17	43	29.88	28	4.610	.506	.531
Assimilating	1	0	1	.41	0	.494	.352	-1.897
Diverging	1	0	1	.28	0	.453	.961	-1.089
Accommodating	1	0	1	.16	0	.369	1.857	1.463
Converging	1	0	1	.13	0	.342	2.161	2.699
Openness	92	7	99	65.74	52	21.527	-.869	-.064
Conscientiousness	94	5	99	72.79	70	17.174	-1.730	4.323
Extraversion	94	4	98	70.99	81	20.115	-1.388	1.257
Agreeableness	87	10	97	73.48	76	19.636	-1.328	1.256
Neuroticism	95	3	98	49.58	42	18.693	-.114	.589

Note. Sample size (n) = 186 respondents.

4.3.2 Correlation Analysis

The Pearson's Correlation Coefficient is useful in estimating the relationships among variables, which in this case are the Big Five Personality Traits, Kolb's Learning Modes, and Kolb's Learning Styles. The correlation findings revealed the types, patterns, and relevance of the variables' linear correlations. Table 5 below presents the coefficients of the variables for the data sample. For the Correlation analysis, the findings of personality traits against learning modes will be presented first, followed by the findings of personality traits against learning styles.

4.3.2.1 Correlation - Personality Traits and Learning Modes. This section presents the findings and discussion for the Correlation analysis between the Big Five Personality Traits and Kolb's Learning Modes.

Openness with Concrete Experience (CE). The Correlation analysis for the personality trait Openness against the learning mode CE was reported as statistically non-significant ($r = 0.008$, $p > 0.05$). This implies that there is no reliable evidence to support a meaningful rapport between Openness and CE as a preferred learning mode.

Openness with Reflective Observation (RO). The Correlation analysis for Openness against RO was reported as being statistically significant ($r = -0.263$, $p < 0.001$), indicating a weak negative relationship. This suggests that students with lower levels of Openness might be more inclined toward Reflective Observation.

Openness with Abstract Conceptualization (AC). The Correlation analysis for Openness with AC was reported to be statistically insignificant ($r = -0.030$, $p > 0.05$). This implies that there is no reliable evidence to support a meaningful rapport between Openness and AC as a preferred learning mode.

Openness with Active Experimentation (AE). The Correlation analysis for Openness against AE was reported as being statistically significant ($r = 0.293$, $p < 0.001$), indicating a moderately positive relationship between the two variables. This suggest that students who ranked higher on Openness were more likely to utilize AE as their preferred learning mode.

Conscientiousness with Concrete Experience (CE). The Correlation analysis for Conscientiousness against CE was reported as being statistically significant ($r = -0.194$, $p < 0.01$), indicating a weak negative correlation. This suggests that students who ranked higher on Conscientiousness might be less inclined to engage in CE as their preferred learning mode.

Conscientiousness with Reflective Observation (RO). The Correlation analysis for Conscientiousness against RO was reported as ($r = -0.055$, $p > 0.05$), indicating a very weak negative but non-significant relationship. This implies that there is no meaningful association between Conscientiousness and RO as a preferred learning mode.

Conscientiousness with Abstract Conceptualization (AC). The Correlation analysis for Conscientiousness against Abstract Conceptualization (AC) was reported as being statistically significant ($r = 0.218$, $p < 0.01$), indicating a weak but positive correlation between the two variables. This suggests that students who ranked higher on Conscientiousness were more likely to prefer AC as their preferred learning mode.

Conscientiousness with Active Experimentation (AE). The Correlation analysis for Conscientiousness against AE was reported as ($r = 0.047$, $p > 0.05$), indicating a very weak positive but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Conscientiousness and AE as a preferred learning mode.

Extraversion with Concrete Experience (CE). The Correlation analysis for Extraversion against CE was reported as ($r = 0.111$, $p > 0.05$), indicating a very weak positive

but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Extraversion and CE as a preferred learning mode.

Extraversion with Reflective Observation (RO). The Correlation analysis for Extraversion against RO was reported as being statistically significant ($r = -0.242$, $p < 0.01$), indicating a weak negative correlation between the two variables. This suggests that students who ranked higher in Extraversion might be less likely to engage in RO as a learning mode.

Extraversion with Abstract Conceptualization (AC). The Correlation analysis for Extraversion against AC was reported as ($r = -0.029$, $p > 0.05$), and indicated a very weak negative but non-significant correlation. This implies that there is no reliable evidence to support a meaningful rapport between Extraversion and AC as a preferred learning mode.

Extraversion with Active Experimentation (AE). The Correlation analysis for Extraversion against AE was reported as being statistically significant ($r = 0.153$, $p < 0.01$), and indicated a weak positive correlation. This suggests that students who scored higher on Extraversion were more likely to engage in AE as their preferred learning mode.

Agreeableness with Concrete Experience (CE). The Correlation analysis for Agreeableness against CE was reported as ($r = -.014$, $p > 0.05$), and indicated a very weak negative but non-significant correlation. This implies that there is no reliable evidence to support a meaningful rapport between Agreeableness and CE as a preferred learning mode.

Agreeableness with Reflective Observation (RO). The Correlation analysis for Agreeableness against RO was reported as being statistically significant ($r = -0.169$, $p < 0.05$), but indicated a weak negative correlation. This suggests that students who ranked higher on Agreeableness were less likely to engage in RO as their preferred learning mode.

Agreeableness with Abstract Conceptualization (AC). The Correlation analysis for Agreeableness against AC was reported ($r = -0.018$, $p > 0.05$), and indicated a very weak negative but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Agreeableness and AC as a preferred learning mode.

Agreeableness with Active Experimentation (AE). The Correlation analysis for Agreeableness against AE was reported as being statistically significant ($r = 0.208$, $p < 0.01$), indicating a positive yet weak correlation. This suggests that students who scored higher on Agreeableness are more likely to engage in AE as their preferred learning mode.

Neuroticism with Concrete Experience (CE). The Correlation analysis for Neuroticism against CE was reported as ($r = -0.031$, $p > 0.05$), and indicated a very weak negative but non-significant correlation. This implies that there is no reliable evidence to support a meaningful rapport between Neuroticism and CE as a preferred learning mode.

Neuroticism with Reflective Observation (RO). The Correlation analysis for Neuroticism against RO was reported as ($r = -0.011$, $p > 0.05$), indicating a very weak negative but non-significant correlation. This implies that there is no reliable evidence to support a meaningful rapport between Neuroticism and RO as a preferred learning mode.

Neuroticism with Abstract Conceptualization (AC). The Correlation analysis for Neuroticism against AC was reported as ($r = -0.0110$, $p > 0.05$), indicating a very weak negative but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Neuroticism and AC as a preferred learning mode.

Neuroticism with Active Experimentation (AE). The Correlation analysis for Neuroticism against AE was reported as being statistically significant ($r = 0.162$, $p < 0.05$),

indicating a positive but weak correlation. This suggests that students who scored higher in Neuroticism might be slightly more inclined to favour AE as their preferred learning model. Even though there is statistical significance in the correlation, it is not very strong. This implies that although there is a positive correlation between a higher level of neuroticism and a slight preference for AE, the impact of neuroticism on this learning preference is minimal.

4.3.2.2 Correlation - Personality Traits and Learning Styles. This section presents the findings and discussion for the Correlation analysis between the Big Five Personality Traits and Kolb's Learning Styles.

Openness with Assimilating. The Correlation analysis for Openness against Assimilating was reported as ($r = -0.101$, $p > 0.05$), and indicated a very weak negative but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Openness and Assimilating as a preferred learning style.

Openness with Diverging. The Correlation analysis for Openness against Diverging was reported as being statistically significant ($r = -0.181$, $p < 0.05$), and indicated a weak negative correlation between the two variables. This suggests that students who scored higher on Openness might be likely to favour Diverging as their preferred learning style. The correlation coefficient shows that as Openness increases, there is a slight tendency for the preference for the Diverging learning style to decrease.

Openness with Accommodating. The Correlation analysis between Openness and Accommodating was statistically significant ($r = .287$, $p < 0.001$) indicating a positive but weak correlation. This suggests that students who ranked high in Openness may have a slight preference for the Accommodating learning style. Such students are depicted as having a wide array of interests and an active approach to new experiences. Moreover, this correlation, albeit

being weak, suggests that such students are more likely to succeed in environments that involve adaptive, practical, and hands-on experience where they can combine new information with existing knowledge effectively.

Openness with Converging. The Correlation analysis for Openness against Converging was reported as ($r = 0.067$, $p > 0.05$), and indicated a very weak positive but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Openness and Converging as a preferred learning style.

Conscientiousness with Assimilating. The Correlation analysis for Conscientiousness against Assimilating was reported as being statistically significant ($r = 0.272$, $p < 0.001$), indicating a positive yet weak correlation. This suggest that students who scored higher on Conscientiousness might be slightly more inclined to favour Assimilating as their preferred learning style.

Conscientiousness with Diverging. The Correlation analysis for Conscientiousness against Diverging was reported as being statistically significant ($r = -0.368$, $p < 0.001$), indicating a significant moderate negative correlation. This suggests that students who scored higher on Conscientiousness were less likely to favour Diverging as their preferred learning style.

Conscientiousness with Accommodating. The Correlation analysis for Conscientiousness against Accommodating was reported as statistically non-significant ($r = 0$, $p > 0.05$), indicating no correlation between the two variables.

Conscientiousness with Converging. The Correlation analysis for Conscientiousness against Converging was reported as ($r = 0.089$, $p > 0.05$), indicating a very weak positive but

non-significant correlation. This implies that there is no reliable evidence to support a meaningful rapport between Conscientiousness and Converging as a preferred learning style.

Extraversion with Assimilating. The Correlation analysis for Extraversion against Assimilating was reported as ($r = -0.093$, $p > 0.05$), indicating a very weak negative but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Extraversion and Assimilating as a preferred learning style.

Extraversion with Diverging. The Correlation analysis for Extraversion against Diverging was reported as ($r = -0.064$, $p > 0.05$), indicating a very weak negative but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Extraversion and Diverging as a preferred learning style.

Extraversion with Accommodating. The Correlation analysis for Extraversion against Accommodating was reported as being statistically significant ($r = 0.155$, $p < 0.05$), indicating a positive yet weak correlation between the two variables. This suggests that students who ranked higher on Extraversion might be slightly more inclined to prefer Accommodating as their preferred learning style.

Extraversion with Converging. The Correlation analysis for Extraversion against Converging was reported as ($r = 0.048$, $p > 0.05$) indicating a very weak positive but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Extraversion and Converging as a preferred learning style.

Agreeableness with Assimilating. The Correlation analysis for Agreeableness against Assimilating was reported as being statistically significant ($r = -0.160$, $p < 0.05$), and indicated

a weak negative correlation between the two variables. This suggests that students who ranked higher on Agreeableness might be less likely to engage in Assimilating as their preferring learning style. Additionally, students with this personality trait might find the introverted and theoretical nature of the Assimilating learning style less appealing to them, and goes against their supportive and cooperative nature.

Agreeableness with Diverging. The Correlation analysis for Agreeableness against Assimilating was reported as ($r = 0.01$, $p > 0.05$), indicating a very weak positive but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Agreeableness and Diverging as a preferred learning style.

Agreeableness with Accommodating. The Correlation analysis for Agreeableness against Assimilating was reported as ($r = 0.012$, $p > 0.05$), indicating a very weak positive but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Agreeableness and Accommodating as a preferred learning style.

Agreeableness with Converging. The Correlation analysis for Agreeableness against Assimilating was reported as being statistically significant ($r = 0.187$, $p < 0.05$), indicating a positive yet weak relationship between the two variables. This suggests that students who ranked higher in Agreeableness might be slightly more likely to prefer Converging as their learning style.

Neuroticism with Assimilating. The Correlation analysis for Neuroticism against Assimilating was reported as ($r = 0.018$, $p > 0.05$) indicating a very weak positive but non-significant correlation between the two variables. This implies that there is no reliable

evidence to support a meaningful rapport between Neuroticism and Assimilating as a preferred learning style.

Neuroticism with Diverging. The Correlation analysis for Neuroticism against Diverging was reported as ($r = -0.080$, $p > 0.05$), indicating a very weak negative but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Neuroticism and Diverging as a preferred learning style.

Neuroticism with Accommodating. The Correlation analysis for Neuroticism against Accommodating was reported as ($r = 0.136$, $p > 0.05$), indicating a weak positive but non-significant correlation between the two variables. This implies that there is no reliable evidence to support a meaningful rapport between Neuroticism and Accommodating as a preferred learning style.

Neuroticism with Converging. The Correlation analysis for Neuroticism against Converging was reported as ($r = -0.055$, $p > 0.05$), indicating a very weak negative but non-significant correlation. This implies that there is no reliable evidence to support a meaningful rapport between Neuroticism and Converging as a preferred learning style.

Table 5***Pearson's Correlation Matrix***

Variables		Statistics	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[1 2]	[1 3]
[1]	Openness	r-value	--												
		p-value													
[2]	Conscientiousness	r-value	.195*	--											
		p-value	0.008												
[3]	Extraversion	r-value	.495**	0.022	--										
		p-value	0	0.766											
[4]	Agreeableness	r-value	.496**	.296**	.396**	--									
		p-value	0	0	0										
[5]	Neuroticism	r-value	0.079	-0.042	-.0057	-.171*	--								
		p-value	0.282	0.568	0.443	0.019									

[6]	Concrete Experience	r-value	0.008	-.194** *	0.111	-.014	-.031	--					
		p-value	0.918	0.008	0.132	0.846	0.677						
[7]	Reflective Observation	r-value	.263* **	-0.055	.242* **	.169* *	-.011	-.147**	--				
		p-value	0	0.453	0.001	0.021	0.878	0.046					
[8]	Abstract Conceptualization	r-value	-0.03	.218** *	-.029	-.018	-0.11	.626** *	.281* *	--			
		p-value	0.681	0.003	0.692	0.804	0.134	0	0				
[9]	Active Experimentation	r-value	.293* **	0.047	.153* *	.208* **	0.162 **	.325** *	.564** *	-0.052	--		
		p-value	0	0.522	0.037	0.004	0.027	0	0	0.484			
[10]	Assimilating	r-value	-.0101	.272** *	-.0093	-.160* *	0.018	.371** *	.325** *	.335** *	.263** *	--	
		p-value	0.172	0	0.205	0.029	0.81	0	0	0	0		
[11]	Diverging	r-value	-.181* *	-.368** *	-.0064	0.01	-0.08	.433** *	.346** *	-.413** *	-.411** *	-.531** *	--
		p-value	0.013	0	0.386	0.897	0.276	0	0	0	0	0	

[12]	Accommodating	r-value	.287**	0	0.155**	0.012	0.136	.364** *	-.416** *	-.394** *	.428** *	-.369** *	-.277** *	--	
		p-value	0	0.997	0.034	0.866	0.064	0	0	0	0	0	0		
[13]	Converging	r-value	0.067	0.089	0.048	0.187**	-.055	-.413** *	-.485** *	.485** *	.456** *	-.331** *	-.249** *	-.173* *	--
		p-value	0.367	0.224	0.515	0.011	0.46	0	0	0	0	0	0.001	0.018	

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

4.3.3 *Multiple Regression Analysis*

Multiple regression analysis is used to test the relationship between one continuous variable and two or more independent variables, which can be either continuous or categorical. In this case, multiple regression analysis was conducted to measure the relationship between Personality Traits (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) and Kolb's Learning Modes (RO, CE, AC, AE).

The Multiple Regression findings presented in Table 6 examine the relationship between RO (the dependent variable) and various personality traits as the independent variables. The analysis of personality traits and their effect on RO reveals non-significant negative effects across the board, suggesting that these traits do not significantly influence RO. Specifically, Openness shows a negative effect ($B = -0.039$, $p < 0.1$), closely approaching the threshold for significance, indicating a slight tendency towards a lack of significant impact. Conscientiousness ($B = -0.003$, $p > 0.05$), Agreeableness ($B = -0.005$, $p > 0.05$), and Neuroticism ($B = -0.002$, $p > 0.05$) all present non-significant negative effects, further supporting the notion that these personality traits do not play a significant role in affecting RO. Extraversion also follows this pattern with a non-significant negative effect ($B = -0.034$, $p < 0.1$), hinting at a proximity to significance but ultimately indicating no substantial impact on RO. Collectively, these findings suggest that while certain personality traits might be close to influencing RO, none show a significant effect in this context.

The overall model has an R Square of 0.086 and an Adjusted R Square of 0.061, indicating a moderate explanatory power. These values suggest that while the model explains some variance in RO, the overall explanatory power is somewhat limited. The close-to-significant p-values for Openness and Extraversion suggest that these traits might have a more notable, yet still not statistically significant, influence on RO compared to the other

personality traits. This analysis indicates that additional factors not included in the model might also play a role in explaining variations in RO.

Table 6

Multiple Regression with RO as the Dependent Variable in Personality Traits

Predictor Variable	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	35.758	2.218		16.12	0
Openness	-0.039	0.02	-0.177	-1.948	0.053
Conscientiousness	-0.003	0.021	-0.012	-0.158	0.875
Extraversion	-0.034	0.02	-0.147	-1.73	0.085
Agreeableness	-0.005	0.021	-0.021	-0.233	0.816
Neuroticism	-0.002	0.019	-0.01	-0.13	0.897

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.086; Adj R Square: 0.061

The Multiple Regression analysis in Table 7 explores the influence of various personality traits on CE as the dependent variable. Openness shows a non-significant negative effect ($B = -0.002$, $p > 0.05$), suggesting no substantial impact on CE. In contrast, Conscientiousness presents a significant negative effect ($B = -0.059$, $p < 0.05$), indicating that higher levels of Conscientiousness may lead to lower levels of CE, highlighting a notable relationship between the two. Extraversion, with a non-significant positive effect ($B = 0.031$, $p > 0.05$), and Agreeableness, showing a negligible negative effect ($B = -0.001$, $p > 0.05$), both do not significantly influence CE. Similarly, Neuroticism's non-significant negative effect (B

= -0.009, $p > 0.05$) suggests it does not have a meaningful impact on CE. These findings illustrate the varied impact of personality traits on experiential learning, with Conscientiousness notably affecting students' engagement in CE.

It is important to note that the overall model has an R Square of 0.052 and an Adjusted R Square of 0.026, indicating a relatively low explanatory power. These values suggest that while the model explains some variance in CE, particularly with respect to Conscientiousness, the overall explanatory power of the model is somewhat limited. This suggests that other factors not included in the model might also play a significant role in explaining CE.

Table 7

Multiple Regression with CE as the Dependent Variable in Personality Traits

Predictor Variable	Unstandardized		Standardized		Sig.
	Coefficients		Coefficients	t	
	B	Std. Error	Beta		
(Constant)	33.076	2.495		13.257	0
Openness	-0.002	0.022	-0.008	-0.091	0.928
Conscientiousness	-0.059	0.023	-0.195	-2.532	0.012
Extraversion	0.031	0.022	0.119	1.385	0.168
Agreeableness	-0.001	0.024	-0.005	-0.06	0.952
Neuroticism	-0.009	0.021	-0.032	-0.431	0.667

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.052; Adj R Square: 0.026

The multiple regression analysis outlined in Table 8 explores the influence of various personality traits on AC as the dependent variable. The findings reveal that Openness has a

non-significant negative impact on AC ($B = -0.005$, $p > 0.05$), suggesting that the trait does not play a significant role in affecting AC. Conversely, Conscientiousness exhibits a significant positive effect ($B = 0.07$, $p < 0.05$), underscoring a strong and positive relationship with AC, which highlights the importance of Conscientiousness in enhancing levels of AC. Extraversion also shows a non-significant positive effect ($B = 0.003$, $p > 0.05$), indicating no substantial influence on AC. Agreeableness presents a non-significant negative effect ($B = -0.026$, $p > 0.05$), implying it does not significantly affect AC. Lastly, Neuroticism's non-significant negative effect ($B = -0.03$, $p > 0.05$) suggests a lack of significant impact on AC, though it is noted that the p-value approaches the threshold for significance. These results collectively provide insights into how personality traits correlate with the propensity for AC, with Conscientiousness standing out as a significant positive predictor.

The overall model has an R Square of 0.069 and an Adjusted R Square of 0.044, indicating a moderate explanatory power. These values suggest that while the model explains a portion of the variance in AC, particularly with respect to Conscientiousness, the overall explanatory power is somewhat limited. This implies that other factors not included in the model might also play a significant role in explaining variations in AC. The close-to-significant p-value for Neuroticism suggests that this trait might have a more notable influence on AC compared to the other personality traits, though it still does not reach the conventional threshold for statistical significance. This analysis indicates the importance of considering additional variables or factors that might contribute to a more comprehensive understanding of AC.

Table 8**Multiple Regression with AC as the Dependent Variable in Personality Traits**

Predictor Variable	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	28.214	2.289		12.323	0
Openness	-0.005	0.021	-0.024	-0.257	0.797
Conscientiousness	0.07	0.021	0.249	3.269	0.001
Extraversion	0.003	0.021	0.012	0.141	0.888
Agreeableness	-0.026	0.022	-0.105	-1.17	0.243
Neuroticism	-0.03	0.019	-0.115	-1.547	0.124

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.069; Adj R Square: 0.044

The multiple regression analysis presented in Table 9 investigates the effects of various personality traits on AE as the dependent variable. The findings reveal a significant positive relationship between Openness and AE ($B = 0.046$, $p < 0.05$), indicating that individuals with higher levels of Openness tend to engage more in AE. Conversely, Conscientiousness shows a non-significant negative effect ($B = -0.008$, $p > 0.05$), suggesting it has little to no impact on AE. Similarly, Extraversion's effect on AE is non-significant and positive ($B = 0.001$, $p > 0.05$), implying that Extraversion does not play a significant role in influencing AE. Agreeableness also displays a non-significant positive effect ($B = 0.032$, $p > 0.05$), hinting at a potential influence on AE that does not reach the threshold for significance. Notably, Neuroticism has a significant positive effect on AE ($B = 0.041$, $p < 0.05$), suggesting that individuals with higher

levels of Neuroticism are more likely to engage in AE. These results highlight the relationships between personality traits and the propensity for engaging in active, experimental learning, with Openness and Neuroticism standing out as significant predictors of increased AE.

The overall model has an R Square of 0.118 and an Adjusted R Square of 0.093, indicating a moderate explanatory power. These values suggest that the model explains a reasonable portion of the variance in AE, particularly with respect to Openness and Neuroticism. This analysis indicates the importance of these personality traits in understanding variations in Active Experimentation.

Table 9

Multiple Regression with AE as the Dependent Variable in Personality Traits

Predictor Variable	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	22.952	2.127		10.788	0
Openness	0.046	0.019	0.216	2.415	0.017
Conscientiousness	-0.008	0.02	-0.028	-0.384	0.701
Extraversion	0.001	0.019	0.002	0.027	0.978
Agreeableness	0.032	0.02	0.137	1.573	0.118
Neuroticism	0.041	0.018	0.167	2.306	0.022

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.118; Adj R Square: 0.093

4.3.4 Binary Logistic Regression Analysis

A Binary Logistic Regression Analysis was carried out to investigate the connections between the BFPT (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) and KLS (Assimilating, Diverging, Accommodating, and Converging), with the findings documented in Table 10. This analysis brought to light several key insights regarding how various personality factors may influence learning style preferences.

4.3.4.1 Binary Logistic Regression – Personality Traits and Learning Styles.

Regarding personality traits, Openness displayed a negative association with the 'Diverging' learning style ($\beta = -.024$, $p < 0.1$), suggesting a tendency for individuals scoring lower in Openness to favour this learning style. Conscientiousness was negatively associated with 'Diverging' ($\beta = -0.067$, $p < 0.01$) but showed a positive relationship with 'Assimilating' and 'Accommodating' learning styles ($\beta = 0.056$ and $.067$ respectively, both $p < 0.01$), indicating that higher Conscientiousness correlates with these learning styles. Extraversion did not reveal any significant associations with the learning styles examined, indicating that it might not be a key factor in determining learning style preferences within this study's scope. Agreeableness was positively related to 'Diverging' ($\beta = .040$, $p < 0.1$) and 'Converging' ($\beta = 0.044$, $p < 0.05$) learning styles but negatively related to 'Assimilating' ($\beta = -.032$, $p < 0.05$), showing a complex relationship with learning preferences. Neuroticism showed a significant negative relationship with the 'Accommodating' style ($\beta = -.032$, $p < 0.1$), indicating that lower scores in neuroticism might be associated with this learning preference.

These findings collectively provide valuable insights into the relationship between personality traits, demographic factors, and learning style preferences, indicating that both personal and academic factors can significantly influence how individuals prefer to learn. The model's fit was assessed using -2 Log likelihood and Cox & Snell and Nagelkerke R Square

values. The Accommodating and Diverging learning styles showed higher fit and predictive power compared to Converging and Assimilating styles.

In summary, the findings from the binary logistic regression analysis reveal complex interplays between personality traits and learning style preferences. Among the personality traits, conscientiousness, agreeableness, and neuroticism showed significant associations with specific learning styles, highlighting the nuanced influence of personality on educational preferences. These results underscore the importance of considering a broad range of factors when examining learning styles and provide valuable insights for tailoring educational approaches to diverse learner profiles.

Table 10

Binary Logistic Regression

Variable	Diverging	Assimilating	Converging	Accommodating
Openness	-.024*	-0.005	0.001	-0.038
Conscientiousness	-.067***	.056***	0.008	.067***
Extraversion	-0.008	0.003	-0.005	0.007
Agreeableness	.040*	-.032**	.044**	0.021
Neuroticism	-0.005	0	-0.002	-.032*
Constant	1.889	-2.553	-6.29	1.550
-2 Log likelihood	179.831 ^a	221.295 ^a	133.026 ^a	125.111 ^a
Cox & Snell R Square	0.204	0.154	0.071	0.19
Nagelkerke R Square	0.293	0.207	0.131	0.324

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

4.3.5 Summary of Q1 Key Findings:

In order to address the first research question, which states: “What is the relationship between personality traits and learning approaches of higher education students in the UAE?”, four statistical measures were used. These include: Descriptive Statistics, Pearson Correlation Analysis, Multiple Regression Analysis, and Binary Logistic Regression. The correlation analysis explored the relationship between various personality traits and preferred learning approaches among higher education students in the UAE. The findings revealed statistically significant, albeit weak, positive correlations for Agreeableness with Active Experimentation (AE) ($r = 0.208$, $p < 0.05$) and Neuroticism with AE ($r = 0.162$, $p < 0.01$). This suggests that students who are more agreeable or neurotic are slightly more inclined to prefer AE as a learning mode. On the other hand, a weak negative correlation was observed between Openness and Diverging ($r = -0.181$, $p < 0.01$), indicating that students scoring higher in Openness are less likely to prefer Diverging, contrary to expectations that associate Openness with a propensity for creative and exploratory learning methods. These correlations suggest a nuanced relationship between personality traits and learning preferences, although the strengths of these relationships are generally low. Overall, it is important to note that correlation does not imply causation.

The Multiple Regression Analysis investigated how well personality traits could predict learning preferences among the students. The analysis showed that certain personality traits are significant predictors of specific learning approaches. For instance, Agreeableness significantly predicted preferences for Converging and AE styles, suggesting that agreeable students tend to prefer structured, group-based, and practical learning environments. However, other traits like Neuroticism did not show significant predictive power for any particular learning style, indicating that the influence of Neuroticism on learning preferences might be minimal or overshadowed by other personality factors.

In Binary Logistic Regression Analysis, the likelihood of students preferring specific learning approaches based on their personality traits was examined. This analysis reinforced some of the findings from the multiple regression analysis, showing that students with high Agreeableness are significantly more likely to prefer AE, an active and experimental learning style. However, the results for other traits like Neuroticism and Openness did not reach statistical significance, suggesting that these traits alone do not strongly dictate learning style preferences. The analyses collectively address the research question regarding the relationship between personality traits and learning approaches among higher education students in the UAE. The results indicate that while certain personality traits like Agreeableness are consistent predictors of specific learning preferences, others like Neuroticism and Openness show less influence. This suggests that personality traits do contribute to shaping learning preferences, but the impact varies across different traits and learning styles. These findings help in understanding how educational strategies can be tailored to align with the personality profiles of students to enhance learning outcomes.

4.4 Research Question 2

The second research question states: “Do demographic variables contribute to differences among learning approaches and behavioural outcomes of higher education students in the UAE?” As detailed in the methodology section, four statistical analyses were conducted to address this research question. These include Descriptive Statistics, Analysis of Variances (ANOVA), Multiple Regression Analysis, and Binary Logistic Regression. The findings of these analyses, which are presented below, provide a comprehensive understanding of how diverse demographic characteristics are linked to distinct learning and behavioural tendencies among students.

4.4.1 *Descriptive Statistics*

This section provides the descriptive statistics for the demographic variables of the research which include gender, age range, degree, and academic discipline. The below table 11 presents a comprehensive overview of each variable, encompassing the range, lowest and maximum values, mean, mode, standard deviation, skewness, and kurtosis. This data is crucial for comprehending the demographic composition of the sample and lays the foundation for further research. The subsequent analyses are derived from these core data, providing insights into the attributes of the students in the research.

Gender. The gender variable is coded as 1 and 2, denoting two distinct categories (1 for male and 2 for female). The range is 1, denoting the presence of these two separate categories. The average value, or mean of 1.53, which is closer to 2 than to 1, indicates a greater representation of the category labelled as 2, which in this case are females. The gender distribution has a moderate level of variability, as shown by a standard deviation of 0.501. The skewness coefficient is (-0.109), indicating a distribution that is somewhat symmetrical around the mean. The kurtosis value of (-2.010) suggests that the distribution is less peaked and has a flatter shape compared to a normal distribution.

Age Range. The variable of age range has five categories: 18-22, 23-33, 34-44, 45-55, and 56+. With a range of 4, this variable represents five separate age groups (1 to 5). The average value, or mean is 2.59, indicating a focus on the lower-middle age category. The mode is 2, which verifies the presence of this pattern. The standard deviation of 1.237 indicates a significant dispersion among different age groups. The skewness value of 0.438 shows a minor bias towards higher age categories, while the kurtosis value of (-0.736) implies a distribution that is slightly flatter than a normal curve.

Degree. There are three categories under the variable of degree: Bachelor's, Master's, and PhD. This variable has a range of 2, with three categories ranging from 1 to 3. It has a mean of 1.85 and a mode of 1, showing a higher frequency in the lowest category. The standard deviation of 0.809 indicates a moderate level of dispersion throughout the degree categories. The skewness value of 0.271 indicates a minor bias towards the higher degree categories, while the kurtosis value of (-1.421) suggests a more flattened distribution.

Academic Discipline. The variable of academic discipline includes eight categories: Education, Architecture, Law, Business, Project Management, Informatics, Engineering, and Artificial Intelligence. These categories are numbered from 1 to 8. The average is 4.08, indicating a centre inclination towards the middle category. The mode is 1, representing the most often occurring value in the first category. The standard deviation is significantly elevated at 2.424, indicating a broad dispersion across many disciplines. The skewness value of 0.187 indicates a minor bias towards the higher categories, while the kurtosis value of (-1.265) implies a more flattened distribution.

Table 11

Summary Statistics for Demographics

Variables	Range	Min.	Max.	Mean	Mode	Std. Deviation	Skewness	Kurtosis
Gender	1	1	2	1.53	2	0.501	-0.109	-2.010
Age Range	4	1	5	2.59	2	1.237	0.438	-0.736
Degree	2	1	3	1.85	1	0.809	0.271	-1.421
Academic Discipline	7	1	8	4.08	1	2.424	0.187	-1.265

4.4.2 Multiple Regression Analysis

Multiple Regression Analysis was conducted to measure the relationship between demographic variables (gender, age range, degree type, and academic discipline) and Kolb's Learning Modes (RO, CE, AC, AE), as well as between demographic variables and behavioural outcomes (personality traits such as Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism). This section is split into two subsections. The first subsection explores the relationship between personality traits and demographics. The second subsection explores the relationship between learning modes and demographics.

4.4.2.1 Multiple Regression Analysis - Demographics and Personality Traits. The section explores the relationship between personality traits (Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism) and demographics. The multiple regression findings presented in Table 12 examine the relationship between Openness (the dependent variable) and various demographic variables as the independent variables.

The analysis assesses the influence of gender, age range, degree, and academic discipline on Openness, revealing distinct impacts across these variables. Gender shows a non-significant negative effect on Openness, with a coefficient (B) of -3.496 and a p-value greater than 0.05, suggesting that gender differences do not significantly influence Openness. However, age range presents a significant positive effect ($B = 4.357, p < 0.01$), indicating that Openness increases with age. This significant relationship between age range and levels of Openness highlights the importance of age in influencing this personality trait. The level of education, represented by a degree, has a non-significant negative effect on Openness ($B = -0.984, p > 0.05$), showing that educational attainment does not have a significant impact on this trait. Similarly, academic discipline displays a non-significant negative effect ($B = -0.519, p > 0.05$), indicating that the field of study does not significantly affect Openness.

These findings suggest that among the examined factors, only age range has a significant positive impact on Openness, highlighting the role of age in shaping this personality dimension. In contrast, gender, degree, and academic discipline do not show significant effects on Openness. The overall model has an R Square of 0.060 and an Adjusted R Square of 0.039, indicating a low explanatory power. These values suggest that while the model explains some variance in Openness, particularly with respect to age range, the overall explanatory power of the model is somewhat limited. This suggests that other variables not included in the model might also play a significant role in explaining Openness.

Table 12

Multiple Regression with Openness as the Dependent Variable in Demographics

Predictor variable	Unstandardized		Standardized		t	Sig.
	Coefficients		Coefficients Beta			
	B	Std. Error				
(Constant)	63.725	7.601			8.384	0
Gender	-3.496	3.255	-0.081		-1.074	0.284
Age Range	4.357	1.335	0.25		3.265	0.001**
Degree	-0.984	2.139	-0.037		-0.46	0.646
Academic Discipline	-0.519	0.694	-0.058		-0.748	0.456

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.060; Adj R Square: 0.039

The multiple regression findings presented in Table 13 examine the relationship between Conscientiousness (the dependent variable) and various demographic variables as the independent variables. The analysis evaluates the effects of gender, age range, degree, and

academic discipline on Conscientiousness, revealing no significant impact across these variables. Gender exhibits a non-significant positive effect on Conscientiousness, with a coefficient (B) of 0.236 and a p-value greater than 0.05, indicating that gender differences do not significantly influence Conscientiousness. Age range presents a non-significant positive effect ($B = 1.877$, $p < 0.1$), suggesting that while age range is close to affecting Conscientiousness significantly, it does not cross the threshold for significance. The influence of having a degree on Conscientiousness is also non-significant, with a negative effect ($B = -1.201$, $p > 0.05$), pointing out that educational attainment does not significantly affect Conscientiousness. Similarly, academic discipline has a non-significant positive effect ($B = 0.39$, $p > 0.05$), indicating that the field of study does not significantly impact Conscientiousness.

These findings suggest that gender, age range, degree, and academic discipline do not have significant effects on Conscientiousness, although age range shows a tendency that verges on significance. The overall model has an R Square of 0.021 and an Adjusted R Square of -0.001, indicating a very limited explanatory power. These values suggest that the model does not effectively explain the variance in Conscientiousness based on these demographic variables. This implies that other factors not included in the model might be more influential in explaining variations in Conscientiousness.

Table 13

Multiple Regression with Conscientiousness as the Dependent Variable in Demographics

Predictor variable	Unstandardized		Standardized Coefficients Beta	t	Sig.
	Coefficients				
	B	Std. Error			

(Constant)	68.204	6.189		11.02	0
Gender	0.236	2.65	0.007	0.089	0.929
Age Range	1.877	1.087	0.135	1.728	0.086
Degree	-1.201	1.741	-0.057	-0.69	0.491
Academic Discipline	0.39	0.565	0.055	0.689	0.491

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.021; Adj R Square: -0.001

The Multiple Regression findings presented in Table 14 examine the relationship between Extraversion (the dependent variable) and various demographic variables as the independent variables. The analysis explores the influence of gender, age range, degree, and academic discipline on Extraversion, with the results indicating no significant impact from any of these variables. Gender shows a non-significant negative effect on Extraversion, with a coefficient (B) of -0.701 and a p-value greater than 0.05, suggesting that gender differences do not significantly influence Extraversion. Age range presents a non-significant positive effect ($B = 1.544$, $p > 0.05$), indicating that variations in age do not have a notable impact on Extraversion. The effect of obtaining a degree on Extraversion is also non-significant, with a positive coefficient ($B = 1.485$, $p > 0.05$), pointing out that the level of education does not significantly affect Extraversion. Similarly, academic discipline has a non-significant negative effect ($B = -0.262$, $p > 0.05$), indicating that the field of study does not significantly influence Extraversion.

These findings suggest that gender, age range, degree, and academic discipline do not have significant effects on Extraversion, indicating that these variables are not key determinants of this personality trait. The overall model has an R Square of 0.018 and an

Adjusted R Square of -0.004, indicating a very limited explanatory power. These values suggest that the model does not effectively explain the variance in Extraversion based on these demographic variables. This implies that other factors not included in the model might be more influential in explaining variations in Extraversion. The low explanatory power of the model indicates that while demographic factors were considered, they do not appear to be strong predictors for Extraversion in this analysis.

Table 14

Multiple Regression with Extraversion as the Dependent Variable in Demographics

Predictor variable	Unstandardized		Standardized		Sig.
	Coefficients		Coefficients	t	
	B	Std. Error	Beta		
(Constant)	66.375	7.261		9.142	0
Gender	-0.701	3.109	-0.017	-0.225	0.822
Age Range	1.544	1.275	0.095	1.211	0.227
Degree	1.485	2.043	0.06	0.727	0.468
Academic Discipline	-0.262	0.663	-0.032	-0.394	0.694

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.018; Adj R Square: -0.004

The multiple regression findings presented in Table 15 examine the relationship between Agreeableness (the dependent variable) and various demographic variables as the independent variables. The analysis assesses the effects of gender, age range, degree, and academic discipline on Agreeableness, showing distinct impacts across these factors. Gender

has a non-significant negative effect on Agreeableness, with a coefficient (B) of (-1.265) and a p-value greater than 0.05, indicating that gender differences do not significantly influence levels of Agreeableness. In contrast, age range exhibits a significant positive effect ($B = 3.566$, $p < 0.05$), suggesting that Agreeableness increases with age. This significant relationship highlights a strong link between age range and higher levels of Agreeableness. The level of education, represented by degree, shows a non-significant positive effect on Agreeableness ($B = 0.054$, $p > 0.05$), indicating that educational attainment does not have a significant impact on this personality trait. Similarly, academic discipline displays a non-significant negative effect ($B = -0.012$, $p > 0.05$), suggesting that the field of study does not significantly affect Agreeableness.

These findings indicate that among the examined factors, only age range has a significant positive impact on Agreeableness, pointing to the importance of age in shaping this aspect of personality. In contrast, gender, degree, and academic discipline do not show significant effects on Agreeableness. The overall model has an R Square of 0.048 and an Adjusted R Square of 0.027, indicating a modest explanatory power. These values suggest that while the model explains some variance in Agreeableness, particularly with respect to age range, the overall explanatory power of the model is somewhat limited. This suggests that other variables not included in the model might also play a significant role in explaining Agreeableness.

Table 15

Multiple Regression with Agreeableness as the Dependent Variable in Demographics

Predictor	Unstandardized	Standardized	t	Sig.
variable	Coefficients	Coefficients Beta		

	B	Std. Error			
(Constant)	66.117	6.976		9.477	0
Gender	-1.265	2.987	-0.032	-0.423	0.673
Age Range	3.566	1.225	0.225	2.911	0.004**
Degree	0.054	1.963	0.002	0.027	0.978
Academic Discipline	-0.012	0.637	-0.001	-0.018	0.985

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.048; Adj R Square: 0.027

The multiple regression findings presented in Table 16 examine the relationship between Neuroticism (the dependent variable) and various demographic variables as the independent variables. The analysis examines the influence of gender, age range, degree, and academic discipline on Neuroticism, with each factor showing no significant impact, though some are close to significance. Gender has a non-significant negative effect on Neuroticism, with a coefficient (B) of (-4.379) and a p-value greater than 0.05. This indicates that while gender does not significantly influence Neuroticism, the p-value is relatively close to the conventional threshold for significance. Age range presents a non-significant positive effect ($B = 1.884$, $p > 0.05$), suggesting that age does not significantly affect Neuroticism levels, but the result is near significance. The impact of obtaining a degree on Neuroticism is also non-significant, with a positive effect ($B = 2.11$, $p > 0.05$), indicating that educational level does not significantly influence Neuroticism. Academic discipline displays a non-significant negative effect ($B = -0.715$, $p < 0$), suggesting that the field of study does not significantly affect Neuroticism.

These findings indicate that gender, age range, degree, and academic discipline do not have significant effects on Neuroticism, although gender and age range are noted to be on the verge of reaching statistical significance. The overall model has an R Square of 0.046 and an Adjusted R Square of 0.025, indicating a modest explanatory power. These values suggest that while the model explains some variance in Neuroticism, the overall explanatory power of the model is somewhat limited. This indicates that other factors not included in the model might be more influential in explaining variations in Neuroticism.

Table 16

Multiple Regression with Neuroticism as the Dependent Variable in Demographics

Predictor variable	Unstandardized		Standardized Coefficients Beta	t	Sig.
	Coefficients				
	B	Std. Error			
(Constant)	50.386	6.65		7.577	0
Gender	-4.379	2.847	-0.117	-1.538	0.126
Age Range	1.884	1.168	0.125	1.613	0.108
Degree	2.11	1.871	0.091	1.128	0.261
Academic Discipline	-0.715	0.607	-0.093	-1.177	0.241

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.046; Adj R Square: 0.025

4.4.2.2 Multiple Regression - Demographics and Learning Modes. The multiple regression findings presented in Table 17 examine the relationship between RO as the dependent variable and demographic variables as the independent variables.

The analysis investigates the impact of gender, age range, degree, and academic discipline on RO, revealing varying degrees of influence across these factors. Gender shows a significant positive effect on RO, with a coefficient (B) of 1.656 and a p-value less than 0.05, indicating that gender does indeed influence RO. The positive coefficient (B) of 1.656 suggests that females (coded as 2) score, on average, 1.656 points higher on the RO scale compared to males (coded as 1). In contrast, age range has a non-significant negative effect (B = -0.495, $p < 0.1$), suggesting that age range does not have a substantial impact on RO. Similarly, degree and academic discipline both show non-significant positive effects on RO, with coefficients (B) of 0.301 ($p > 0.5$) and 0.159 ($p > 0.05$), respectively, indicating that these factors do not significantly affect RO.

The overall model, with an R Square of 0.039 and an Adjusted R Square of 0.018, points to a modest fit, suggesting that while gender has a notable impact on RO, the contributions of age range, degree, and academic discipline are not significant in this model.

Table 17

Multiple Regression with RO as the Dependent Variable in Demographics

Predictor variable	Unstandardized		Standardized Coefficients Beta	t	Sig.
	Coefficients				
	B	Std. Error			
(Constant)	27.588	1.686		16.363	0
Gender	1.656	0.722	0.176	2.294	0.023
Age Range	-0.495	0.296	-0.13	-1.673	0.096
Degree	0.301	0.474	0.052	0.635	0.526

Academic	0.159	0.154	0.081	1.029	0.305
Discipline					

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.039; Adj R Square: 0.018

The multiple regression findings presented in Table 18 examine the relationship between CE as the dependent variable and demographic variables as the independent variables. The analysis explores the influence of gender, age range, degree, and academic discipline on CE, showing varied effects for each factor. Gender exhibits a non-significant negative effect on CE, with a coefficient (B) of -0.754 and a p-value greater than 0.05, suggesting that gender does not have a notable impact on CE. Similarly, age range also shows a non-significant negative effect ($B = -0.489$, $p > 0.05$), indicating that age range does not significantly influence CE. The effect of having a degree on CE is also non-significant, with a negative coefficient ($B = -0.079$) and a high p-value ($p > 0.05$), pointing out that the level of education, represented by the degree, does not affect CE. Academic discipline presents a marginally significant negative effect on CE, with a coefficient ($B = -0.289$) and a p-value less than 0.1, suggesting a slight but almost negligible impact of academic discipline on CE. This indicates that while the field of study may have a minimal influence on CE, it is not strong enough to be considered significant. The overall model has an R Square of 0.033 and Adjusted R Square of 0.012, which suggests a modest fit.

Table 18

Multiple Regression with CE as the Dependent Variable in Demographics

Predictor	Unstandardized	Standardized		
variable	Coefficients	Coefficients Beta	t	Sig.

	B	Std. Error			
(Constant)	34.029	1.867		18.223	0
Gender	-0.754	0.8	-0.072	-0.943	0.347
Age Range	-0.489	0.328	-0.116	-1.493	0.137
Degree	-0.079	0.525	-0.012	-0.15	0.881
Academic Discipline	-0.289	0.171	-0.134	-1.695	0.092

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.033; Adj R Square: 0.012

The Multiple Regression findings presented in Table 19 examine the relationship between AC as the dependent variable and demographic variables as the independent variables. The analysis examines the effects of gender, age range, degree, and academic discipline on AC, with the results indicating no significant impact across these variables. Gender has a non-significant negative effect on AC, with a coefficient (B) of -0.198 and a p-value greater than 0.05, suggesting that gender does not play a significant role in influencing AC. Age range presents a non-significant positive effect ($B = 0.143$, $p > 0.05$), indicating that the age of individuals does not significantly affect their propensity towards AC. Similarly, the level of education, as indicated by degree, shows a non-significant negative effect ($B = -0.108$, $p > 0.05$), pointing out that the educational attainment of individuals does not influence AC. Academic discipline displays a non-significant positive effect ($B = 0.262$, $p > 0.05$), suggesting that while there might be a slight tendency for academic discipline to influence AC, it is not significant enough to impact the model. This suggests that academic discipline, like gender, age range, and degree, does not have a significant effect on AC. The overall model has an R Square of 0.020 and Adjusted R Square of -0.001, which suggests a limited fit.

Table 19**Multiple Regression with AC as the Dependent Variable in Demographics**

Predictor variable	Unstandardized		Standardized Coefficients Beta	t	Sig.
	Coefficients				
	B	Std. Error			
(Constant)	28.86	1.741		16.577	0
Gender	-0.198	0.745	-0.021	-0.266	0.791
Age Range	0.143	0.306	0.037	0.469	0.640
Degree	-0.108	0.49	-0.018	-0.22	0.826
Academic Discipline	0.262	0.159	0.131	1.645	0.102

Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.020; Adj R Square: -0.001

The multiple regression findings presented in Table 20 examine the relationship between AE as the dependent variable and demographic variables as the independent variables. The analysis explores the influence of gender, age range, degree, and academic discipline on AE, revealing varied impacts. Gender shows a non-significant negative effect on AE, with a coefficient (B) of -0.703 and a p-value greater than 0.05, indicating that gender does not significantly influence AE. In contrast, age range demonstrates a significant positive effect ($B = 0.841$, $p < 0.05$), suggesting that age range notably impacts AE, with older individuals potentially engaging more in AE activities. Degree presents a non-significant negative effect ($B = -0.115$, $p > 0.05$), indicating that the level of education does not

significantly affect AE. Similarly, academic discipline shows a non-significant negative effect ($B = -0.131$, $p > 0.05$), suggesting that the field of study does not significantly influence AE.

This analysis highlights that among the factors examined, only age range has a significant positive impact on AE, while gender, degree, and academic discipline do not show significant effects on this dimension of learning style. The overall model has an R Square of 0.052 and Adjusted R Square of 0.031, which suggests a modest fit.

Table 20

Multiple Regression with AE as the Dependent Variable in Demographics

Predictor variable	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	29.522	1.635		18.061	0
Gender	-0.703	0.7	-0.076	-1.005	0.316
Age Range	0.841	0.287	0.226	2.932	0.004**
Degree	-0.115	0.46	-0.02	-0.25	0.803
Academic Discipline	-0.131	0.149	-0.069	-0.878	0.381

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

R Square: 0.052; Adj R Square: 0.031

4.4.3 Analysis of Variance (ANOVA)

This section aims to explore the relationship between demographics (gender, age range, degree, and academic discipline) and learning approaches (learning modes and learning styles), as well as demographics and behavioural outcomes (personality traits). In order to

investigate the potential influence of demographic variables on the different elements under learning approaches and behavioural outcomes, the ANOVA model was employed. The subsections below present the findings of the ANOVA tests, which shed light on the potential relationship among the variables of interest.

4.4.3.1 ANOVA – Demographics and Learning Modes. ANOVA was conducted to examine the impact of demographics on learning modes. The demographic variables taken into account were gender, age group, degree type (Bachelor's, Master's, and PhD), and academic discipline (Education, Architecture, Law, Business, Project Management, Informatics, Engineering, and Artificial Intelligence), whilst the different forms of learning modes were categorized as CE, RO, AC, and AE. The statistical measures of sum of squares (SS), degrees of freedom (df), mean square (MS), F-ratio (f), and significance (Sig.) were provided for each demographic variable in relation to the learning modes. The results are presented in Table 21 below.

In a detailed examination of the effects of gender, age range, degree type, and academic discipline on various learning modes, the analysis yielded insights into how these factors might influence learning preferences. Starting with gender, the analysis revealed no statistically significant effect on the learning modes of CE, AC, and AE, with F-values of 1.023 ($p > 0.05$), 0.332 ($p > 0.05$), and 0.03 ($p > 0.05$) respectively. However, RO presented a marginally significant effect, with an F-value of 3.566 and a p-value of 0.061 ($p < 0.1$), hinting at a slight impact of gender on this particular learning mode.

When analysing the impact of age range, no significant effects were observed across the learning modes, indicating that age range might not play a decisive role in determining learning style preferences. The closest association was found with AE, where the analysis showed a potential relationship with an F-value of 2.403 and a p-value less than 0.1, just

above the conventional significance threshold. Even though the result is considered significant ($p < 0.1$), it does not meet the stricter threshold often employed in similar analyses. Therefore, when significant effects are identified in the ANOVA, a post hoc analysis is usually carried out using a significance level of 0.05 to decrease the chance of Type I errors, which refers to identifying significant differences by random chance. However, as the p-value for the age range and AE relationship did not meet this stricter threshold, a post hoc analysis was considered unnecessary. This method aids in minimizing the risk of Type I errors, which are more common in post hoc tests due to multiple comparisons.

Regarding degree type, the ANOVA results indicated that this demographic does not significantly influence learning preferences, with F-values and p-values for CE, RO, AC, and AE indicating no meaningful variations across these educational qualifications. Lastly, the analysis also considered the impact of academic discipline on learning modes and similarly found no significant differences. The F-values and p-values for CE, RO, AC, and AE across various academic disciplines did not demonstrate any significant variations, suggesting that the field of study does not notably affect how students engage with different learning modes.

Table 21

ANOVA of Demographics and Learning Modes

Demographics	Predictor Variable	Sum of Squares	df	Mean Square	<i>f</i>	Sig.
Gender	CE	27.835	1	27.835	1.023	0.313
	RO	78.453	1	78.453	3.566	0.061*
	AC	7.768	1	7.768	0.332	0.565
	AE	0.631	1	0.631	0.03	0.864

Age Range	CE	173.479	4	43.37	1.616	0.172
	RO	84.305	4	21.076	0.944	0.440
	AC	115.113	4	28.778	1.24	0.296
	AE	198.255	4	49.564	2.403	0.051*
Degree	CE	2.068	2	1.034	0.038	0.963
	RO	20.489	2	10.244	0.457	0.634
	AC	57.468	2	28.734	1.235	0.293
	AE	23.209	2	11.604	0.543	0.582
Academic Discipline	CE	167.99	7	23.999	0.878	0.525
	RO	104.937	7	14.991	0.663	0.703
	AC	191.596	7	27.371	1.181	0.316
	AE	104.064	7	14.866	0.691	0.679

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

Source: Between Groups

4.4.3.2 ANOVA – Demographics and Personality Traits. ANOVA was conducted a second time, this time to examine the relationship between demographic variables and personality traits. The personality traits include Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. ANOVA here will explore the possible differences in personality traits across various demographic variables, offering insights into whether these traits vary significantly with factors such as age, gender, degree, academic discipline. The results are presented in Table 22 below.

The analysis exploring the impact of gender, age range, degree, and academic discipline on five personality traits, Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism, revealed varied influences across these factors. For gender,

the findings suggest no significant effect on any of the five personality traits. The F-values and p-values for Openness ($F(1) = 0.054$, $p > 0.05$), Conscientiousness ($F(1) = 0.051$, $p > 0.05$), Extraversion ($F(1) = 0.096$, $p > 0.05$), Agreeableness ($F(1) = 0.085$, $p > 0.05$), and Neuroticism ($F(1) = 0.486$, $p > 0.05$) indicate that gender does not significantly influence these traits. Age range, however, showed a significant effect on Openness ($F(4) = 3.299$, $p < 0.05$) and Agreeableness ($F(4) = 2.799$, $p < 0.05$), suggesting that as age varies, so do levels of Openness and Agreeableness, with no significant impact observed on Conscientiousness, Extraversion, and Neuroticism.

Regarding the degree type, no significant impacts were observed across all five personality traits, with p-values ranging from 0.164 to 0.850. This indicates that the level of educational attainment does not significantly affect the personality traits under investigation. Academic discipline presented a nuanced influence, with a slight but significant effect on Openness ($F(7) = 2.121$, $p < 0.05$) and a marginal effect on Agreeableness ($F(7) = 1.850$, $p < 0.1$), suggesting that the field of study might slightly influence these traits. However, Conscientiousness, Extraversion, and Neuroticism showed no significant effects related to academic discipline.

These findings highlight that while gender and degree do not significantly influence the five personality traits examined, age range and, to a lesser extent, academic discipline do impact certain traits. Specifically, age range significantly affects Openness and Agreeableness, and academic discipline shows a slight influence on Openness and potentially Agreeableness, pointing to the complexity of factors that contribute to personality development and expression.

Overall, the ANOVA results indicate significant effects of age range on the personality traits of Openness and Agreeableness. Marginal effects were observed in the academic

discipline on Openness and Agreeableness. However, gender and degree did not show any significant impact on personality traits.

Table 22

ANOVA of Demographics and Personality Traits

Demographics	Predictor Variable	Sum of Squares	df	Mean Square	<i>f</i>	Sig.
Gender	Openness	25.201	1	25.201	0.054	0.816
	Conscientiousness	15.201	1	15.201	0.051	0.821
	Extraversion	39.006	1	39.006	0.096	0.757
	Agreeableness	32.986	1	32.986	0.085	0.771
	Neuroticism	170.467	1	170.467	0.486	0.486
Age Range	Openness	5826.022	4	1456.506	3.299	0.012**
	Conscientiousness	1893.535	4	473.384	1.627	0.169
	Extraversion	2104.227	4	526.057	1.309	0.268
	Agreeableness	4155.224	4	1038.806	2.799	0.027**
	Neuroticism	2476.548	4	619.137	1.803	0.130
Degree	Openness	151.961	2	75.98	0.162	0.850
	Conscientiousness	148.411	2	74.205	0.25	0.779
	Extraversion	692.168	2	346.084	0.854	0.427
	Agreeableness	920.696	2	460.348	1.196	0.305
	Neuroticism	1265.763	2	632.881	1.827	0.164
Academic Discipline	Openness	6600.683	7	942.955	2.121	0.044*
	Conscientiousness	619.05	7	88.436	0.292	0.956

Extraversion	3308.869	7	472.696	1.176	0.319
Agreeableness	4838.455	7	691.208	1.85	0.080*
Neuroticism	3069.878	7	438.554	1.268	0.269

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

Source: Between Groups

A Post Hoc analysis using Tukey HSD is presented in Table 23 below. It was carried out by employing age range as the main demographic variable to compare different age groups against each other for each of the personality traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. This analysis aimed to examine significant differences between these age ranges. The analysis reveals significant differences in Openness between the 56+ age range and the 18-22 age group, with a p-value less than 0.05, suggesting a decrease in Openness as individuals age. In the case of Agreeableness, there was a notable increase in the 56+ age group compared to those aged 18-22, with a p-value less than 0.05, indicating that Agreeableness tends to increase with age. For Conscientiousness, Extraversion, and Neuroticism, no significant differences were observed across the different age ranges. This indicates that Openness and Agreeableness vary significantly with age, while the other personality traits remain more stable across different age groups.

Table 23

Post Hoc Analysis for Personality Traits with Age Range

Dependent Variable	(I) Age Range	(J) Age Range	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Interval	
						Lower Bound	Upper Bound

Openness	18-22	23-33	-5.486	4.334	0.712	-17.43	6.46
		34-44	-3.014	4.542	0.964	-15.53	9.5
		45-55	-14.395	5.357	0.06	-29.16	0.37
		56+	-17.053*	5.963	0.038	-33.48	-0.62
	23-33	18-22	5.486	4.334	0.712	-6.46	17.43
		34-44	2.471	4.164	0.976	-9	13.95
		45-55	-8.909	5.04	0.396	-22.8	4.98
		56+	-11.567	5.681	0.253	-27.22	4.09
	34-44	18-22	3.014	4.542	0.964	-9.5	15.53
		23-33	-2.471	4.164	0.976	-13.95	9
		45-55	-11.381	5.221	0.192	-25.77	3
		56+	-14.039	5.842	0.119	-30.13	2.06
	45-55	18-22	14.395	5.357	0.06	-0.37	29.16
		23-33	8.909	5.04	0.396	-4.98	22.8
		34-44	11.381	5.221	0.192	-3	25.77
		56+	-2.658	6.495	0.994	-20.55	15.24
	56+	18-22	17.053*	5.963	0.038	0.62	33.48
		23-33	11.567	5.681	0.253	-4.09	27.22
		34-44	14.039	5.842	0.119	-2.06	30.13
		45-55	2.658	6.495	0.994	-15.24	20.55
Conscientiousness	18-22	23-33	4.726	3.519	0.665	-4.97	14.42
		34-44	-1.67	3.688	0.991	-11.83	8.49
		45-55	-0.84	4.349	1	-12.82	11.14

		56+	-5.3	4.842	0.809	-18.64	8.04
		18-22	-4.726	3.519	0.665	-14.42	4.97
	23-33	34-44	-6.396	3.381	0.326	-15.71	2.92
		45-55	-5.566	4.092	0.654	-16.84	5.71
		56+	-10.026	4.612	0.194	-22.74	2.68
		18-22	1.67	3.688	0.991	-8.49	11.83
	34-44	23-33	6.396	3.381	0.326	-2.92	15.71
		45-55	0.83	4.239	1	-10.85	12.51
		56+	-3.63	4.743	0.94	-16.7	9.44
		18-22	0.84	4.349	1	-11.14	12.82
	45-55	23-33	5.566	4.092	0.654	-5.71	16.84
		34-44	-0.83	4.239	1	-12.51	10.85
		56+	-4.46	5.273	0.916	-18.99	10.07
		18-22	5.3	4.842	0.809	-8.04	18.64
	56+	23-33	10.026	4.612	0.194	-2.68	22.74
		34-44	3.63	4.743	0.94	-9.44	16.7
		45-55	4.46	5.273	0.916	-10.07	18.99
Extraversion		23-33	-8.041	4.135	0.298	-19.44	3.35
		34-44	-4.42	4.334	0.846	-16.36	7.52
	18-22	45-55	-7.59	5.111	0.574	-21.67	6.49
		56+	-9.994	5.69	0.402	-25.67	5.68
		18-22	8.041	4.135	0.298	-3.35	19.44
	23-33	34-44	3.622	3.974	0.892	-7.33	14.57

		45-55	0.451	4.809	1	-12.8	13.7
		56+	-1.953	5.421	0.996	-16.89	12.98
		18-22	4.42	4.334	0.846	-7.52	16.36
	34-44	23-33	-3.622	3.974	0.892	-14.57	7.33
		45-55	-3.17	4.982	0.969	-16.9	10.56
		56+	-5.575	5.574	0.855	-20.93	9.78
		18-22	7.59	5.111	0.574	-6.49	21.67
	45-55	23-33	-0.451	4.809	1	-13.7	12.8
		34-44	3.17	4.982	0.969	-10.56	16.9
		56+	-2.404	6.197	0.995	-19.48	14.67
		18-22	9.994	5.69	0.402	-5.68	25.67
	56+	23-33	1.953	5.421	0.996	-12.98	16.89
		34-44	5.575	5.574	0.855	-9.78	20.93
		45-55	2.404	6.197	0.995	-14.67	19.48
		23-33	-7.015	3.974	0.397	-17.96	3.93
		34-44	-9.875	4.165	0.128	-21.35	1.6
	18-22	45-55	-8.315	4.912	0.441	-21.85	5.22
		56+	-16.986*	5.468	0.018	-32.05	-1.92
Agreeableness		18-22	7.015	3.974	0.397	-3.93	17.96
		34-44	-2.86	3.818	0.945	-13.38	7.66
	23-33	45-55	-1.3	4.621	0.999	-14.03	11.43
		56+	-9.971	5.209	0.314	-24.32	4.38
	34-44	18-22	9.875	4.165	0.128	-1.6	21.35

		23-33	2.86	3.818	0.945	-7.66	13.38
		45-55	1.56	4.787	0.998	-11.63	14.75
		56+	-7.111	5.356	0.674	-21.87	7.65
		18-22	8.315	4.912	0.441	-5.22	21.85
	45-55	23-33	1.3	4.621	0.999	-11.43	14.03
		34-44	-1.56	4.787	0.998	-14.75	11.63
		56+	-8.671	5.955	0.592	-25.08	7.74
		18-22	16.986*	5.468	0.018	1.92	32.05
	56+	23-33	9.971	5.209	0.314	-4.38	24.32
		34-44	7.111	5.356	0.674	-7.65	21.87
		45-55	8.671	5.955	0.592	-7.74	25.08
Neuroticism	18-22	23-33	2.372	3.823	0.972	-8.16	12.91
		34-44	-0.509	4.007	1	-11.55	10.53
		45-55	-9.12	4.725	0.305	-22.14	3.9
		56+	-3.678	5.26	0.956	-18.17	10.82
	23-33	18-22	-2.372	3.823	0.972	-12.91	8.16
		34-44	-2.881	3.673	0.935	-13	7.24
		45-55	-11.492	4.446	0.077	-23.74	0.76
		56+	-6.05	5.011	0.747	-19.86	7.76
	34-44	18-22	0.509	4.007	1	-10.53	11.55
		23-33	2.881	3.673	0.935	-7.24	13
		45-55	-8.611	4.605	0.337	-21.3	4.08
		56+	-3.169	5.153	0.973	-17.37	11.03

	18-22	9.12	4.725	0.305	-3.9	22.14
45-55	23-33	11.492	4.446	0.077	-0.76	23.74
	34-44	8.611	4.605	0.337	-4.08	21.3
	56+	5.442	5.729	0.877	-10.34	21.23
	18-22	3.678	5.26	0.956	-10.82	18.17
56+	23-33	6.05	5.011	0.747	-7.76	19.86
	34-44	3.169	5.153	0.973	-11.03	17.37
	45-55	-5.442	5.729	0.877	-21.23	10.34

Note. This Post Hoc analysis is run by Tukey HSD

4.4.4 Binary Logistic Regression Analysis

A binary logistic regression analysis was carried out to investigate the connections between demographic variables (Gender, Age Range, Degree, and Academic Discipline) and KLS (Assimilating, Diverging, Accommodating, and Converging), with the findings documented in Table 24. This analysis brought to light several key insights regarding how various factors may influence learning style preferences.

4.4.4.1 Binary Logistic Regression – Demographics and Learning Styles. Gender emerged as a significant predictor for the 'Diverging' and 'Accommodating' learning styles, with coefficients of ($\beta = 0.796$ and $\beta = -1.134$) respectively, both significant at the $p < 0.05$ level. This indicates a clear influence of gender differences on these specific learning preferences, suggesting that gender may play a crucial role in determining how individuals prefer to learn.

Age Range, on the other hand, did not exhibit significant predictive power for any learning styles, suggesting that age may not be a determining factor in learning style preference within the context of this study. Similarly, the variable 'Degree' largely did not

predict learning style preferences, with a weak but negligible association noted only with the 'Converging' style ($\beta = 0.371$), hinting at a slight influence.

Academic Discipline showed significant relationships with 'Converging' ($\beta = 0.179$, $p < 0.1$) and 'Accommodating' ($\beta = -0.223$, $p < 0.05$) learning styles. This suggests that the field of study might influence an individual's learning style preference, highlighting the role of academic discipline in shaping how students prefer to engage with learning material.

In summary, the findings from the binary logistic regression analysis reveal complex interplays between personality traits and learning style preferences. Gender and academic discipline emerged as notable predictors across different learning styles. Given these observed variations, it may be necessary to modify teaching strategies to properly meet the needs of a diverse student body. Findings by Delamont (1999); Golombok and Fivush (1994), and Wilkinson and Marrett (1985) emphasize the necessity for educators to be aware of these dynamics to create an inclusive learning environment that acknowledges and supports diverse learning styles across genders.

Table 24

Binary Logistic Regression

Variable	Diverging	Assimilating	Converging	Accommodating
Gender	.796**	0.229	-0.394	-1.134**
Age Range	-0.139	0.12	-0.068	0.056
Degree	0.109	-0.085	0.371	-0.465
Academic Discipline	0.067	0.025	.179*	-.223**
Constant	1.900	-2.550	-6.290	0.010

-2 Log likelihood	180.831	221.295	133.026	125.111
Cox & Snell R Square	0.150	0.120	0.075	0.185
Nagelkerke R Square	0.211	0.164	0.119	0.242

Note. Significance levels at *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.1$

4.4.5 Summary of Q2 Key Findings

To address the second research question, which states: “Do demographic variables contribute to differences among learning approaches and behavioural outcomes of higher education students in the UAE?”, four statistical measures were used. These include: Descriptive Statistics, ANOVA, Multiple Regression Analysis, and Binary Logistic Regression Analysis. The ANOVA analysis investigated how demographic variables such as gender, age range, degree type, and academic discipline influence learning modes (CE, RO, AC, AE) among higher education students in the UAE. The results showed minimal significant effects of demographics on learning modes. For instance, gender displayed a marginally significant effect on RO with a p-value of 0.061, suggesting a slight influence on this learning mode possibly due to cognitive and emotional processing differences. However, other learning modes like CE, AC, and AE showed no significant differences across gender, age, degree type, or academic discipline. This suggests that while demographic factors might influence certain aspects of learning approaches, they do not have a broad or consistent impact across different learning modes.

The multiple regression analysis aimed to quantify the impact of demographics on learning modes and behavioural outcomes, specifically personality traits. The analysis revealed that demographic variables had limited influence on both learning modes and personality traits. For learning modes, gender had a small but significant positive impact on RO, with no significant effects found for other learning modes or demographic factors.

Regarding personality traits, the significant findings included age showing a positive relationship with Openness and Agreeableness, indicating that these traits tend to increase with age. However, other personality traits like Conscientiousness, Extraversion, and Neuroticism showed no significant impacts from any demographic variables. This suggests that while certain demographic characteristics like age can influence specific personality dimensions, overall, demographic variables have limited predictive power on learning approaches and behavioural outcomes in the sample studied.

The binary logistic regression analysis in the study examined how demographic variables such as gender, age range, degree, and academic discipline impact KLS among higher education students in the UAE. The results revealed that gender significantly predicts preferences for the Diverging and Accommodating learning styles, suggesting that males and females may have distinct preferences in their learning approaches. Specifically, females are more likely to prefer Diverging styles, which involve observation and reflection, while males may lean towards Accommodating styles, favouring active engagement and practical application. No significant predictive power of age range on any of the learning styles was observed, indicating that within this context, age does not determine learning style preference. Academic discipline showed some influence on Converging and Accommodating styles, suggesting that the field of study could shape learning preferences. This analysis highlights the role of gender and academic discipline in determining learning styles, reflecting the importance of these demographic factors in educational settings.

4.6 Research Question 3

The third and final research question takes on a qualitative approach in order to address the research question “To what extent do the views of higher education students correspond with personality traits and learning approaches relevant to the UAE?”. As detailed in the

methodology section, this research question has been analysed by employing thematic analysis. This type of analysis revealed numerous significant themes that provide insights into the perspectives of higher education students in the UAE on their personality traits and learning approaches. Moreover, these themes provide a foundation for understanding the complex interplay between students' learning preferences, personality traits, and their educational experiences within the context of the UAE.

This section presents the results of the thematic analysis regarding the data collected from the semi-structured interviews with students at three academic degrees: Bachelor's, Master's, and PhD. Thematic analysis was conducted for each degree separately, with an additional overall section combining students from all three levels. Despite the statistical findings suggesting limited influence of degree type on personality traits and learning styles, its inclusion in the study is justified as it reflects how academic progression shapes these variables. Research indicates that personality traits such as openness and conscientiousness evolve with academic levels, becoming more pronounced in Master's and PhD students due to the demands of advanced study (Komarraju et al., 2011; McCrae & Costa, 2003; Lovitts, 2005). Similarly, learning styles shift from hands-on experimentation at the undergraduate level to self-directed and abstract conceptualization at the doctoral level, as per Kolb's experiential learning theory (Kolb, 1984; Entwistle & Peterson, 2004; Peterson et al., 2005). Recognizing these patterns aids in aligning educational strategies with students' developmental stages.

The upcoming sections present the findings of the thematic analysis, organized in table format. The first section begins by describing the demographics of the interview participants, detailing their gender, age group, degree type, and academic discipline. Subsequent tables

present the main themes and sub-themes derived from the thematic analysis, with each theme illustrated by examples and direct quotes from the interviews.

4.6.1 *Participants' Demographics*

A total of 19 students were interviewed. eight were Bachelor's degree students, six were Master's degree students, and five were PhD degree students. Out of 19 students, nine were females and ten were males. The below Table 25 provides further details on interviewed participants' demographics.

Table 25

Interviewed Participants' Demographics

Classification	Gender	Age Range	Degree	Academic Discipline
Student 1	Female	18-22	Bachelors	Computer Science – Artificial Intelligence
Student 2	Male	18-22	Bachelors	Business – Accounting & Finance
Student 3	Male	18-22	Bachelors	Electro-Mechanical Engineering
Student 4	Female	18-22	Bachelors	Business Management
Student 5	Female	18-22	Bachelors	Computer Science – Cybersecurity
Student 6	Female	18-22	Bachelors	Law
Student 7	Male	34-44	Bachelors	Business Management
Student 8	Male	23-33	Bachelors	Business Management
Student 9	Female	23-33	Masters	Master of Business Administration (MBA)
Student 10	Female	34-44	Masters	Education
Student 11	Male	23-33	Masters	Master of Business Administration (MBA)
Student 12	Male	45-55	Masters	Master of Business Administration (MBA)
Student 13	Male	23-33	Masters	MSc in Engineering Management
Student 14	Male	23-33	Masters	MSc in Structural Engineering
Student 15	Female	34-44	PhD	Education
Student 16	Female	34-44	PhD	Education
Student 17	Female	23-33	PhD	Education
Student 18	Male	45-55	PhD	Business
Student 19	Male	34-44	PhD	Computer Science

4.6.2 Bachelor's Degree Students

Four main themes arose from interviewing eight bachelor's degree students:

Personality Adaptation, Learning Engagement, Gender Dynamics, and Development Over Time. These themes are presented in Table 26 below.

Table 26

Bachelor Students' Themes

Main Theme	Sub-Themes	Description	Direct Quotes
Personality Adaptation	Dual Persona	When in an academic versus personal setting, students present different identities and modify their behaviour to conform to social norms (e.g., more formal in class, relaxed at home).	"At university I'm more guarded and I guess more formal... At home it's a lot more laid-back. I'm much more casual and you could say a bit more outspoken with my family and friends." – Bachelor Student 2
	Impact on Social Interaction	Personality traits (being introverted/extroverted) affect how students interact in different settings, which affects their social energy and preferences for group sizes.	"I think I'm a bit of both but leaning more towards introversion. I enjoy social gatherings and can be quite outgoing in familiar settings but large groups or meeting new people can feel scary." – Bachelor Student 3
Learning Engagement	Active vs. Passive Learning	Some students prefer hands-on learning over theoretical learning, with many students indicating that they have a better understanding of the concepts by following practical application of the concepts.	"Absolutely I learn best when I can get my hands dirty, you know? I'm the kind of person who really gets concepts quickly when I can touch and do stuff with the materials." – Bachelor Student 3
	Individual vs. Collaborative Learning	Personality traits (being introverted/extroverted) reflect how students prefer to work on projects, whether in groups or individually.	"For instance, after a lecture or a group meeting, I need some time alone to recharge. I prefer one-on-one interactions or small groups where I can have deeper conversations." – Bachelor Student 1
Gender Dynamics	Influence on Learning and Interaction	Some students believe that their gender affects how they are treated or expected to behave in academic settings, which influences their participation and performance.	"As a woman, I've often felt that there's this expectation to be more agreeable and nurturing. While these aren't bad traits, it has sometimes led me to prioritize others' needs over my own, especially in group settings." – Bachelor Student 1

Developme nt Over Time	Evolving Self- Perception and Confidence	As students advance through their studies, they observe a growth in confidence and a shift in how they view themselves and their academic abilities.	"I think I've become more self-aware and reflective. When I was younger I used to react more impulsively but now I take time to think things through." – Bachelor Student 3
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4.6.3 *Master's Degree Students*

Three main themes arose from interviewing six Master's degree students: Integration of Theories and Practice, Personality Traits, and Learning Styles. These themes are presented in Table 27 below.

Table 27

Master's Students' Themes

Main Theme	Sub-Themes	Description	Direct Quotes
Integration of Theories and Practice	Application of Knowledge	Employing theoretical knowledge in practical ways in real-world situations.	"My learning has become more focused on practical applications rather than theoretical knowledge." – Masters Student 2
	Professionalism vs. Personality	Maintaining a professional manner in educational settings while exhibiting more laid-back personal qualities at home.	"At university, I'm all about being professional, really focused and super analytical... But at home, I totally relax. I'm a lot more laid-back and funnier." – Masters Student 1
	Introversi on and Extroversion	The impact of one's extroversion or introversion on participation in necessary social activities.	"I identify more as an introvert, which suits the research aspect of my studies... But like you know, I learned to enjoy more extroverted activities such as attending conferences.." – Masters Student 1
Personality Traits	Organization and Spontaneity	The importance of spontaneity in personal life versus the need for organization in academic settings.	"In my master's program, being organized is not just a preference, it's a necessity... However, I do appreciate spontaneity in my personal life; it provides a necessary balance." – Masters Student 1
	Resilience	Qualities that help students overcome obstacles in their academic and personal lives.	"I've found resilience to be key; tackling a thesis project really tests your limits." – Masters Student 4
	Openness	Openness to investigate new concepts and experiences within academic environments.	"Being open to new ideas has really improved my learning experience." – Masters Student 5
	Conscientiousness	An attribute of the personality that shows organization, punctuality, and a serious approach to learning.	"I stay on top of all my coursework and projects because I'm naturally very organized." – Masters Student 1

Learning Styles	Collaborative Learning	Preference for understanding and remembering information through peer collaboration.	"I thrive in group settings; it's fun to bounce ideas off classmates." – Masters Student 3
	Visual Learning	An approach to learning that places a strong emphasis on spatial awareness and visual aids.	"Visual aids like charts and graphs help me grasp complex concepts much quicker." – Masters Student 2
	Practical Application	A focus on improving understanding by using learned theories in real-world situations.	"For me, learning has to be hands-on. I absorb so much more when I can apply what I've learned in real-world situations." – Masters Student 6

4.6.4 *PhD Degree Students*

Four main themes arose from interviewing five PhD-level students: Academic Journey, Learning and Teaching Methods, Personality Traits, and Learning Styles. These themes are presented in Table 28 below.

Table 28***PhD Students' Themes***

Main Theme	Sub-Themes	Description	Direct Quotes
Academic Journey	Learning Adaptability	The academic growth journey, highlighting the evolution of adaptability in learning strategies over time.	"Oh, it's very important to be adaptable. Because even as a teacher, I make sure to adapt my teaching methods to fit different student." – PhD Student 1
Learning and Teaching Methods	Innovative Practices	The emphasis on the incorporation of innovative teaching and learning methods within academic research.	" And using interactive digital tools in our research has revolutionized the way we can teach complex topics." – PhD Student 1
	Critical Thinking and Analysis	The development of analytical techniques and critical thinking abilities through advanced academic training.	"PhD study has significantly sharpened my analytical skills, teaching me to critically evaluate information and theories critically." – PhD Student 4
Personality Traits	Openness	Adaptability to the various challenges of PhD research depends on Openness to experience.	"Exploring new methods and ideas has really changed the way I approach my research." – PhD Student 3
	Determination	The will to persevere through difficult research projects to their completion.	"It's my determination that keeps me going through even the most difficult phases of my PhD." – PhD Student 1
	Reflective Learning	A preference to spend time to think thoroughly about learning material deeply.	"I prefer to learn by taking time to deeply reflect on each topic, integrating it thoroughly into my existing knowledge." – PhD Student 5
Learning Styles	Problem-based Learning	Emphasis on using problem-solving techniques from the real world to interact with academic content.	"I find that I learn best when applying concepts to solve practical problems that matter in the real world." – PhD Student 2

4.6.5 Combined Degrees.

Four main themes arose from combining all degrees together: Personality Traits, Learning Styles, Gender Influences, and Technological Integration. These themes are presented in Table 29 below.

Table 29***Combined Students' Themes***

Main Theme	Sub-Themes	Description	Direct Quotes
Personality Traits	Extroversion vs. Introversion	Discusses how extroverted or introverted tendencies affect student interactions.	"Being extroverted has made me favour interactive learning environments..." – Bachelor Student 2
	Adaptability in Different Settings	Students describe how their personalities adapt between academic and personal environments.	"At university I'm analytical, at home I'm laid-back..." – Masters Student 1
	Influence on Group Dynamics	Personality traits influencing roles within group work.	"My assertiveness makes me take leadership in groups..." – PhD Student 3
Learning Styles	Preference for Learning Environments	How preferences for solo or group learning impact academic success.	"I prefer self-study over group sessions, it fits my introverted nature..." – PhD Student 2
	Active vs. Reflective Learning	Differences between active engagement and reflective observation in learning processes.	"I learn best through hands-on experience..." – Masters Student 4
	Theoretical vs. Practical Learning	How students balance or prefer theoretical knowledge versus practical application.	"Applying theories in real-world scenarios enhances my learning..." – PhD Student 3
Gender Influences	Perceptions and Expectations	How gender expectations affect student participation and self-perception.	"As a woman in CS, I feel pressure to prove myself..." – Bachelor Student 1
	Influence on Learning and Personality	Exploration of how gender might influence learning styles and personality traits.	"Gender shapes my interactions and how I'm perceived in group work..." – PhD Student 1
Technological Integration	Use of Digital Tools in Learning	How students utilize technology to enhance learning experiences.	"Using apps for organizing my study has been a game changer..." – PhD Student 5
	Online Learning Adaptability	Students' adaptation to online learning environments due to recent global events.	"Switching to online classes required adjusting my learning methods..." – Bachelor Student 6

4.6.6 Summary of Q3 Key Findings

To address the third research question, which states: “To what extent do the views of higher education students correspond with personality traits and learning approaches relevant to the UAE?”, thematic analysis was employed to explore this. The thematic analysis of Bachelor's degree students in the UAE revealed that personality adaptation was prevalent, with students often presenting different personas in academic versus personal settings to align with expected social norms. This adaptability extends to social interactions, where personality traits such as introversion and extroversion significantly influenced preferences for social engagement. In terms of learning, there was a strong preference for active over passive learning methods, with students favouring hands-on experiences that allowed direct interaction with learning materials. Additionally, the ability to manage academic pressure through various coping strategies like yoga and mindfulness, and balancing creative versus analytical thinking, were key to their academic experience. Gender dynamics also played a significant role, influencing participation and performance in academic settings.

For Master's degree students, the thematic analysis underscored a shift in learning preferences from theoretical absorption to practical application, reflecting a maturity that aligns with professional standards. The role of professionalism was emphasized, with students expected to transition from being learners to emerging experts in their fields. Gender dynamics continued to influence educational experiences, impacting both personal development and professional growth. The balance between personal and academic life was crucial, with students employing a mix of meticulous planning and spontaneity to manage their responsibilities effectively. Additionally, the ability to adapt and be flexible in the face of academic and personal demands was highlighted as essential for success.

PhD students exhibited a significant focus on applying theoretical knowledge to real-world problems, enhancing both their academic and practical understanding. The journey through a PhD program was marked by increased resilience and self-reflection, contributing to personal growth and deeper emotional intelligence. The academic environment, including interactions in seminars and group projects, played a crucial role in shaping their advanced learning approaches and personal development. Mentorship and support were critical, providing guidance through the complex landscape of academic research. Innovations in learning and teaching methods, such as the use of interactive digital tools, were pivotal in revolutionizing the approach to complex topics.

Finally, the combined analysis of all degrees highlighted the critical role of personality traits in shaping learning experiences and outcomes. Extroversion and introversion significantly influenced students' preferences for learning environments, with extroverted students thriving in interactive settings while introverts preferred solitary study environments. Adaptability in different settings was essential, which allowed students to manage their roles and interactions effectively within academic collaborations. The influence of gender on learning and personality was profound, and affected how students were perceived and interacted in group settings. Overall, the findings emphasized the need for educational strategies that are tailored to accommodate the diverse personalities, learning styles, and life circumstances of students in the UAE.

Chapter 5: Discussion

5.1 Introduction

This chapter investigates the relationship between the Big Five Personality Traits (BFPT) and Kolb's Experiential Learning Theory (KELT) among higher education students in Dubai, UAE. The BFPT include five main elements: Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. KELT, on the other hand, encompasses both learning modes such as Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualization (AC), and Active Experimentation (AE), and learning styles such as Accommodating, Assimilating, Diverging, and Converging. This chapter explores how personality traits might be integrated with learning approaches within the educational sector. It also highlights the importance of recognizing how demographic factors influence both personality traits and learning approaches independently. Through the combined analysis of both qualitative and quantitative data, this study builds on theoretical foundation for incorporating psychological traits and demographic factors into educational models. The statistical measures employed in this study helped to examine the relationship between the BFPT and KELT. Additionally, these two constructs were analysed separately against demographic variables such as gender, age group, degree type, and academic discipline. Moreover, the detailed narratives derived from the thematic analysis provided insights into the intricate factors involved in investigating the relationship between the aforementioned variables. This integrated approach aims to improve the alignment of teaching methods with the varied needs of students in environments such as the UAE, thus enriching the existing literature. The empirical findings draw connections to theoretical frameworks discussed in Chapter 2 and ensure that the results are consistent with prior research, providing a

comprehensive analysis of how the findings align with established theories. This process not only confirms the study's validity but also highlights any new insights or contradictions to existing educational theories. Overall, this chapter provides a thorough examination and deep analysis of the interconnections among personality traits, learning styles, and demographic factors within the context of higher education in the UAE. The upcoming sections are divided into three sections: 5.1 discusses the quantitative results of the first research question, 5.2 discusses the discusses the quantitative results of the second research question, and 5.3 discusses the qualitative results of the third research question.

5.2 Research Question 1 Discussion

This section addresses the first research question by discussing the findings related to the relationship between the BFPT and KLA. The significant findings from the statistical measures of Pearson Correlation, Multiple Regression, and Binary Logistic Regression, as reported in Chapter 4, are thoroughly discussed here, and are supported and aligned with existing literature. This section is divided into two parts. The first part, 'Personality Traits and Learning Modes', presents analyses conducted using Pearson Correlation and Multiple Regression. Each subsection includes a summary table that highlights whether findings confirmed or contradicted previous work and identifies any novel insights. The second part, 'Personality Traits and Learning Styles', explores analyses conducted using Pearson Correlation and Binary Logistic Regression, with each subsection also accompanied by a summary table to provide a clear overview of confirmations, contradictions, and novel contributions.

5.2.1 *Personality Traits and Learning Modes*

The Correlation analysis for Openness against RO was reported as having a statistically significant negative weak relationship (as shown in Table 30). This suggests that

students with lower levels of Openness might be more inclined toward RO. Individuals with lower levels of Openness are usually more conservative and take less risks. Those who utilize RO, on the other hand, rely on observations and reflections on past experiences. While higher levels of Openness oppose RO, it makes sense that lower levels of Openness can be associated with this learning mode. By reflecting on their past experiences instead of engaging with newer experiences unfamiliar to them, these students can absorb knowledge at their own pace. This is in line with RO, which prefers predictability and stability; and this allows students to further expand on their understanding of new knowledge without the stress and anxiety often accompanied with immediate actions. Ultimately, such students might discover ease and consistency in what they already know, which makes RO a more suitable and preferred learning mode. Hence, the justification of students ranking lower in Openness preferring RO aligns well with the natural inclinations of RO learners. It is important to note that while this speculation can be valid in explaining the connection between Openness and RO, the weak relationship of this relationship implies that other factors might have played a stronger role in affecting these variables separately. To the best of the researcher's knowledge, this is the first study to investigate the correlation between Openness and RO. The significance (albeit a weak one) between the two variables in Pearson Correlation was not mirrored in Multiple Regression. Several factors can explain this discrepancy and are important to consider in understanding the dynamic of this relationship. Firstly, Pearson Correlation measures the linear relationship between two variables, and provides a measure of strength and direction of correlation that exists between two distinct variables. In this case, it identified a weak negative correlation, suggesting that as Openness decreases, RO tends to increase slightly. However, this correlation does not account for the influence of other variables that might be interacting with or affecting this relationship (Cohen et al., 2003). This is where Multiple Regression

analysis can be useful, since it goes beyond the bivariate relationships examined by correlation analysis by considering multiple independent variables simultaneously. This analysis assesses the unique contribution of each variable to the predictive power of the model while controlling for other factors (Tabachnick & Fidell, 2013). The lack of significance in the multiple regression analysis in the study suggests that when other variables are considered, Openness does not provide significant predictive value for RO. This could indicate that the effect of Openness on RO is suppressed by the other personality trait variables included in the model. It is also possible that the weak relationship identified in the correlation analysis does not hold under the analysis of a more comprehensive model that includes multiple interacting factors. Therefore, while the correlation provided initial insights into the relationship between Openness and RO, the multiple regression analysis offers a clearer understanding by highlighting the potential influence of other variables. This suggests a need for further research to explore these dynamics more deeply, possibly by examining different combinations of variables or using alternative statistical models that can handle complex interactions and non-linear relationships.

The Correlation analysis for Openness against AE was reported as being statistically significant, indicating a moderately positive relationship between the two variables. This suggest that students who ranked higher on Openness were more likely to utilize AE as their preferred learning mode. This finding is consistent with the Malaysian study conducted by Ibrahimoglu et al. (2013), who discovered that individuals who ranked higher on Openness had a preference for the learning mode AE. Further supporting the significance of this relationship are the findings from Multiple Regression analysis, which demonstrated a significant positive relationship between Openness and AE. This can be explained by the fact that both factors involve a tendency to explore and experiment (Kolb, 1984; McCrae & Costa,

1997). Those with higher levels of Openness are naturally inclined to seek new experiences and challenge the traditional methods of thinking, which corresponds well with the AE learning mode, as this type of learning requires individuals to explore new ways of doing things and actively engage in what they learned. The relationship between the two factors is further supported by findings in the literature (Kaufman & Gregoire, 2016) that associate Openness with adaptive and exploratory behaviours across multiple settings.

The consistency of findings across the two statistical methods suggests a strong relationship that is not simply coincidental, but rather indicative of a crucial psychological tendency. Additionally, the combination of correlation and multiple regression analysis solidifies the understanding of the relationship between Openness and AE. The correlation analysis examined the linear relationship, while the regression analysis confirmed that Openness is indeed a significant predictor of AE, even whilst considering the potential influencing effects of other variables. This supports studies that suggest how personality traits play an important role in determining learning preferences, as they shape how individuals approach and engage with new information and experiences.

The Correlation analysis for Conscientiousness against CE was reported as having a statistically significant weak negative correlation. This suggests that students who ranked higher on Conscientiousness might be less inclined to engage in CE as their preferred learning mode. According to Costa and McCrae (1992), conscientious individuals tend to demonstrate traits such as attention to detail, careful planning, and prefer structured activities. Within this context, such traits can potentially make students feel less comfortable with the unpredictable, hands-on, and spontaneous nature of the CE learning mode. Additionally, the results from Multiple Regression analysis between Conscientiousness and CE also presented a statistically significant negative but weak effect, indicating that higher levels of Conscientiousness may

lead to lower levels of CE. These statistically significant coefficients across both analytical methods highlights the relationship between the two factors and implies that the observed relationship is not due to chance and that Conscientiousness plays an important role in determining the preference for CE. Such findings are crucial for educators, suggesting that personality assessments could serve as vital tools for designing more personalized and effective educational strategies that are tailored to students with different learning preferences. In this case, this approach could potentially maximize learning efficacy by aligning the natural predispositions of CE learners in order to engage more effectively with learning preferences that suit their Conscientiousness personality traits.

The Correlation analysis for Conscientiousness against AC was reported as being statistically significant, indicating a weak but positive correlation between the two variables. This suggests that students who ranked higher on Conscientiousness were more likely to prefer AC as their preferred learning mode. This finding is consistent with the literature, where Judge and Ilies (2002) reported that people who ranked high in Conscientiousness were more inclined to favour AC as a learning mode, which entails logical thinking and structured planning. When it comes to students, they tend to prefer classrooms that are well-organized with a thoroughly planned syllabus and learning materials. Findings from multiple regression analysis exhibit a significant positive effect, underscoring a strong and positive relationship with AC, which further highlights the connection of Conscientiousness with AC. According to Costa and McCrae (1992), people who exhibit traits related to Conscientiousness such as meticulous planning, organization, and reliability, usually conform with learning environments that emphasize abstract thinking and systematic analysis. Moreover, this significant positive relationship can be explained by the theoretical framework introduced by Kolb (1984) which describes people suited to the AC learning mode to prefer methodical thinking and structured

problem-solving. Barrick and Mount (1991) and Judge and Ilies (2002) further support the findings of this study by reporting how Conscientiousness as a personality trait impacts performance in settings that require strategic and structured thinking, thus fortifying the link between Conscientiousness and AC. Overall, the combined findings of Pearson correlation and Multiple Regression provide a comprehensive understanding of how students with the Conscientiousness personality trait have a strong preference for the AC learning mode.

The Correlation analysis for Extraversion against RO was reported as having a statistically significant yet weak negative correlation between the two variables. This suggests that students who ranked higher in Extraversion might be less likely to engage in RO as a learning mode. This finding can be explained by the very nature of Extroversion, where individuals typically thrive on active engagement and social interactions (Costa & McCrae, 1992). Given that the learning mode of RO relies on reflection and introspection (Kolb, 1984), it makes sense that students ranking higher on extroversion are less likely to utilize this type of learning mode. Extroverted students might find the passive nature of RO less appealing to them, and are more inclined to engage in learning environments that require interaction and hands-on experiences rather than solely on reflection and analysis. The results of the multiple regression analysis, however, showed that Extraversion had a non-significant negative effect. The discrepancy between the significant correlation and the non-significant outcome in multiple regression between the two variables draws attention to an essential aspect in statistical analyses. The correlation analysis identified a statistically significant negative relationship, suggesting that extroverted students tend to engage less in reflective and observational learning, which is aligned with the extroverted preference for active and social interactions rather than introversion and introspection (Costa & McCrae, 1992; Kolb, 1984). However, when considering the multiple regression analysis, the significance of Extraversion's

effect on RO dissipates; this can be due to various statistical and methodological reasons. Firstly, multiple regression takes into consideration the influence of other variables that might also affect RO, potentially diluting or overshadowing the effect of Extraversion alone. This inclusion of additional predictors can control for intervening variables, and while this can offer a more complete picture and understanding of the factors influencing RO, it can also lead to a suppression effect where the true impact of one variable is concealed when other variables are controlled (Cohen et al., 2003). Secondly, this discovery might suggest that the impact of Extraversion on RO is not strong enough to assert itself independently when other variables of personality are considered. Moreover, the weak negative correlation might have been diluted with other stronger personality factors in multiple regression. This implies that the relationship between personality traits and learning modes is complex and influenced by numerous factors, and not just by a single aspect of personality trait. Overall, this analysis stresses the importance of using multiple regression to separate the unique contributions of individual variables in the presence of others. It also highlights the need for careful interpretation of correlation results, which might suggest some relationships, while simple, can still be influenced by broader and more complex interactions. Additionally, it is important to understand that correlation does not imply causation. And in order to establish a stronger and potentially causal relationship between variables, further analysis is necessary.

The Correlation analysis for Extraversion against AE was reported as having a statistically significant but weak positive correlation. This suggests that students who scored higher on Extraversion were more likely to engage in AE as their preferred learning mode. This finding is consistent with a study conducted by Ibrahimoglu et al. (2013), who stated that extroverted individuals were more likely to adopt the learning mode of AE. Another study by Furnham (1992) reported a correlation between Extroversion and AE, since students who are

social and outgoing tend to actively interact with the outside world, experiment with new things, and learn from real-world implications. These findings, however, did not align with those from multiple regression analysis, where results indicated that the effect of Extraversion on AE was not significant. The lack of significance in the multiple regression analysis for Extraversion's effect on AE can be explained through several statistical and theoretical perspectives. In multiple regression analysis, the presence of other variables can dilute the influence of a single predictor like Extraversion. Theoretically, while extraversion may naturally promote student engagement in more socially interactive learning environments, its influence on AE might be moderated by other personality factors. For instance, in this study, Openness to Experience played a more significant role in determining a student's propensity to engage in AE, and potentially could have overshadowed the influence of Extraversion. Furthermore, the learning environment itself can also impact the relationship between Extraversion and AE. If the educational setting or even the specific learning tasks do not involve interactive, experiential activities, even students ranking higher in extroversion might not display a strong engagement in AE (Komarraju et al., 2009). Overall, while individual personality traits like Extraversion are significant, their effects often depend on the interaction with other personality traits as well as the particular setting and specific circumstance.

The Correlation analysis for Agreeableness against RO was reported as being statistically significant, but indicated a weak negative correlation. This suggests that students who ranked higher on Agreeableness were less likely to engage in RO as their preferred learning mode. The finding presents an intriguing contrast to existing literature conducted by Digman (1990) who stated that those who rank high on Agreeableness usually demonstrate cooperative behaviours and prioritize on sustaining harmonious relationships. Such traits are believed to prefer learning modes such as RO, which enables the exploration of different

perspectives and the attainment of knowledge by observing others. This learning mode is helpful in cultivating interaction within a cooperative learning environment. However, the reported negative correlation between the two variables in this study implies a potential preference among agreeable students for more interactive learning methods rather than passive observation. This could imply that while agreeable students thrive in absorbing information from social interactions, their deep commitment in maintaining harmonious relationships might limit their engagement in the introspective and evaluative process of RO. Such a discrepancy not only questions conventional beliefs, but also highlights the complexity of how personality traits shape learning preferences. Regarding the multiple regression analysis between Agreeableness and RO, it was discovered that there were non-significant negative effects, suggesting that this personality trait does not play a significant role in affecting RO. These findings reveal intriguing complexities regarding how personality traits influence learning preferences. Initially, the weak negative correlation suggested that students with higher Agreeableness are less likely to engage with RO. However, this relationship was not supported in multiple regression, which takes into account additional variables. This discrepancy can be theoretically explained by considering the nature of Agreeableness and its interaction with other personality dimensions. Agreeableness, characterized by a preference for maintaining harmonious relationships and being cooperative, might naturally incline individuals toward learning modes that involve direct interaction and communication rather than the introspective learning mode of RO (Digman, 1990). It is possible that Agreeable students may find greater value in learning environments where they can engage directly with others, facilitating cooperation and harmony, rather than through the solitary reflection of RO. Moreover, the impact of Agreeableness on RO could be overshadowed by stronger influences from other personality traits. Furthermore, in environments where interactive learning is

emphasized, the natural tendencies of agreeable individuals towards cooperation and social harmony might not necessarily promote engagement in the more reflective practices associated with RO. The combination of these factors can explain why Agreeableness may not significantly predict RO in a multiple regression analysis that includes a wider range of influencing variables.

The Correlation analysis for Agreeableness against AE was reported as being statistically significant, indicating a positive yet weak correlation. This suggests that students who scored higher on Agreeableness are more likely to engage in AE as their preferred learning mode. When AE involves group learning or cooperative activities, agreeable students might find this mode of learning particularly suitable due to their natural inclination towards cooperation and social interactions (Opoku et al., 2023). An additional study (Rashid et al., 2012) that reported a positive relationship between Agreeableness and AE further support the findings of this research. Upon conducting multiple regression analysis, although there was a potential influence of Agreeableness on AE, it did not reach the threshold for significance, and was thus deemed non-significant. This non-significant result, despite the initial positive correlation observed between Agreeableness and AE, might be because of other factors that complicate the direct effect of Agreeableness in a multivariate context. The weak correlation suggests only a mild tendency for more agreeable students to prefer AE. Yet, when other variables are introduced in the multiple regression analysis, the influence of Agreeableness might be overshadowed by other personality traits, which in this case, was Openness to Experience, since it had a stronger impact on AE. Additionally, the setting in which AE is employed, such as whether it involves group settings or individual activities, can significantly impact the role that Agreeableness plays. If AE largely requires individual experimentation instead of cooperative group work, the influence of Agreeableness could be less noticeable.

Lastly, methodological issues such as the number of variables included in the regression model to assess AE might impact the significance of Agreeableness. This complex relationship highlights the many-sided nature of personality's influence on learning preferences and emphasizes the importance of considering a broad range of factors when analysing educational outcomes (Opoku et al., 2023; Rashid et al., 2012).

The Correlation analysis for Neuroticism against AE was reported as having a statistically significant positive yet weak correlation. This suggests that students who scored higher in Neuroticism might be slightly more inclined to favour AE as their preferred learning model. Even though there is statistical significance in the correlation, it is not very strong. This implies that although there is a positive correlation between a higher level of neuroticism and a slight preference for AE, the impact of neuroticism on this learning preference is minimal. For students who score higher on neuroticism, AE may also need to include elements of emotional learning such as stress management techniques and emotional regulation. Such students may discover that experiential learning through hands-on activities offers a more satisfying way of grasping and handling the complexities of new information. AE often offers immediate feedback, allowing for quick adjustments and learning from mistakes in a controlled environment, which can be especially beneficial for students with higher levels of Neuroticism. This instant response can help in reducing levels of anxiety, as results are quickly observed rather than being delayed. When it comes to multiple regression analysis, Neuroticism was found to have a significant positive effect on AE. While neurotic traits such as anxiety and emotional instability (Costa & McCrae, 2003) are conventionally viewed in a negative light, such heightened states of emotion can drive students to seek out new experiences in AE as a means to manage and reduce their emotional distress. Moreover, engaging in AE might offer such students a technique to exercise control and discover

solutions, and thus theoretically, reduce their overall levels of anxiety and stress. This viewpoint is consistent with a study conducted by Penney and Spector (2002) who found that individuals ranking high in Neuroticism might seek out new experiences as a coping mechanism, providing them with opportunities to improve and manage their emotional well-being. Overall, the significance of both the correlation analysis and the multiple regression analysis for Neuroticism with AE revealed interesting insights into how personality traits influence learning preferences. The correlation analysis reported a weak but statistically significant positive correlation between Neuroticism and AE. This suggests that students with higher levels of Neuroticism might have a slight preference for AE as their preferred learning model. Although the impact of Neuroticism on this learning preference is minimal, the existence of a positive correlation indicates that such students may find the experiential and hands-on approach of AE beneficial. The immediacy of feedback within AE could potentially help mitigate their anxiety by allowing for prompt adjustments and learning from mistakes in a controlled setting, which provides immediate results and reduces uncertainty (Costa & McCrae, 2003).

Table 30**Personality Traits & Learning Modes**

Personality Trait & Learning Mode	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Openness & RO	Weak negative correlation; non-significant in regression.	No prior work directly explored this.	Yes	This is a novel analysis. Speculation: students lower in Openness rely on reflection due to preference for predictability and past experiences. Other factors may dilute this effect in regression.
Openness & AE	Moderate positive correlation; significant in regression.	Confirmed (Ibrahimoglu et al., 2013).	No	Strong alignment with previous studies. Open individuals are drawn to exploratory learning (Kolb, 1984; McCrae & Costa, 1997). The regression confirmed the predictive strength of Openness for AE.
Conscientiousness & CE	Weak negative correlation; significant weak effect in regression.	Partial confirmation (Costa & McCrae, 1992).	No	Weak preference for CE due to structured and predictable tendencies of conscientious students. This aligns partially with literature that conscientious individuals avoid spontaneous activities.
Conscientiousness & AC	Weak positive correlation; significant in regression.	Confirmed (Judge & Ilies, 2002).	No	Strong preference for structured, logical learning (AC) among conscientious individuals. Aligns well with Kolb's framework and related literature on strategic thinking in conscientious students.
Extraversion & RO	Weak negative correlation; non-significant in regression.	Confirmed partially (Costa & McCrae, 1992).	No	Extroverts prefer active, social learning modes. Regression analysis shows that other traits dilute the effect of Extraversion on RO.
Extraversion & AE	Weak positive correlation; non-	Confirmed (Ibrahimoglu et al., 2013).	No	Extroverts engage in experiential learning but are influenced by other factors, such as Openness, which had a stronger role in AE preferences.

Personality Trait & Learning Mode	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Agreeableness & RO	significant in regression. Weak negative correlation; non-significant in regression.	Contradicted (Digman, 1990).	Yes	Contrary to literature suggesting cooperative learning aligns with RO, agreeable individuals may prefer interactive methods over reflective observation.
Agreeableness & AE	Weak positive correlation; non-significant in regression.	Confirmed (Opoku et al., 2023).	No	Weak alignment with AE due to agreeable traits emphasizing cooperation. Non-significance in regression suggests other traits, particularly Openness, overshadow Agreeableness in AE preferences.
Neuroticism & AE	Weak positive correlation; significant in regression.	Confirmed (Penney & Spector, 2002).	No	Neurotic individuals may engage in AE to reduce anxiety and gain immediate feedback. Regression highlights this as a meaningful predictive factor.

5.2.2 *Personality Traits and Learning Styles*

The Correlation analysis for Openness against Diverging was reported as having a statistically significant yet weak negative correlation among the two variables (Table 31). This suggests that students who scored higher on Openness might be less likely to favour Diverging as their preferred learning style. The negative correlation coefficient shows that as Openness increases, there is a slight tendency for the preference for the Diverging learning style to decrease. This goes against the expectation that higher Openness would result in a positive correlation with the Diverging learning style that seek new ideas and creativity. The negative correlation might suggest a misalignment between the theoretical association of Openness with creativity and the practical application within the Diverging style. It could be that students high in Openness might actually prefer more actively engaging methods (like Accommodating) over Diverging, which focuses more on observation and reflection rather than direct engagement with new experiences (Kolb, 1984). The weak negative correlation between Openness and Diverging challenges the common assumption that these traits naturally complement each other, as they both involve creativity and looking at things from different perspectives. This finding signifies a complexity in how personality traits can influence learning preferences, where other factors may have played a role.

The binary logistic regression analysis also revealed a marginally statistically significant negative relationship between Openness and Diverging. To reiterate once again, since those with higher levels of openness tend to be creative and open to new concepts (McCrae & John, 1992), it is interesting to observe a negative relationship with Diverging. Although open people are usually open to new experiences, this does not always translate into behaviours that significantly diverge from accepted norms. These findings are consistent with those of DeYoung (2015), who examined the complex relationship between openness and its

various behavioural effects. This is in line with the negative relationship observed in this study, indicating that students who are more open-minded may exhibit less divergent behaviours and learning methods. Therefore, even though Openness promotes engagement with new ideas, in an academic context, other personality traits such as Conscientiousness seems to have a stronger effect on actual deviation from social and academic norms (Trapmann et al., 2007). This implies that open-minded university students might still seek innovation, just within the bounds of what their educational environment deems desirable or acceptable. This understanding emphasizes how complex interactions between personality traits and particular environments shape behaviour, and it emphasizes how important it is for educational institutions to take these dynamics into account when developing curricula and support systems that encourage creativity as well as academic success.

While both tests show significance and agree on the relationship, what makes the findings counterintuitive is not the agreement between the tests but rather the nature of the relationship they reveal between Openness and Diverging. The unexpected negative relationship between Openness and the Diverging learning style, as evidenced by both the correlation and binary logistic regression analyses, challenges the typical theoretical expectations. Generally, Openness to Experience is associated with creativity, exploration of new ideas, and a preference for novel experiences (Costa & McCrae, 1992), which theoretically should align well with the characteristics of the Diverging learning style, known for its emphasis on creativity and broad thinking (Kolb, 1984). However, the findings suggest a more complex interaction. Researchers have noted that while Openness encourages engagement with new and diverse concepts, the actual expression of this trait can be significantly influenced by contextual and environmental factors (Silvia et al., 2009). Additionally, the way Openness influences behaviour and preferences is not always

straightforward. For instance, Kashdan and Rottenberg (2010) discussed how Openness might promote psychological well-being through engagement with new experiences but does not necessarily lead to behaviours that deviate from established norms. This could explain why individuals high in Openness might not prefer Diverging, which relies heavily on observation and reflection, rather than direct interaction with new experiences. Moreover, the interplay between Openness and other personality traits can also affect learning preferences. For example, Conscientiousness, which involves a preference for structured and organized environments, might moderate the influence of Openness on learning preferences, leading to a preference for more structured learning approaches over Diverging (Noftle & Robins, 2007). This interaction could result in Openness manifesting in ways that are less aligned with Diverging and more with structured or direct experiential learning methods, such as Assimilating or Converging. These considerations highlight the complexity of predicting learning preferences based solely on personality traits without considering the broader situational context and the combination of multiple personality dimensions.

The Correlation analysis between Openness and Accommodating was statistically significant, indicating a positive but weak correlation. This suggests that students who ranked high in Openness may have a slight preference for the Accommodating learning style. Such students are depicted as having a wide range of interests and an active approach to new experiences. Moreover, this correlation, albeit being a weak one, suggests that such students are more likely to succeed in environments that involve adaptive, practical, and hands-on experience where they can combine new information with existing knowledge effectively. Overall, these findings are consistent with the literature. A study conducted by Zhang et al., (2011) demonstrated that individuals with higher scores in Openness had a preference for learning methods characterized by the Accommodation learning style. Additionally, another

study by Koudash et al. (2022) suggested how those with higher levels of Openness were more likely to adopt a Kinaesthetic learning style, which includes learning via experiencing and doing. This learning style, while not explicitly stated as an Accommodating learning style, closely resembles the Kinaesthetic learning style since it entails similar learning characteristics. It is important, however, to note that while Openness is positively correlated with a preference for being involved in practical, hands-on learning experiences, this impact is somewhat modest and there could be other variables that determine this learning preference. Overall, there is not much research done on the relationship between Openness and the Accommodating learning style. When it comes to binary logistic regression analysis, the relationship between Openness and Accommodating emerged as non-significant. This could be due to several reasons. Despite the initial positive but weak correlation indicating that students high in Openness are somewhat more inclined toward the Accommodating learning style, a plausible explanation for the non-significant outcome in the binary logistic regression is that the presence of other personality traits might have had a stronger or more direct effects on the preference of this learning style. For instance, the personality trait Extraversion might have a more pronounced influence on such active and hands-on learning preferences. Extraverts, due to their sociability and energy, may thrive in dynamic and interactive learning environments that are characteristics of the Accommodating style (McCrae & John, 1992). Moreover, the complexity of educational environments and the specific context in which learning occurs could also play critical roles. Educational settings that emphasize group work, practical tasks, and real-world applications could enhance the suitability of the Accommodating style for students, but if the curriculum is predominantly theoretical, even highly open students may not show a strong preference for Accommodating styles (Kolb, A. Y. & Kolb, D. A, 2005). Additionally, it is important to consider the interaction between

Openness and environmental factors. According to Zhang and Sternberg (2005), while Openness can facilitate adaptability and curiosity, its impact on learning preferences might depend heavily on the learning environment's ability to cater to diverse interests and provide experiential learning opportunities. Koudash et al. (2022) also noted that while Openness aligns with kinaesthetic learning preferences, the actual engagement with these preferences can vary depending on how learning activities are structured and presented.

The Correlation analysis for Conscientiousness against Assimilating was reported as having a statistically significant positive yet weak correlation. This suggests that students who scored higher on Conscientiousness might be slightly more inclined to favour Assimilating as their preferred learning style. This finding is supported by a Malaysian study conducted by Ibrahimoglu et al. (2013), who discovered that individuals who ranked high on Conscientiousness had a preference for the learning style Assimilating. This researcher stated that those individuals tend to have a strategic approach when it comes to learning, have a strong work ethic, are disciplined, and are overall well-organized. Moreover, the researcher reported that such individuals, rather than participating themselves, seemed to enjoy observing others instead. Such individuals also tend to rely on their thinking more than their feelings when making important decisions. When it comes to binary logistic regression analysis, Conscientiousness showed a positive relationship with Assimilating. High conscientiousness people should theoretically perform well in settings that call for methodical information processing and close attention to detail. Conscientious students tend to meticulously structure and organize their learning processes. This is advantageous for Assimilating, which is the process of integrating new information into pre-existing cognitive frameworks. This involves adjusting to new learning settings and transforming pre-existing knowledge to include new experiences. Conscientious people will probably take a methodical approach to these

adaptations, making sure that the adjustments are well-integrated and in line with their structured learning techniques (DeYoung, 2010a). The significance of both the correlation analysis and multiple regression for Conscientiousness with Assimilating highlights a consistent relationship, suggesting that students with higher Conscientiousness tend to prefer and perform well in the Assimilating learning style. It is important to note, however, that the coefficients for both tests were weak. For the correlation analysis, this indicates that more conscientious students have a slight tendency to favour the Assimilating learning style, which aligns with their disciplined and organized nature, as noted in the study by Ibrahimoglu et al. (2013). This finding is supported by binary logistic regression analysis, which also highlights a positive relationship, suggesting that even when other variables are controlled, Conscientiousness independently predicts a preference for Assimilating. This learning style, which involves integrating new information into existing frameworks, suits the conscientiousness student's preference for structured and strategic learning approaches (DeYoung, 2010a). Together, these results illustrate that Conscientiousness not only correlates with a preference for Assimilating but also significantly contributes to it in a multivariate context, supporting the notion that personality traits can substantially influence learning preferences.

The Correlation analysis for Conscientiousness against Diverging was reported as being statistically significant, and indicated a significant moderate negative correlation. This suggests that students who scored higher on Conscientiousness were less likely to favour Diverging as their preferred learning style. This finding contrasts with a study done by Hu et al. (2021) who discovered that Divergent learners scored higher in Conscientiousness. When it comes to binary logistic regression analysis, the personality trait of Conscientiousness and the learning style Diverging have a significant negative relationship among students, as evidenced

by the negative coefficient. With a p-value of less than 0.01, this finding's statistical significance indicates that being more conscientious is associated with a lower chance of participating in diverging behaviours in an academic setting. Conscientiousness is typified by traits like discipline, diligence, and attentiveness (McCrae & Costa, 1997). People that score highly on conscientiousness are typically well-organized and detail-oriented. These traits may inherently limit a student's inclination toward divergent thinking, which is investigating various approaches and thinking outside the box (King et al., 1996). The methodical and rule-following tendencies of conscientious students contrast with the more spontaneous and less structured nature of divergent thinking. The negative correlation with the 'Diverging' learning style may be explained by these traits, which can be translated into a preference for adhering to accepted norms and procedures rather than exploring new and untested paths (Costa & McCrae, 1992). Studies that associate high conscientiousness with a preference for organized and reliable methods over creative or unpredictable ones provide empirical support for the negative relationship between conscientiousness and diverging. University student-focused research, such as that conducted by Komarraju et al. (2009), demonstrates how diligent students typically prefer conventional teaching strategies and may avoid those that call for taking risks or less structured thought process, aspects that are typical of the Diverging learning style (Noftle & Robins, 2007). This finding is especially applicable to academic environments, such as universities, where conscientiousness is highly correlated with being diligent and following rules. Students who score highly on this trait may therefore be less likely to take chances or come up with original solutions to problems that deviate from the norm. This supports the observed negative correlation in academic environments at universities where systematic problem-solving is frequently given precedence over creative divergence in traditional measures of academic success (Judge et al., 2007). This relationship

also implies that universities ought to think about a balance between the requirement for structure and chances for creative exploration, particularly for those students who might gain from non-traditional learning opportunities. Promoting a variety of instructional strategies could assist in utilizing students' strengths across various personality dimensions, creating a more welcoming learning environment that honours both conscientiousness and receptivity to new ideas (McCrae & Costa, 1997).

The findings from both the correlation analysis and the binary logistic regression consistently demonstrate a significant negative relationship between Conscientiousness and the Diverging learning style. This similarity in statistical outcomes highlights a strong pattern where higher levels of Conscientiousness are linked with a decreased preference for Diverging, which involves exploring multiple approaches and thinking creatively. This pattern is consistent with the inherent characteristics of conscientious individuals who are disciplined, diligent, and prefer structured environments over those that require spontaneous and less structured thinking (McCrae & Costa, 1997). The consistency across these statistical tests underlines the reliability of the findings and emphasizes the influence of personality traits on learning preferences. The presence of significant results in both tests strengthens the argument that conscientious students might naturally shy away from learning environments that value divergence, such as those encouraging risk-taking and creative problem-solving (Judge et al., 2007; Nofle & Robins, 2007). This understanding is crucial for educational institutions aiming to tailor learning experiences that cater to diverse student profiles, suggesting that a balanced approach incorporating both structured and creative learning opportunities might better serve the educational needs of all students.

The Correlation analysis for Conscientiousness against Accommodating was reported as being statistically insignificant, indicating no correlation between the two variables.

However, running a binary logistic analysis revealed a significant positive relationship between the two variables. This suggests that in an academic setting, there is a greater chance of adopting an accommodating learning style when students show higher levels of Conscientiousness. The Accommodating learning style involves adapting oneself to new experiences, which conscientious students might do effectively within the structures they trust and find reliable. According to empirical research, conscientiousness and academic success are linked via effective study techniques, and most importantly, perseverance (Komarraju et al., 2009; Poropat, 2009). These traits allow students to adapt to new learning demands and successfully adapt to complex information. For instance, studies conducted by Bidjerano and Dai (2007) show that diligent students frequently retain deep learning techniques, which are essential for both integrating and meeting the needs of different learning styles. These tactics, which are in line with the educational requirements that these learning styles entail, include the critical analysis of new information and the adaptable application of knowledge to various settings. Students who score high in Conscientiousness take great care to ensure that new information is not only well understood but also effectively applied in various contexts through organized and meticulous approaches. This ability is essential in educational environments where learning frequently necessitates applying previously acquired knowledge in new environments (Vedel, 2014). Since such students approach learning in a methodical and consistent manner, conscientious students are found to be skilled at both accommodating and assimilating. A study by Komarraju et al. (2009) shows that because they are organized and hardworking, conscientious students perform well in settings where they can systematically integrate new information and adjust to unfamiliar learning environments. Furthermore, research by Judge et al. (2007) discovered that the ability to successfully integrate and adapt to new learning situations is predicted by conscientiousness.

It is interesting to note that while the Correlation analysis showed no significance between the two variables, Binary Logistic Regression showed a significance relationship between the two variables. The difference in outcomes between the correlation analysis and the binary logistic regression for Conscientiousness with Accommodating is intriguing and highlights the complexities of statistical methodologies and their implications. The correlation, which measures the linear relationship between two variables, indicated no significant correlation between Conscientiousness and Accommodating. This suggests that, on a simple linear scale, the direct relationship between these two traits may not be apparent or strong enough to be statistically detectable. However, the Binary Logistic Regression, which assesses the likelihood of a particular outcome based on various predictors and is able to handle non-linear relationships, revealed a significant positive relationship. This discrepancy can arise due to the Binary Logistic Regression's ability to model more complex relationships and interactions that a simple correlation might miss. Moreover, this statistical method might have been able to capture the subtler, situational effects of Conscientiousness on the likelihood of adopting Accommodating learning styles. These effects manifest only in particular situations or alongside other factors that were not considered in the initial correlation analysis. Furthermore, this discrepancy highlights the importance of choosing appropriate statistical methods based on the research questions and the nature of the data. While the correlation analysis provides a quick check for linear relationships, binary logistic regression can offer deeper insights into how traits like Conscientiousness influence educational behaviours in more complex, real-world scenarios. It highlights the notion that those conscientious students, known for their diligence, may indeed adapt well to new learning environments when deeper, conditional factors play a role (Komarraju et al., 2009; Poropat, 2009). These findings suggest

that educators and academic researchers should consider multiple analytical approaches to fully understand the dynamics of personality traits on learning preferences and outcomes.

The Correlation analysis for Extraversion against Accommodating was reported as being statistically significant, indicating a positive yet weak correlation between the two variables. This suggests that students who ranked higher on Extraversion might be slightly more inclined to prefer Accommodating as their preferred learning style. This finding is consistent with the study conducted by Li and Armstrong (2015) where they reported that extroverted managers tend to have a higher preference in engaging in an accommodating learning style. Additionally, a Malaysian study conducted by Ibrahimoglu et al. (2013) supports this notion where extroverted individuals were more like to adopt an Accommodating style of learning, since this learning style aligns well with the sociable nature of extroverted individuals. Moreover, these findings are consistent with related findings that extroverted individuals have an external thinking style (von Wittich & Antonakis, 2011), and are inclined to exhibit a cognitive style that is more innovative than adaptive (Zhang, 2006). Li and Armstrong's (2015) study further support the findings of the positive significant Correlation between Extraversion and Accommodating. When examining the results from the binary logistic regression analysis, where the coefficient for Extraversion against Accommodating appeared as non-significant, it is important to consider the broader implications of these findings. Although the initial correlation analysis revealed a weak but statistically significant positive correlation, suggesting that more extroverted students have a slight preference for the Accommodating learning style, this relationship did not hold when other variables were controlled in the regression analysis. This discrepancy can be attributed to the influence of additional factors that were accounted for in the regression model, which in this case are the other personality traits that could have overshadowed the influence of Extraversion. Such

discrepancies further highlight the complexity of personality's impact on learning preferences. While Extraversion might prompt students towards more dynamic and experiential learning environments, as suggested by studies like Li and Armstrong (2015) and supported by findings from Ibrahimoglu et al. (2013) that align with the sociable and outgoing nature of extroverts, the non-significant result in the regression analysis suggests that this trait alone does not necessarily guarantee a preference for Accommodating styles in every context. It is possible that in a controlled analysis, other factors such as the presence of highly engaging material, the structure of the learning environment, or the interaction with peers and instructors play a more decisive role in shaping the learning preferences of extroverted students. Furthermore, studies have suggested that while extroverts tend to be innovative and favour external thinking (von Wittich & Antonakis, 2011; Zhang, 2006), these tendencies are not always directly translatable into specific learning style preferences without considering the influence of situational or contextual factors. While the study by Li and Armstrong (2015) supports the notion that Extraversion is positively correlated with preferences for dynamic learning environments, the transition from correlation to causation in predicting learning styles necessitates a more complex understanding and the consideration of multiple interacting variables. This complexity highlights the need for educators and academic researchers to consider a comprehensive approach when examining the relationship between Extraversion and Accommodating. Understanding that student' learning preferences can be influenced by their personality traits can lead to more tailored and effective educational strategies that accommodate diverse student needs.

The Correlation analysis for Agreeableness against Assimilating was reported as being statistically significant, and indicated a weak negative correlation between the two variables. This suggests that students who ranked higher on Agreeableness might be less likely to engage

in Assimilating as their preferring learning style. Additionally, students with this personality trait might find the introverted and theoretical nature of the Assimilating learning style less appealing to them and goes against their supportive and cooperative nature. The negative correlation of this study contradicts previous research. This is surprising because studies conducted by Rashid et al. (2012) and Yanardöner et al. (2014) reported a positive correlation between Agreeableness and the Assimilating learning style. The inconsistency between these studies and this study might be explained by the effects of recent shifts in educational methods, particularly the increase in remote learning due to the COVID-19 pandemic. The studies took place during a traditional classroom setting, whereas this study took place during online and a blended learning environment. It has been documented that remote learning environments often lack the physical and interactive components that facilitate collaborative learning, potentially alienating agreeable students who thrive in cooperative settings (Sasipriyaa & Rajkumar, 2022). In a traditional classroom setting, students are often encouraged to engage in collaborative activities; however, the shift to remote learning might have further exacerbated this mismatch, as the new educational settings may demand higher levels of self-directed and theoretical engagement that disagreeable traits do not naturally support (Venton & Pompano, 2021). This disruption may explain the deviation in learning preferences among students, like those with high levels of Agreeableness shifting from the Assimilating learning style that is expected according to literature. The full extent of the pandemic's impact on educational practices and preferences is yet to be comprehensively understood, as it represents an unprecedented shift in the educational landscape (Otto et al., 2024). When it comes to binary logistic regression, there was a significant negative relationship as well between Agreeableness and Assimilating. Consistent with the negative findings of this study, a meta-analysis conducted by Vedel (2014) found that people with high

Agreeableness may also not perform as well on tasks requiring high levels of abstract reasoning and theoretical processing. This inconsistency of findings highlights a complex interaction between personality traits and educational environments altered by unprecedented global circumstances. It also highlights the importance of considering the dynamic nature of learning preferences in response to changes in educational delivery methods. Future research should continue to explore how personality influences learning in varied settings, especially as educational practices evolve in response to societal changes. This understanding could help in designing more adaptable and inclusive educational strategies that cater to diverse student personalities and their preferred ways of learning.

The Correlation analysis for Converging against Agreeableness was reported as being statistically significant, indicating a positive yet weak relationship between the two variables. This suggests that students who ranked higher in Agreeableness might slightly prefer Converging as their learning style. Moreover, such students tend to find this learning style more suitable since it requires working with others to solve problems, which naturally aligns with their cooperative nature. Although it is weak, the correlation coefficient shows a positive relationship. This implies that students have a slight tendency to favour Converging as a learning style more as their level of agreeableness increases. Nonetheless, given how weak this correlation is, it is not strong enough to imply that Agreeableness substantially influences the preference for an Assimilating learning style. Regarding binary logistic regression, a statistically significant positive relationship was observed between these two variables. Since Converging entails problem-solving and the application of concepts to real-world scenarios, frequently in technological contexts (Kolb, 1984), the cooperative and team-oriented nature of Agreeable people makes this learning style appealing, as it frequently necessitates good interpersonal and teamwork. According to findings from Van der Zee et al., (2002), people

who score highly on Agreeableness may find the social component of problem-solving in converging scenarios to be especially engaging because these settings play to their strengths in preserving group harmony. According to another study by Wolfe and Johnson (1995), students with high agreeableness scores did better in group learning scenarios involving problem-solving activities, which is consistent with the positive relationship with convergent learning. The significance of these results in both tests underscores a subtle yet important influence of Agreeableness on learning preferences, particularly in contexts that require teamwork and social interaction. Although the correlation is not strong, the positive direction in both analyses indicates that even minor tendencies can have important implications for educational strategies. It highlights that personality traits, such as Agreeableness, while not overwhelmingly decisive on their own, do contribute to shaping how individuals prefer to learn and interact in educational settings. This understanding should encourage educators and curriculum developers to consider personality traits when designing learning environments to optimize educational outcomes and cater to diverse learning needs (Van der Zee et al., 2002).

The Correlation analysis for Neuroticism against Accommodating was reported as statistically non-significant, and indicated a weak positive correlation between the two variables. This implies that there is no reliable evidence to support a meaningful connection between Neuroticism and Accommodating as a preferred learning style. The nonsignificant finding implies that any observed correlation in the sample is insufficient to be generalized to the larger population because the correlation is weak and not statistically significant. As for the Binary Logistic Regression analysis, the findings revealed a significant negative relationship between the two variables. According to the findings, students who exhibit higher levels of Neuroticism are less likely to utilize the accommodating learning style. The effect is subtle but consistent, and the effect size is relatively small, with only marginal statistical

confidence indicated by the significance level. Neuroticism, which is defined by emotional instability, elevated anxiety, and moodiness (Costa & McCrae, 1999), may have an especially negative effect on students in settings where flexibility is necessary, which is an essential component of the Accommodating learning style. When manifested as a teaching approach, it emphasizes active experimentation and hands-on learning (Kolb, 1984); this may be challenging for students who are prone to stress under pressure or uncertainty, qualities that are frequently present in highly neurotic people. The unpredictability of accommodating environments, which call for quick adjustments and problem-solving in ambiguous learning environments, may increase anxiety and hinder effective learning for neurotic students (Judge et al., 2002). Prior research has reported a relationship between lower academic performance and a high level of neuroticism. Students with high Neuroticism scores tended to perform worse academically, as shown by Chamorro-Premuzic and Furnham (2003). This could be related to their difficulties utilizing flexible learning strategies, which are a crucial part of the Accommodating learning style. According to the literature, these students may struggle to succeed in classroom settings that require a high degree of flexibility and stress resilience (Vedel, 2014). The strong emotional reactions and low stress tolerance that characterize neurotic people explains the negative association between Neuroticism and Accommodating among students. For people with high levels of neuroticism, these settings can be especially stressful because they frequently call for accepting new challenges and handling unanticipated changes (Lieberman, 1993).

The discrepancy between the Pearson Correlation and Binary Logistic Regression results can stem from several methodological differences. Firstly, Pearson Correlation primarily measures the linear relationship between two continuous variables, and it might not effectively capture non-linear relationships. The correlation analysis might have missed

subtler, non-linear patterns in the data, evidenced by a non-significant result. On the other hand, binary logistic regression is designed to handle binary outcome variables and can uncover relationships that are not strictly linear, which can be crucial when the dependent variable, like choosing a specific learning style, is categorical. This method can detect an influence of an independent variable on the probability of an outcome occurring, even if this influence does not manifest across all levels of the independent variable uniformly, thereby providing significant results where Pearson correlation does not. This difference in handling data types and relationship forms likely explains why Binary Logistic Regression showed significant effects of Neuroticism on the Accommodating learning style, which Pearson correlation failed to detect.

Table 31**Personality Traits and Learning Styles**

Personality Trait & Learning Style	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Openness & Diverging	Weak negative correlation; marginally significant in regression.	No	Yes	Contradicts expectations as Diverging emphasizes creativity, but Openness aligns more with active styles like Accommodating. Highlights complexity of environmental and personality interactions.
Openness & Accommodating	Weak positive correlation; non-significant in regression.	Partially (Zhang et al., 2011).	No	Indicates a slight preference for active, hands-on learning. Regression insignificance suggests other factors like Extraversion may overshadow Openness's influence.
Conscientiousness & Assimilating	Weak positive correlation; significant in regression.	Confirmed (Ibrahimoglu et al., No 2013).		Strong alignment with Assimilating due to structured, organized nature of conscientious individuals. Both tests showed consistent results.
Conscientiousness & Diverging	Moderate negative correlation; significant in regression.	No	Yes	Contradicts findings of Hu et al. (2021). Suggests conscientious individuals avoid creative and unstructured learning styles, preferring structure and predictability.
Conscientiousness & Accommodating	No correlation in Pearson; significant positive relationship in regression.	Partially (Bidjerano & Dai, 2007).	No	Regression revealed a significant relationship, emphasizing adaptability of conscientious individuals when conditional factors are considered.
Extraversion & Accommodating	Weak positive correlation; non-significant in regression.	Confirmed (Li & Armstrong, 2015).	No	Sociability aligns with Accommodating style, but regression suggests influence of other traits or contextual factors in determining preference.

Personality Trait & Learning Style	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Agreeableness & Assimilating	Weak negative correlation; significant in regression.	No	Yes	Contradicts Rashid et al. (2012); may reflect shifts in educational contexts like remote learning, which alter cooperative preferences of agreeable individuals.
Agreeableness & Converging	Weak positive correlation; significant in regression.	Confirmed (Van der Zee et al., 2002).	No	Aligns with collaborative problem-solving traits of agreeable individuals. Both tests reinforce findings.
Neuroticism & Accommodating	No significant correlation; significant negative relationship in regression.	Partially (Chamorro-Premuzic & Furnham, 2003).	No	Highlights stress-related challenges neurotic individuals face in flexible, hands-on learning. Regression revealed complexities missed by Pearson.

5.3 Research Question 2 Discussion

This section addresses the second research question by discussing the findings of demographic variables and whether they contribute to differences among behavioural outcomes and learning approaches of higher education students in the UAE. The significant findings from the statistical measures of ANOVA, Multiple Regression, and Binary Logistic Regression, as reported in Chapter 4, are thoroughly discussed here, and are supported and aligned with existing literature. This section is divided into three parts. The first, ‘Demographics and Personality Traits’, involves analyses using Multiple Regression and ANOVA. The second, ‘Demographics and Learning Modes’, also utilizes Multiple Regression and ANOVA analyses. The third, ‘Demographics and Learning Styles,’ involves analyses conducted using Binary Logistic Regression. Summary tables are provided for each section, highlighting whether findings confirmed or contradicted previous work and identifying any novel insights. The demographic variables examined include gender, age range, degree type, and academic discipline.

5.3.1 *Demographics and Personality Traits*

The results of the Multiple Regression analysis demonstrated that Openness was significantly positively impacted by Age Range, indicating the influence of age on this personality trait (Table 32). The study employed ANOVA to further investigate the connection between these two variables and found that Age Range had a significant impact on Openness, demonstrating that Openness varies with age, thus supporting the finding of Multiple Regression. Given that the p-value was less than 0.05, Tukey HSD was used in a post hoc analysis to compare various age groups against the previously mentioned personality traits, with age range serving as the primary demographic variable. Significant differences in Openness between the 18–22 age group and the 56+ age range were found in the analysis,

indicating a decline in Openness with age. The study's findings suggest that Openness decreases with age, with older students showing lower levels of this personality trait compared to younger students. These results are consistent with the literature which indicates that Openness can peak in middle age before eventually declining (Schwaba & Bleidorn, 2018). Additionally, it is possible that the observed decline in Openness among older students is due to a decline in novelty-seeking behaviour, which is typical when people value familiarity and stability (McCrae et al., 1999). According to Salthouse (2004), there may be a connection between this decline in Openness and the cognitive effects of aging, such as a decline in intelligence, which can make interacting with new ideas and experiences challenging or even less appealing. Furthermore, a study conducted by Roberts et al. (2006) demonstrates that as people grow older, their personalities tend to stabilize, becoming more resistant to change and less receptive to new experiences that could challenge their established self-concept. On the other hand, contradicting research highlights the complexity of personality development throughout humans' lives by arguing that that Openness to experience may increase with age, representing increased emotional maturity and life experience (McCrae & Costa, 2003; Terracciano et al., 2006). These differences suggest that other demographic factors, such as perhaps social cultural influences, might also have an impact on these trends. Realizing such dynamics is essential for educators in order to create instructional lesson plans that not only support but also encourage Openness in different age groups. Due to the cross-sectional design of this study, it is not possible to fully trace the developmental progression of Openness, thus, emphasizing the need for longitudinal research to fully comprehend such trends (Specht et al., 2011). Moving on, the personality trait of Agreeableness was also significantly positively impacted by Age Range, suggesting that Agreeableness increases with age. This strong link between age range and higher levels of Agreeableness is highlighted in literature, where

research has consistently shown a link between age and personality traits, including Agreeableness, suggesting that as people age, they tend to become more agreeable. For instance, Roberts et al. (2006) and Soto and John (2017) highlighted a general trend of increasing Agreeableness as people approach middle age. Moreover, an interesting study by Wilmot and Ones (2022) explored the interaction between age and Agreeableness in terms of emotional perception, suggesting that higher levels of Agreeableness can improve the ability to recognize and interpret emotions across various age groups. This suggests that Agreeableness not only increases with age, but also improves certain cognitive and social abilities, which are important in interpersonal interactions and emotional intelligence. This provides several implications for educators. By identifying how higher levels of Agreeableness can enhance emotional perception, educators can incorporate Emotional Intelligence (EI) training within their teaching methods. In turn, this can ultimately heighten students' empathy and social skills, which are pertinent for effective collaboration and resolving conflicts in a classroom setting. Moreover, knowing that such skills are consistent across different age groups can help educators in implementing teaching strategies that include everyone, thus making sure that all students feel involved and supported, regardless of what their age is. Overall, utilizing these insights can ultimately lead to more inclusive and empathetic learning environments, which can further enhance students' overall learning outcomes.

The Multiple Regression analysis regarding the relationship between Age Range and Agreeableness emerged as having a significant positive effect. ANOVA further investigated this connection and revealed a significant impact between the two variables, indicating that just like Openness, Agreeableness also varies with age. Similarly, given that the p-value was less than 0.05, Tukey HSD was used in a post hoc analysis to compare various age groups

against the previously mentioned personality traits, with age range serving as the primary demographic variable. Regarding Agreeableness, the 56+ age group showed a visible increase in comparison to the 18–22 age group, suggesting that Agreeableness tends to increase with age. As people age, there is often a noticeable shift towards prioritizing more harmonious relationships and minimizing conflict. A study conducted by Carstensen et al. (1999) showed that as people seek out more harmonious relationships and less conflict, this shift in social roles is linked to increased self-reflection and a re-evaluation of life priorities, which can enhance personality traits such as Agreeableness. Further studies (Srivastava et al., 2003) support this, by demonstrating that older adults often display increased Agreeableness. Moreover, a longitudinal study by Allemand et al. (2008) showed that self-reflection and life re-evaluations, common in later life, contribute significantly to these changes in personality, indicating a potential increase in Agreeableness as people age. Overall, these findings support the literature suggesting that personality traits tend to change as people age, possibly as a result of shifting social roles and responsibilities as well as personal development (Specht et al., 2011).

Table 32***Demographics & Personality Traits***

Demographic & Personality Trait	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Age Range & Openness	Significant decline in Openness with age; older groups (56+) scored lower than younger groups.	Confirmed (Schwaba & Bleidorn, 2018; McCrae et al., 1999; Salthouse, 2004).	Yes (McCrae & Costa, 2003; Terracciano et al., 2006).	Decline explained by reduced novelty-seeking and cognitive aging. Contradictions suggest complexity in Openness trends, highlighting sociocultural influences and the need for longitudinal studies.
Age Range & Agreeableness	Significant increase in Agreeableness with age; older groups (56+) scored higher than younger groups.	Confirmed (Roberts et al., 2006; Soto & John, 2017; Srivastava et al., 2003).	No	Consistent with literature. Explained by shifts toward harmonious relationships and life re-evaluation in older age groups. Novel contribution includes practical implications for educators to incorporate Emotional Intelligence (EI) training for empathy and collaboration.

5.3.2 *Demographics and Learning Modes*

According to the findings of the Multiple Regression analysis, Gender revealed a positive and significant influence on RO (Table 33). The positive coefficient (B) of 1.656 suggests that females (coded as 2) score, on average, 1.656 points higher on the RO scale compared to males (coded as 1), suggesting that women were more likely than men to participate in introspective and reflective learning processes. When it comes to ANOVA, Gender and RO showed marginally significant coefficients, hinting at a slight impact of gender on RO. These findings are in line with studies in the fields of psychology and education, which indicate that learning styles can be influenced by gender differences in the way cognitive thoughts and emotions are processed. In fact, a study conducted by Nolen-Hoeksema (1987) revealed that women are more reflective than men, a trait that can enhance their preference towards the RO learning mode. Moreover, Vermunt (1996) in his exploration of learning styles in students within the higher education sector, discovered that females showed a stronger preference for reflective thinking and autonomous learning, which are important aspects of RO. Belenky et al. (1986) further support this notion in their influential book *Women's Ways of Knowing*, which talks about how many women prefer a learning approach that focuses on reflecting on their own experiences, which aligns closely with experiential learning, and by extension, the learning mode of RO. Additionally, a study conducted by Gallagher and Kaufman (2004) examined differences in gender in both affective and cognitive processes, supporting the claim that women generally show higher levels of introspection and reflection in their learning approaches. Lastly, Gilligan (1982) pointed out how cultural and societal norms often push women to be more aware of relationships and emotional cues, which can improve their ability to notice and consider different viewpoints.

Such findings have important educational implications. For instance, given that gender impacts learning preferences especially when it comes to RO, educators and policymakers should take this into consideration when creating lesson plans and designing curriculum. For instance, group discussions, reflective journals, and case studies are all pedagogical strategies that can be useful for females in particular, since the aforementioned studies demonstrate females excelling in learning environments that encourage introspection and individual engagement with the course material. Overall, such an approach can lead to a more tailored educational experience that could benefit both genders individually, thus improving students' overall learning outcomes.

Another significant finding in the multiple regression analysis was the positive impact of Age Range on AE, which demonstrated a significant positive effect. Regarding ANOVA, AE had the strongest correlation with learning modes. The analysis suggested a potential relationship between these two variables, though it was only marginally significant, just above the conventional threshold for statistical significance. Even though the result is considered significant, it does not meet the stricter threshold often employed in similar analyses. Therefore, when significant effects are identified in the ANOVA, a post hoc analysis is usually carried out using a significance level of 0.05 to decrease the chance of Type I errors, which refers to identifying significant differences by random chance. However, as the p-value for the age range and AE relationship did not meet this stricter threshold, a post hoc analysis was considered unnecessary. This method aids in minimizing the risk of Type I errors, which are more common in post hoc tests due to multiple comparisons. Nevertheless, since there is a significant relationship, albeit a weak one, between the two variables, it should be discussed.

The findings from Multiple Regression and ANOVA suggest that AE activities such as applying new concepts, experimenting, and learning through practical experience, are more

common among older adults. According to Kolb and Kolb (2005), there appears to be a growing tendency among individuals to prefer experiential learning as they get older. These changes in preferences are consistent with research showing older adults' increasing preference for applicable, practical learning, as they often look for education that is directly related to their life experiences and personal development (Merriam et al., 2020). The statistically significant increase in engagement with AE activities with age in this study, provides various implications for educators. Firstly, it stresses the importance of taking age-specific learning preferences into account when creating educational programs. Secondly, learning outcomes and engagement among age could be improved by providing more opportunities for experiential learning, which enables older learners to apply their knowledge practically (Taylor, 1996). It is therefore important to take into account experiential and active learning opportunities in educational strategies for older adults in order to meet their changing needs and take advantage of their readiness to apply knowledge and experiences in real-world settings. In summary, the findings of Multiple Regression and ANOVA revealed that both gender and age have complex effects on learning approaches, especially when it comes to the learning modes of RO and AE. Given their considerable influence on cognitive and learning processes, these findings highlight the importance of taking demographic factors into account in educational and psychological research.

Table 33

Demographics & Learning Modes

Demographic & Learning Mode	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Gender & RO	Females scored significantly higher on RO, showing greater preference for reflective learning.	Confirmed (Nolen-Hoeksema, 1987; Vermunt, 1996; Belenky et al., 1986; Gallagher & Kaufman, 2004).	No	Strong alignment with existing literature. Highlights cultural and cognitive factors favoring females' preference for introspection and reflection. Novel educational implication: tailoring strategies like reflective journals or case studies to leverage this preference in learning environments.
Age Range & AE	Older adults showed a significant preference for AE, engaging more in experiential learning.	Confirmed (Kolb & Kolb, 2005; Merriam et al., 2020).	No	Consistent with literature showing older learners prefer practical and applicable education. Novel contribution: Suggests designing age-specific experiential learning strategies to enhance engagement and real-world application of knowledge.

5.3.3 *Demographics and Learning Styles*

Upon performing Binary Logistic Regression, the positive and significant coefficient for gender indicates that females are more likely to prefer a Diverging learning style (Table 34). Within the context of the Diverging style, this could be interpreted as a sign that women are more likely to choose learning settings where they can reflect and watch instead of actively participating. Based on the interpretation of the effect size, it can be concluded that women have a higher probability of the choosing a Diverging learning style than men, with the odds being (0.796) times higher for women than for men. This also makes sense because the Diverging learning style is made up from the learning mode component of RO, which relies on observations and introspections (Kolb, 1984). And since the findings of this study discovered that females ranked higher in RO than men, it makes sense that women also rank higher in the Diverging learning style. Theoretically, gender differences in socialization, cognitive development, and educational experiences could account for gender differences in learning styles. It has been theorized that because of differences in upbringings and the expectations placed on them by society norms, men and women frequently develop distinct learning preferences (Taylor, 1996). Males, for instance, might be encouraged to explore and engage in activities that nurture abstract thinking and conceptualization; this approach aligns with learning styles such as Assimilating, which prioritizes AC and RO (Kulturel-Konak et al., 2011; Wehrwein et al., 2007).

The relationship between gender and learning styles is the subject of conflicting empirical research, with findings suggesting that learning styles can be influenced by factors like the educational environments or specific demographic characteristics. Some studies claim that there are differences between the ways that men and women approach learning tasks (Honigsfeld & Dunn, 2003; Hyde, 2014; Wehrwein et al., 2007). Others for example report

that learning approaches are influenced by the interaction of gender and age, with older women in some situations exhibiting a preference for deeper learning approaches than their younger or male counterparts (Holstermann et al., 2010; Friedman & Schustack, 2016; Randler & Hulde, 2007). Based on the findings of this study, it appears that women have a preference for the Diverging learning style. This is consistent with other studies that suggest women are more likely to opt for reflective and observational learning approaches (Esewe & Ogunleye, 2021; Kulturel-Konak et al., 2011; Truluck & Courtenay, 1999). Their inclination towards more collaborative and reflective learning activities is consistent with the Diverging style, as these are crucial elements of learning. Researcher studies like those by Hyde (2005) and Kolb (1984) have noted that females typically excel in environments that encourage reflection over action and theory over practical application. Research conducted by Belenky et al. (1986) on women's preferred modes of learning supports the idea that females often adopt a more receptive and integrative approach to learning, which complements the characteristics of the Diverging style.

The negative coefficient value in the case of the relationship between gender and Accommodating indicates that the accommodating learning style decreases as the value of the gender variable rises (from male to female, since males are coded as "1" and females as "2"). In other words, this indicates that there is a higher likelihood of males than females choosing the Accommodating learning style. Learning through active participation and hands-on experience is usually preferred by accommodating learners. This type of learning, which prioritizes real-world application over theoretical analysis, appears to be more prominent in men than in women (Wehrwein et al. (2007). Based on the interpretation of the effect size, it can be concluded that men have a higher probability of choosing an Accommodating learning style than women, with the odds being (1.134) times higher for men than for women.

According to Holstermann et al. (2010), males frequently exhibit a preference for learning environments that encourage experimentation and active engagement. Learning styles, like the accommodating style, which emphasizes active, experiential learning, are greatly influenced by gender differences in classroom dynamics. More open and interactive classroom discussions are often beneficial for male students, as they can foster a learning style that emphasizes practical engagement and hands-on activities. Females, on the other hand, are frequently the ones who have more private interactions and receive praise for their compliance, which may result in different learning preferences. This finding could be contextualized within broader discussions about gender differences in learning style preferences. This is consistent with other findings in educational psychology that contend that due to inherent motivational differences or socialization patterns, different engagement strategies may work better with different genders (Kulturel-Konak et al., 2011; Randler & Hulde, 2007). Given these observed variations, it may be necessary to modify teaching strategies in order to properly meet the needs of both sexes. Findings by Golombok and Fivush (1994), Delamont (1999), and Wilkinson and Marrett (1985) emphasizes the necessity for educators to be aware of these dynamics in order to create an inclusive learning environment that acknowledges and supports diverse learning styles across genders.

When it comes Academic Discipline, the Binary Logistic Regression revealed a positive relationship between some academic disciplines and the Converging learning style. This suggests that students belonging to certain academic disciplines possess more converging traits than other disciplines. Theoretically, fields with higher levels of Converging like Architecture and Engineering, are expected to involve a significant amount of interdisciplinary integration. These disciplines frequently call for the integration of theoretical, practical, and technical expertise from different fields, which promotes increased creativity and sophisticated

problem-solving skills (Demirdoven, 2015; Phocas et al., 2011). Disciplines with lower Converging means, such as Education and Law, on the other hand, follow more conventional or less integrated curricular approaches. When observing the means of the variables in Figure 5 below to analyse the academic disciplines that tend to have high levels of Converging, the findings of this study reveal that Architecture, Engineering, and Artificial Intelligence show higher means of Converging as these disciplines are prone to using multiple methodologies to solve complex problems (Butt & Dimitrijević, 2022; Özel, 2020). On the other hand, Education, Business, Law, and Project Management show lower Converging levels, indicating these fields may be less reliant on interdisciplinary approaches in their fundamental curriculum (Del Rosso et al., 2020; Volkwein et al., 2007). Traditionally, academic disciplines like Business and Law have emphasize on using case studies, rote learning, and field-specific theoretical frameworks. With a strong emphasis on domain-specific knowledge and little integration of interdisciplinary content, these disciplines have well-established methods and curricula that have been developed over decades. This is further supported by the conservative and professional standards prevalent in these fields (Call, 2018; Duncan, 2018; Kumar et al., 2020) since curriculum modifications can be difficult processes involving striking a balance between educational innovation and professional standards.

Empirical research supports the findings of this study. According to Cohen and Levinthal (1990), disciplines like engineering and architecture that demand a high degree of cross-disciplinary collaboration involve critical abilities like problem-solving and adaptability. These are important in fields that are marked by rapid technological advancements and complex system interactions (Miles & Huberman, 1994). Programs that prioritize teamwork, project-based learning, and solving real-world problems are more likely to have higher Converging trait scores (Lattuca et al., 2004). Further explanations for the differing

Converging scores amongst disciplines may come from the educational backgrounds of faculty members and the type of cooperative projects undertaken within programs. In a similar manner, the study of architecture requires a broad background encompassing science, art, and technology, which may account for its higher Converging mean when compared to more traditionally focused fields (Newell & Simon, 1972). The semi-interdisciplinary field of Informatics, with its lower-range Converging score, reflects the integration of computer science, cognitive science, and social sciences (Blackler, 1995; Collins & Evans, 2002).

According to the results of the logistic regression, the variable Academic Discipline with Accommodating has a negative coefficient and a statistically significant p-value. This implies that there is a negative correlation between certain academic disciplines' Accommodating traits, which suggests that students belonging to certain academic disciplines possess more converging traits than other disciplines. Given the negative correlation, it is necessary to re-evaluate how each discipline values Accommodating traits in relation to the particular outcomes in the study. For example, being overly accommodating perhaps in the form of flexible deadlines, lenient grading, or less demanding curriculum requirements might be unfavourable if the field of study is linked to demanding academic achievements, innovative outputs, or professional competencies (Arredondo, 2018; Bignotti & Le Roux, 2016; Sarmin & Ashrafuzzaman, 2017).

When observing the academic disciplines to explore students belonging to which fields of study tend to have more Accommodating traits in Figure 6 below, the average levels of Accommodating traits are the highest in Project Management, with Architecture being second highest field of study with higher levels. However, this does not necessarily mean a positive effect. Greater Accommodating levels may be associated with fewer instances of the desired outcome, as the negative coefficient suggests (Mark & Greer, 1993; Zawacki-Richter et al.,

2019). Desired outcome refers to academic performance in this case. On the other hand, in fields of study where the levels of Accommodating traits are low like engineering and artificial intelligence, this suggests that the absence of these traits is associated with higher likelihoods of the desired outcomes. Less adaptability or flexibility, qualities that are usually linked to being accommodating might be advantageous (Kumar et al., 2023; VoPham et al., 2018).

Theoretically, the term Accommodating could relate to the scope of an academic discipline to adjust its curriculum, teaching methods, or student assessment to meet the needs of different types of learners. It is possible that certain disciplines, like project management, by their very nature demand greater flexibility and adaptability because of their emphasis on overseeing diverse teams and projects (Ahmed et al., 2021). This can be translated into teaching strategies emphasizing real-world, practical applications, which need to be flexible enough to adjust to the ever-shifting dynamics of project environments (Ramazani & Jergeas, 2015; Thomas & Mengel, 2008). Such flexibility not only helps in adapting to the immediate needs of projects but also significantly enhances the learning outcomes by aligning educational methods with real-world complexities and challenges (Donald & Miller, 2013).

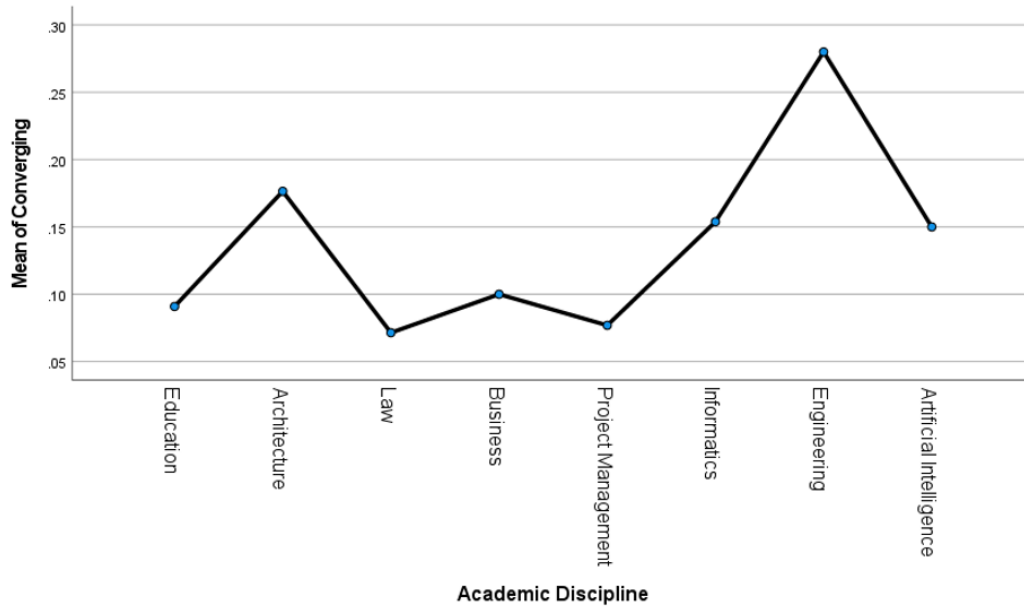
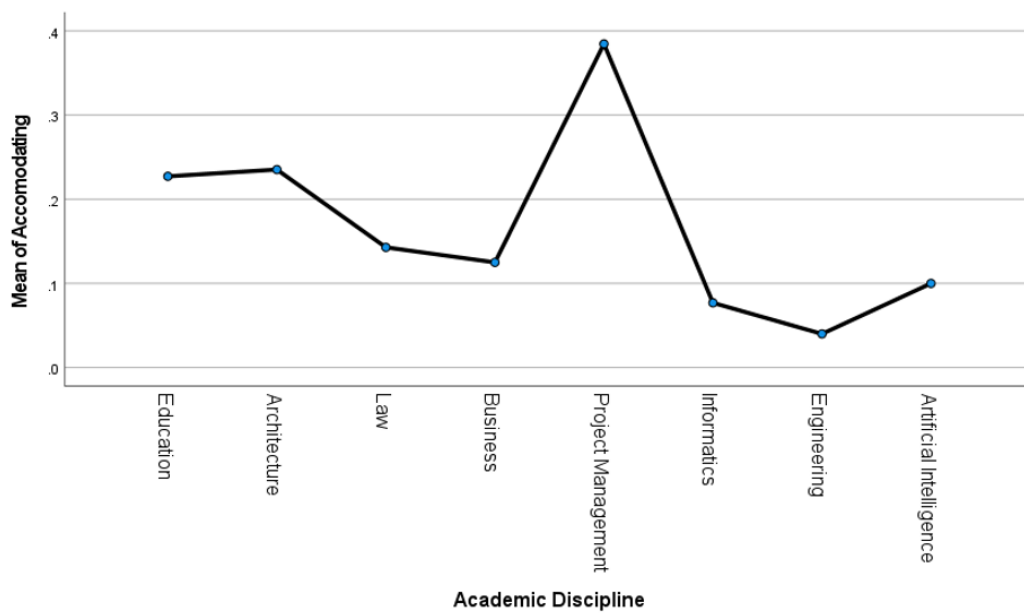
Empirical research supports the idea that Accommodating disciplines may provide a more flexible and nurturing learning environment that is less intense and competitive than less Accommodating more rigid disciplines (Sireci et al., 2005; Stevens & Slavin, 1995). This could also imply that these fields are seen as less demanding or rigorous, which could account for the negative relationship between the variables. This could mean that although accommodating characteristics are good for student happiness and engagement, they might have the opposite effect on other outcomes like academic rigor or competitiveness (Becker & Palladino, 2016; Morris et al., 2023; Sanders et al., 1997). Overall, this analysis highlights the necessity of strategic planning in curriculum design and education, particularly in the areas

where disciplines must balance between accommodating characteristics and upholding rigorous standards. Curriculum designers and educators may need to think about the situations in which flexibility helps or impedes the achievement of academic and professional objectives.

Table 34***Demographics & Learning Styles***

Demographic & Learning Style	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Gender & Diverging	Females showed a significant preference for the Diverging learning style.	Confirmed (Kolb, 1984; Esewe & Ogunleye, 2021; Kulturel-Konak et al., 2011).	No	Females' reflective and collaborative tendencies align with Diverging. Highlights the interplay of gender, societal norms, and learning styles. Suggests adapting teaching strategies to encourage reflective learning environments for female students.
Gender & Accommodating	Males preferred the Accommodating learning style more than females.	Confirmed (Wehrwein et al., 2007; Holstermann et al., 2010).	No	Males' preference for hands-on, practical learning aligns with findings. Suggests fostering active and experiential learning environments for male students.
Academic Discipline & Converging	Architecture, Engineering, and AI disciplines showed higher Converging traits.	Confirmed (Demirdoven, 2015; Cohen & Levinthal, 1990).	No	Interdisciplinary integration in fields like Architecture and Engineering emphasizes problem-solving and adaptability, aligning with Converging preferences. Suggests designing curricula that integrate theoretical and practical knowledge in these disciplines.
Academic Discipline & Accommodating	Project Management and Architecture exhibited higher levels of Accommodating traits.	Partially (Ahmed et al., 2021; Ramazani & Jergeas, 2015).	No	Flexibility in these disciplines aligns with real-world application and dynamic project needs. However, excessive accommodating traits may impact academic rigor. Suggests balancing flexibility with professional and academic standards in curriculum design.

Demographic & Learning Style	Findings	Confirmed Previous Work?	Contradicted Previous Work?	Discussion/Novelty
Academic Discipline & Accommodating (Negative Effect)	Disciplines like Engineering and AI showed lower Accommodating traits but higher desired academic outcomes.	Partially (VoPham et al., 2018; Kumar et al., 2023).	No	Suggests that low levels of flexibility may favor academic rigor and competitiveness in certain disciplines. Highlights the need for strategic curriculum planning to balance adaptability with discipline-specific standards.

Figure 5*Mean of Converging and Academic Disciplines**Note.* Created by author in SPSS.**Figure 6***Mean of Accommodating and Academic Disciplines**Note.* Created by author in SPSS.

5.4 Research Question 3 Discussion

This section addresses the third research question regarding how views of higher education students in the UAE relate to personality traits and learning approaches. It does so by providing a thorough and detailed discussion on the themes identified through thematic analysis, discussing their implications, and exploring their alignment with existing literature. The upcoming sections are divided into four sections: 5.4.1 Bachelor's degree Students, 5.4.2 Master's Degree Students, 5.4.3 PhD-level Students, and 5.4.4 Combined Degrees.

5.4.1 *Bachelor's Degree Students*

Four main themes arose from interviewing eight bachelor's degree students: Personality Adaptation, Learning Engagement, Gender Dynamics, and Development Over Time.

5.4.1.1 **Personality Adaptation.**

a) Dual Persona. Depending on the environment, students tend to display varying personas.

For example, Bachelor's Student 2 stated: "At university I'm more guarded and I guess more formal... At home it's a lot more laid-back. I'm much more casual and you could say a bit more outspoken with my family and friends." This change in behaviour seems to be a strategic adaptation to conform to social norms and expectations depending on the environment. This sub-theme shows the adaptive strategies that students use to act and behave in various social contexts, thus highlighting a deliberate change of behaviour in response to various social contexts and expectations. The phenomenon of students exhibiting different personas based on their environment is well-supported in literature. According to Goffman (1959), just like actors in movies, individuals tend to play different roles in their lives depending on the situation and social setting. This concept, known as

the "presentation of self in everyday life," suggests that the behaviours demonstrated in different contexts, such as in university versus at home, are strategically adapted to influence how individuals are perceived. Bachelor Student 2's behaviour demonstrates this, as they adopt a more guarded and formal persona at university, and relaxed, outspoken persona at home among family and friends. This adaptive behaviour has significant implications for understanding student well-being and educational experiences. Markus and Wurf (1987) claims that the self-concept is adaptable and responsive to the demands of different social environments. The ability to switch between personas can be seen as a coping mechanism that allows students to improve their social integration and personal expression in different settings. At the same time, however, could also lead to psychological stress if individuals feel pressure to conform to conflicting identities or if they feel that their authentic self is being suppressed (Higgins, 1987). The 'Dual Persona' theme aligns with existing research on multiple identities and situational identity shifts. Research conducted by Masur et al. (2021) explores how individuals align their behaviours with the perceived norms of their current roles, suggesting that such adaptations are both common and necessary for successful social functioning. However, the constant shift between personas can also challenge an individual's sense of self-consistency, which can impact mental health and self-esteem (Kernis & Goldman, 2006). It is interesting to explore this phenomenon further and consider whether students who adapt their personas based on the environment might also adjust their learning styles accordingly. Moreover, it is important to note that while the idea of students adapting their personas based on different settings and contexts may not be related to the findings of quantitative analyses, it nevertheless explains the variability in personality traits such as Openness and Extraversion across different contexts. For instance, students ranking high in Openness

engage better in academic settings that require active learning, such as in group projects, thus aligning with the positive correlation between Openness and AE. Conversely, such students might engage less in academic settings that require more introspection and reflection such as writing essays, thus aligning with the negative correlation between Openness and RO. This implies that the way students adapt their personas depending on the environments might influence their preferred methods of learning. Overall, the identification of the 'Dual Persona' sub-theme in this study highlights the complex nature of personality adaptation among students. It highlights the strategic, yet potentially stressful adjustments that students make to their personas in different social contexts. This finding not only enriches the understanding of student behaviour and adaptation, but it also prompts further investigation into the impacts of these adaptive strategies on learning styles and overall learning outcomes.

- b) Impact on Social Interaction.** The influence of personality traits on social interactions emerged as another important sub-theme in this study. Introversion and extroversion traits affected students' social energies and their preference of group sizes in collaborative settings. For instance, Bachelor's Student 3 stated: "I think I'm a bit of both [introverted and extroverted] but leaning more towards introversion. I enjoy social gatherings and can be quite outgoing in familiar settings but large groups or meeting new people can feel scary." This sub-theme indicates that personality adaptation involves not only the way students act, but also their social engagement preferences. Thematic analysis identified this topic as an important sub-theme related to how personality traits like introversion and extroversion can affect students' social behaviours. This theme highlights how personality traits can ultimately dictate students' comfort levels in social settings and their level of engagement with group sizes in collaborative settings. The differences in personality traits,

such as introversion and extroversion, plays an important role in how students manage social interactions. Bachelor's Student 3's experiences reflect a common scenario where students might demonstrate traits of both introversion and extroversion but feel more inclined towards one. Introverts, for example, might find large groups or unfamiliar social settings intimidating, preferring smaller and more familiar gatherings where they feel comfortable (Cain, 2012). Moreover, the impact of personality traits on social interactions implies that students' social engagement preferences are deeply rooted within their personality traits. According to Srivastava (2010), this adaptation in social behaviour can also influence their social circles, participation in academic activities, and overall university experience. Furthermore, this sub-theme is consistent with literature that discusses how introverted and extroverted personality traits influence social behaviour and comfort levels in social interactions (Eysenck, 1991). Understanding these dynamics is essential for encouraging inclusive educational environments that cater to diverse social needs. Additionally, this theme can be linked to quantitative findings where Extraversion was shown as having a statistically significant positive relationship with the learning mode of AE. The qualitative insights about how introversion and extroversion impact students' preferences for group sizes in collaborative settings such as group projects, provide a more comprehensive view of how these personality traits might affect students' learning outcomes. Extraversion had a statistically significant positive correlation with AE, which suggests that extroverted students are more engaged in social and active learning environments that. This sub-theme complements this finding by demonstrating how extroverted students prefer environments where they can interact socially. Overall, the 'Impact on Social Interaction' sub-theme highlights the influence of personality traits on students' social experiences. It also stresses the need for awareness of these traits to better

support students in navigating their social environments effectively, which can ultimately influence their overall learning outcomes.

5.4.1.2 Learning Engagement.

a) Active vs. Passive Learning. Numerous students showed a preference towards active learning settings where they can interact directly with the learning materials taught in the classroom. This is evident where Bachelor's Student 3 noted: "Absolutely! I learn best when I can get my hands dirty, you know? I'm the kind of person who really gets concepts quickly when I can touch and do stuff with the materials." This preference highlights the significance of hands-on application in a student's learning process. This student's preference for learning in this manner exemplifies the benefits of hands-on interaction, aligning with Kolb's accommodating learning style, which emphasizes practical experience for effective concept comprehension (Kolb, 1984). Active learning involves student engagement and participation, often through practical exercises, which contrasts with passive learning that typically involves listening to lectures without direct interaction, which typically involves listening to lectures without direct interaction. This preference for active learning, which suggests an inclination for immersive educational experiences that facilitate deeper understanding and retention of information (Bonwell & Eison, 1991), has vital implications for educational strategies. It suggests that using active learning techniques can enhance student engagement and improve learning their outcomes, especially for those who excel in interactive settings (Freeman et al., 2014). This theme aligns with educational research that supports active learning environments as they are generally found to be more effective than traditional lecture-based settings in promoting student learning and engagement (Prince, 2004). Overall, the preference for active over passive learning demonstrates the importance

of engaging and interactive educational practices. Moreover, it is interesting to observe how these learning distinctions between active and passive learning, though not entirely exclusive, resonate to an extent with the characteristics of Kolb's learning styles, Accommodating and Assimilating, respectively. For instance, students with an Accommodating learning style usually thrive in active learning environments due to their preference for practical and hands-on learning experiences, whereas those with an Assimilating learning style might find ease in a more theoretical and structured setting of passive learning (Kolb, 1984). Recognizing the distinction between these preferences can enable educators to have a more tailored effective teaching methods, and thus improve students' overall learning experiences. Finally, it is important to note that since this sub-theme highlights a preference among students for engaging directly with learning materials in active settings, the positive correlation of Openness with AE quantitatively supports this by showing that students who score high on Openness tend to prefer and thrive in these active, experiential learning environments.

b) Individual vs. Collaborative Learning. Another important sub-theme that emerged under 'Learning Engagement' is differences in preferences for individual versus group collaborative learning. Bachelor's Student 1 noted: "After a lecture or a group meeting, I need some time alone to recharge. I prefer one-on-one interactions or small groups where I can have deeper conversations." This suggests different approaches for engaging in learning, which is impacted by personality traits and comfort levels in various situations. This sub-theme highlights the variations in students' preferences for solo versus group learning environments. Moreover, Bachelor's Student 1's comment demonstrates a preference for individual learning sessions or small group interactions, suggesting that these settings enable deeper conversations and personal recharging after group activities. Such students like

Bachelor's Student 1, who might find large group settings draining, often benefit from solitude or more intimate group sizes where they can process information and engage with the material on a deeper level (Cain, 2012). Understanding these preferences is crucial for educators in order to cater learning experiences that integrate both the individual and collaborative learning needs of students. This approach ensures that all students not only engage in ways that best suit their comfort levels, but also their learning styles as well (Johnson, D. W. & Johnson, R. T., 2009). The distinction between individual and collaborative learning is consistent with literature rooted in psychological theories regarding traits of introversion and extroversion, where introverts often excel in quieter, less stimulating environments, while extroverts tend to thrive in more active and social learning environments (Eysenck, H. J. & Eysenck, S. B. G., 1975). Overall, this sub-theme calls for the need for varied teaching strategies that tailor to different personality types and learning styles. Incorporating flexible learning options can maximize student engagement and overall learning effectiveness across a wide range of student needs.

5.4.1.3 Gender Dynamics.

- a) Influence on Learning and Interaction.** Students perceive that their gender plays a role in how they are treated and expected to behave in classrooms, which in turn impacts their participation and overall learning performance. For instance, Bachelor's Student 1 stated: "As a woman, I've often felt that there's this expectation to be more agreeable and nurturing. While these aren't bad traits, it has sometimes led me to prioritize others' needs over my own, especially in group settings." Bachelor's Student 1's reflection captures how societal expectations for women to be agreeable and nurturing can shape behaviour and influence dynamics within educational settings. This highlights the influence role of gender in

influencing students' learning outcomes. As noted by Bachelor's Student 1, gender-related societal expectations can lead to behaviours that prioritize others' needs, potentially at the expense of one's own learning and engagement within the educational perspective. This aligns with a study by Steele (1997) which suggested how gender stereotypes can impact academic participation and the ways in which students are perceived and treated by their peers and instructors. Understanding the influence of gender expectations is crucial for creating inclusive educational environments that foster unbiased and impartial participation, and acknowledge the differences between males and females. This awareness can help educators and educational policymakers implement teaching strategies to reduce gender bias and empower all students to contribute equally in a classroom setting (Eccles, 1994). The quantitative findings regarding gender differences in learning styles, such as women more likely to engage with the Diverging learning style rather than men, could be influenced by societal gender roles, supporting this theme that gender expectations affect how students interact in learning environments. Overall, this theme highlights the important role that gender plays in shaping educational experiences and learning outcomes. Addressing gender biases and stereotypes in educational settings is vital for improving learning equity and enabling all students to maximize their educational potential.

5.4.1.4 Development Over Time.

- a) Evolving Self-Perception and Confidence.** As students advance in their academic studies, they start becoming more confident and notice a change in their self-perception. Bachelor's Student 3 stated: "I think I've become more self-aware and reflective. When I was younger, I used to react more impulsively but now I take time to think things through." This theme highlights the growth aspect of university life, reflecting both personal and academic growth. The sub-theme of 'Evolving Self-Perception and Confidence' addressed the

personal and academic growth of students' experiences as they advance through their university journey. Bachelor's Student 3's experience illustrates this progression, noting increased self-awareness and a more reflective approach to situations compared to earlier impulsive reactions. As students progress academically, there is often a noticeable improvement in their confidence and self-perception. This maturation is reflected in their ability to handle situations thoughtfully, indicating a deeper understanding of themselves and their behaviours (Zimmerman, 2000). This development is key for student development, as increased self-awareness and confidence can significantly influence academic performance and interpersonal relationships. Universities play an important role in cultivating this growth, providing environments that challenge students and support their developmental needs (Bandura, 1977). Overall, this theme highlights the importance of university experiences in fostering self-awareness and confidence among students, highlighting how higher education can serve as a catalyst for both academic and personal growth.

5.4.2 *Master's Degree Students*

From interviewing six Master's degree students, three main themes emerged:

Integration of Theories and Practice, Personality Traits, and Learning Styles.

5.4.2.1 Integration of Theories and Practice.

a) Application of Knowledge. In order to grasp difficult ideas and prepare for professional roles, theoretical knowledge must be applied in the real world. Master's Student 2 stated: "My learning has become more focused on practical applications rather than theoretical knowledge." The shift from theory and toward application-based learning shows how students move from conceptual frameworks to practical experiences that are crucial to their field of

study. The theme ‘Application of Knowledge’ captures the shift from theoretical learning to practical application, the latter being important for mastering complex concepts and preparing for professional roles. Master’s Student 2 illustrated this transition, emphasizing the importance of applying learned knowledge to real-world scenarios, moving beyond theoretical frameworks. According to Billett (2009), this shift highlights the evolution in learning preferences from purely conceptual to experiential, aligning education with professional demands and improving job readiness. This sub-theme theme is supported by the positive correlation of Openness with AE in the quantitative findings, suggesting that Openness facilitates learning engagement in practical applications of theoretical knowledge. Given the integrated findings of quantitative and qualitative analysis, educators and curriculum designers should incorporate educational programs that integrate more practical opportunities in classrooms to bridge the gap between theory and practice, honing skills that are applicable and transferable to professional settings (Saifan et al., 2021). The focus on practical application in a Master-degree level, which been highlighted by Master’s Student 2's experience, is vital for effective learning and preparation for the real world.

5.4.2.2 Personality Traits.

a) Professionalism vs. Personality. It can be challenging for students to maintain a balance between acting like themselves at home and being professional in academic settings. This balance is highlighted by Masters Student 1, who stated: "At university, I’m all about being professional, really focused and super analytical... But at home, I totally relax. I'm a lot more laid-back and funnier." This distinction shows how students adopt different roles and behaviours depending on the situation, representing the dual aspects of their personalities. Master’s Student 1's experience highlights the challenge many students face in balancing

professionalism with their personal identity, specifically in academic settings. At university, they might demonstrate a more professional behaviour, alert and focused, which contrasts drastically with their more relaxed personas at home (Goffman, 1959). The ability to adapt different behaviours and expectations across various settings illustrates the adaptability required of students and highlights the impact of environmental expectations on behaviour. These adaptations are crucial for managing their different personas, thus demonstrating the broader influence of such dynamics on their overall learning development. This sub-theme could explain the observed relationships of Conscientiousness with different learning styles, where professional behaviour may align with structured and organized learning environments.

b) Introversion and Extroversion. The manner in which students participate in social activities is greatly influenced by personality traits such as extroversion and introversion. This adaptation, which shows how students push outside of their comfort zones to meet demands in the classroom and in their careers, is important for both personal and professional growth, as Master's Student 1 stated: "I identify more as an introvert, which suits the research aspect of my studies. I enjoy data analysis and reading journals articles, which requires long periods of focused alone time, which I kinda enjoy. But like you know, I learned to enjoy more extroverted activities such as attending conferences." This reflection illustrates the significant impact of personality traits on participation in social activities within academic settings. Identifying mostly as an introvert, Master's Student 1 has nevertheless learned to engage in more extroverted activities, such as attending conferences and networking events, but only out of necessity. This adaptation is crucial for both personal and professional growth, and demonstrates how students extend beyond their comfort zones in order to meet the demands of their education (Cain, 2012). This sub-theme is consistent with the quantitative findings which reflects in the variability in Extraversion's correlations with AE and RO, thus supporting that

extroverted students may engage with the class material differently based on the learning environment. Overall, the adaptation of this behaviour not only supports students' educational and professional development, but also highlights the dynamic relationship between personality traits and the demands of external environments (Eysenck, 1991).

c) Organization and Spontaneity. In the classroom, students need to be organized, but at the time, also value spontaneity in their personal lives. Master's Student 1 stated: "In my Master's program, being organized is not just a preference, it's a necessity... However, I do appreciate spontaneity in my personal life; it provides a necessary balance." This theme stresses the need for balance with unplanned personal experiences, and how important organization is in achieving learning outcomes. Master's Student 1 highlights the benefits of both organization and spontaneity, highlighting a common theme among students balancing academic and personal lives. In a Master's program, organization is not simply a preference, but a crucial element in effectively managing the demands of more difficult concepts. Students valuing spontaneity in their personal life provides a counterbalance to the more structured and organized learning environment. However, this balance is important for maintaining a student's well-being and ensuring academic success, as an organized approach helps in getting through complex coursework and meeting deadlines, while spontaneous personal activities offer mental relaxation and rejuvenation (Bartlett et al., 2021). This balance between organization and spontaneity emphasizes the broader educational narrative that successful students must manage structured academic coursework while finding space for personal growth and relaxation (Vanderkam, 2012). Additionally, it is interesting to note that while Conscientiousness's correlation with certain learning styles such as CE and AC could reflect the need for organization in academic settings, personal spontaneity might emerge more in non-academic contexts.

d) Resilience. Resilient students are better able to overcome both personal and academic obstacles. Resilience is essential for overcoming both personal hardships and the demands of university coursework. Master's Student 4 stated: "I've found resilience to be key; tackling a thesis project really tests your limits." This emphasizes the critical role of resilience in navigating the rigorous demands of university coursework, including challenging projects such as a thesis. Masten (2001) states how the ability to persist through difficulties, adapt to stressful situations, and recover from setbacks is vital in academic settings where students frequently face intense demands and high expectations. Moreover, resilience teaches students to endure and thrive in high-pressure environments, which can become useful in their careers. In fact, Werner (1993) claims that resilience not only aids students in academic success but also prepares them for professional challenges which they will encounter after graduation, thus reinforcing the importance of such a personality trait in both educational and career environments.

e) Openness. Learning experiences are greatly improved when a student is receptive to new ideas. This is evident when Master's Student 5 says: "Being open to new ideas has greatly enhanced my learning experience," thus highlighting that openness to learning and embracing new ideas is important in improving one's academical levels and rising to new challenges. Being open to new ideas not only facilitates learning outcomes, but also prepares students to tackle new challenges effectively. This openness involves a willingness to explore diverse perspectives and integrate new approaches into one's understanding, which is crucial for both academic and personal growth. The value of this trait is well-supported in educational psychology, as openness is associated with increased creativity, better problem-solving skills, and greater adaptability to change (McCrae & Costa, 1997). Moreover, Openness is directly supported by the positive correlation with AE in the quantitative findings of this study, further

supporting the claim that this personality trait enhances student engagement in active learning environment. Embracing a variety of ideas and approaches allows students to broaden their academic horizons and prepares them for complex real-world scenarios, making openness a fundamental personality trait for successful lifelong learning (Kashdan & Rottenberg, 2010).

f) Conscientiousness. Academic environments such as universities tend to place a high value on conscientiousness, a trait characterized by organization, diligence, and punctuality. Several Master's students demonstrated this trait. This can be seen in Master's Student 1, who noted: "I stay on top of all my coursework and projects because I'm naturally very organized." Such a trait is a necessary quality for effectively handling the demands of a demanding academic program such as a Master's degree. This student highlights the critical role of conscientiousness in managing the demands of academic environments, and is essential for staying on top of coursework and projects (Costa & McCrae, 1999). Based on the quantitative findings of this study, Conscientiousness is correlated with several learning styles such as CE and AC, indicating that this trait influences students' learning preferences and academic engagement. This trait is highly valued in academic settings because it directly contributes to students' ability to manage their studies efficiently, meet deadlines, and maintain high standards of work. The importance of conscientiousness extends beyond academic success; it also influences long-term career outcomes and personal development. A study conducted by Barrick and Mount (1991) demonstrated that conscientious students tend to achieve higher grades and perform better in their professional lives due to their methodical and responsible nature. Thus, conscientiousness is not only advantageous for handling academic challenges but also for preparing for future career prospects.

5.4.2.3 Learning Styles.

a) Collaborative Learning. Collaborating and interacting with each other is a great way for many students to grow and succeed. In addition to improving understanding through conversation and interaction, a preference for collaborative learning also helps students in building a sense of community and shared knowledge among each other. Master's Student 3 explains this notion by stating: "I thrive in group settings; it's fun to bounce ideas off classmates." With this approach, students are better prepared for professional settings where effective communication and teamwork are crucial, especially in fields that demand these qualities. Moreover, this student highlights the benefits of collaborative learning, noting how engaging in group settings and exchanging ideas with classmates is not only enjoyable but also enhances understanding and overall learning outcomes. This learning approach fosters a sense of community and shared knowledge, which is important in a university setting. Likewise, the findings of this study showed Extraversion having a statistically significant positive correlation with AE, indicating students' preference for interactive learning environments, such as collaborative learning. Moreover, collaborative learning prepares students for professional environments that require effective communication and teamwork, skills that are increasingly important in today's collaborative and interdisciplinary fields. Furthermore, the emphasis on teamwork aligns with literature (Johnson, D. W. & Johnson, R. T., 1989) that suggests cooperative learning strategies to enhance students' problem-solving abilities and overall academic achievement. By participating in collaborative learning environments, students not only improve academically but also develop essential interpersonal skills needed for successful careers.

b) Visual Learning. Students who process information and retain information better through charts, images, and diagram, highlight an important learning style that relies on visual learning. Master's Student 2 said: “Visual aids like charts and graphs help me understand complex concepts much quicker,” adding that the dependence on visual aids emphasizes the variety of learning styles and the need for instructional strategies that take this learning style into account. A study conducted by Mayer and Anderson (1991) claims how visual aids can improve understanding and memory, particularly in fields that deal with abstract ideas or complex data. The preference for visual learning draws attention to the need for diverse instructional strategies that utilize various learning styles in order to better meet students’ overall learning outcomes. Another study by Mayer (2002) states how visual learning can aid in deeper understanding and memory retention, making it an essential component of effective teaching practices. Thus, incorporating visual elements into educational materials can greatly benefit visual learners, ultimately helping them to better grasp, retain information, and meet their overall learning outcomes.

c) Practical Application. Many students stress how important it is to apply theoretical knowledge to real-world situations. This type of learning is especially common in professional programs and applied sciences, where transferable skills are just as valuable as acquired knowledge. Master’s Student 6 noted: “For me, learning has to be hands-on. I absorb so much more when I can apply what I've learned in real-world situations.” By placing a strong emphasis on practical application, learning experiences become more relevant and effective by bridging the gap between theoretical knowledge and real-world application. Master’s Student 6 comment highlights the significance of practical application in learning, emphasizing how hands-on experience enhances students’ understanding and retention of information. This approach is especially important in professional programs and applied sciences, where the

ability to transfer theoretical knowledge to real-world situations is as crucial as the knowledge itself. By applying concepts directly in practical settings, students not only deepen their understanding but also gain valuable skills that are directly relevant to their future careers. This method of learning bridges the gap between classroom theories and actual professional practices, making educational experiences more relevant and effective. Moreover, this sub-theme is supported by the quantitative findings of this study, which showed a statistically significant positive correlation of Openness with AE, indicating that students who are more open to new experiences prefer practical and hands-on learning. The emphasis on practical application aligns with educational research that highlights the importance of experiential learning in fostering deeper engagement, which ultimately leads to more effective learning outcomes (Kolb, 1984). Hence, integrating practical experiences into educational curriculum is essential for preparing students in meeting the demands of the professional world effectively.

5.4.3 *PhD Degree Students*

From interviewing four PhD degree students, four main themes emerged: Academic Journey, Learning and Teaching Methods, Personality Traits, and Learning Styles.

5.4.3.1 Academic Journey.

a) Learning Adaptability. As academic demands increase, learning strategies must also be flexible to adapt. This emphasizes a shift from independent to more collaborative learning approaches, reflecting the complexity and interdependence of advanced academic work. PhD Student 1 noted, “Oh, it’s very important to be adaptable. Because even as a teacher, I make sure to adapt my teaching methods to fit different student.” The significance of acquiring adaptability in higher education is demonstrated by PhD student 1, especially with the

increasing demands of academics. They explain a change in learning styles from more independent to collaborative, which is more appropriate for advanced academic settings where complexity and interdependence are needed. This adaptation entails a shift from their undergraduate studies where they were required to be proactive in seeking help when needed, in addition to working with peers. This adaptability in learning approaches reflects larger educational trends that place an emphasis on collaboration and interdisciplinarity, and it is essential for addressing the complex challenges of graduate-level work. This kind of flexibility helps students succeed academically as well as in professional settings where communication and teamwork are crucial. This changing strategy is in line with educational research that indicates flexible and dynamic learning strategies improve knowledge integration and problem-solving skills, which are critical for success in the classroom and in the workplace (Bransford et al., 2000).

5.4.3.2 Learning and Teaching Methods.

a) Innovative Practices. In academic research, creative approaches to teaching and learning are becoming more and more significant. These kinds of innovations enable more effective and engaging learning as well as the dissemination of research, as PhD Student 1 stated: “And using interactive digital tools in our research has revolutionized the way we can teach complex topics.” The ‘Innovative Practices’ sub-theme draws attention to the growing significance of innovative approaches to teaching and learning in scholarly research. According to PhD Student 1, the use of interactive digital tools has revolutionized how research findings are disseminated and how difficult subjects are understood. This focus on innovation is in line with how education is changing, as technology is essential to improving learning outcomes and promoting knowledge sharing (Means et al., 2010). Research indicates that incorporating

cutting-edge techniques like digital tools and multimedia resources promotes critical thinking, knowledge retention, and student engagement (Dede, 2009; Mayer, 2004). Thus, adopting cutting-edge research methodologies in academia advances and makes scholarly work in a variety of fields more accessible while also improving teaching and learning outcomes. While no connection can be made between this sub-theme and the quantitative findings of this study, it can be implied that students ranking higher in Openness are more likely to embrace newer forms of learning and innovative teaching methods, which could potentially enhance educational outcomes.

b) Critical Thinking and Analysis. A primary goal of PhD education is to improve students' critical thinking abilities. "PhD study has significantly sharpened my analytical skills, teaching me to critically evaluate information and theories critically," said PhD student 4. This development is essential in order to develop the analytical mindset required for advanced research and problem-solving. This sub-theme talks about how improving students' critical thinking skills is the main goal of PhD education. According to PhD Student 4, pursuing a doctorate can help develop a critical mindset and sharpen analytical abilities, both of which are crucial for conducting advanced research and solving problems. This focus on critical thinking is in line with the larger objectives of higher education, which include promoting intellectual rigor and independent inquiry (Ennis, 1987). Studies show that developing critical thinking abilities helps students analyse complicated data, assess supporting information, and come to well-informed conclusions (Paul & Elder, 2006). Thus, incorporating critical thinking into doctoral education gives students the cognitive tools they need for success in academia and beyond, in addition to preparing them for scholarly inquiry.

5.4.3.3 Personality Traits.

a) Openness. Adapting to the different demands of PhD research requires being open to new experiences. "Exploring new methods and ideas has really changed the way I approach my research," said PhD student 3. For research to be innovative and flexible, this openness is necessary. This is also supported by its positive correlation with AE, indicating its role in fostering engagement with new and complex academic materials. The sub-theme of 'Openness' emphasizes the importance of being receptive to new experiences and ideas in the context of PhD research. According to PhD Student 3, research approaches are greatly influenced by one's openness to new theories and methodologies, which promotes creativity and adaptability. This characteristic fits with the idea of being open to new experiences, which is a personality trait linked to creativity, curiosity, and adaptability (Costa & McCrae, 1999). Research suggests that people with high levels of openness are more likely to embrace change, seek out different viewpoints, and investigate unusual concepts, all of which are helpful for coming up with fresh ideas and solutions (Costa & McCrae, 1992). Therefore, encouraging transparency among PhD candidates develops a research culture that values creativity, teamwork, and intellectual curiosity, which enhances academic endeavours and advances knowledge across disciplines.

b) Determination. Resolving challenges and finishing difficult research projects requires determination. PhD student's 1 comment: "It's my determination that keeps me going through even the most difficult phases of my PhD," highlights the tenacity needed to succeed in such demanding academic settings. The sub-theme of "Determination" explores the value of perseverance in overcoming challenge and completing demanding research projects.

According to PhD Student 1, perseverance is a motivating factor that helps people get through

the most difficult stages of their doctoral program. This resilience is consistent with the idea of grit, which includes a strong desire and tenacity in the face of long-term objectives (Duckworth et al., 2007). Studies indicate that people possessing a high degree of grit are more capable of overcoming obstacles, staying focused in the face of difficulty, and succeeding in the end (Duckworth & Quinn, 2009). Thus, encouraging perseverance in PhD candidates is crucial to developing a robust academic mindset that enables people to persevere in the face of difficulties and eventually fulfil their academic goals.

5.4.3.4 Learning Styles.

a) Reflective Learning. Reflective learning entails interacting deeply with the subject matter in order to fully comprehend it. "I prefer to learn by taking time to deeply reflect on each topic, integrating it thoroughly into my existing knowledge," stated PhD Student 5. This method facilitates deep understanding and integration of difficult ideas. The sub-theme of 'Reflective Learning' emphasizes the importance of engaging deeply with subject matter to achieve comprehensive comprehension within the context of PhD education. According to PhD Student 5, the preference for reflective learning entails a purposeful process of integration and introspection that promotes a sophisticated comprehension of difficult subjects. This is in line with the ideas of metacognition, which involves actively controlling and observing one's cognitive functions to improve learning (Flavell, 1979). Research suggests that reflective practices that support deep learning, conceptual understanding, and knowledge transfer include journaling, self-evaluation, and critical reflection (Moon, 2004; Schön, 2017). As a result, integrating reflective learning techniques into doctoral education promotes knowledge

acquisition as well as the growth of higher order thinking abilities necessary for scholarly research and intellectual development.

b) Problem-based Learning. Engaging students in real-world problem-solving through academic concepts improves learning retention. "I find that I learn best when applying concepts to solve practical problems that matter in the real world," claimed PhD Student 2. This approach guarantees that academic work has practical applications in addition to making learning more relevant. This sub-theme emphasized the effectiveness of involving students in real-world problem-solving situations to improve learning retention in PhD programs. PhD Student 2's preference for learning via hands-on problem-solving emphasizes how important it is to apply abstract ideas to real-world situations. This teaching strategy is in line with constructivist principles, which place a strong emphasis on authentic tasks, inquiry-based learning, and active engagement (Jonassen & Rohrer-Murphy, 1999). Research suggests that contextualizing learning within meaningful and relevant contexts through problem-based learning fosters deeper understanding, critical thinking, and transferable skills (Hmelo-Silver, 2004; Savery, 2006). As a result, incorporating problem-based learning techniques into doctoral education improves learning outcomes while also giving students the transferable skills and competencies they need to handle challenging situations both inside and outside of the classroom.

5.4.4 Combined Degrees

Finally, an overall analysis using thematic analysis was conducted on interviews from students at the Bachelor's, Master's, and PhD levels, collectively leading to the identification of four main themes: Personality Traits, Learning Styles, Gender Influences, and Technological Integration.

5.4.4.1 Personality Traits.

a) Extroversion vs. Introversion. Students extroverted or introverted personality traits tend to influence their preferences and behaviours. This is shown when Bachelor Student said: "Being extroverted has made me favour interactive learning environments," demonstrating how extroverted students can thrive in more collaborative and socially engaging settings as opposed to introverts, who are more inclined towards solitary study environments. This sub-theme highlights the impact of personality traits on their learning preferences and behaviours in academic environments. Bachelor Student 2 demonstrates how extroverted people typically do well in collaborative, socially engaging learning environments that emphasize interpersonal interaction and teamwork. This finding is consistent with the extroversion-introversion dimension of personality, according to which extroverts are defined as being outgoing, assertive, and drawn to outside stimuli (Costa & McCrae, 1992). Moreover, the findings are also consistent with quantitative analysis where the relationship of Extraversion with AE supports the notion that extraverts thrive in more active and social learning environments. According to research (Eysenck, 1991; Furnham, 2012), personality traits have an impact on people's study habits, learning preferences, and classroom engagement, which emphasizes the significance of considering individual differences in educational contexts. Thus, by creating customized learning environments that meet a range of learning preferences and styles, it is possible to maximize learning experiences and foster academic success by identifying and addressing students extroverted or introverted tendencies.

b) Adaptability in Different Settings. Students frequently find themselves having to modify their behaviour in social and academic contexts. Stressing this flexibility demonstrates how students can adapt different aspects of their personalities to fit in with different social groups

or to feel more at ease. This is evident when Master's Student 1 said: "I'm analytical at university, but I'm laid back at home." Moreover, this student demonstrates how people frequently display distinct aspects of their personalities based on the setting in which they find themselves. They show adaptability to fit in with social norms or to improve their own comfort. This idea is consistent with the theory of situational and contextual influences on behaviour, which holds that people's behaviours are influenced by the expectations of various social contexts and situations (Mischel, 1977). According to research, adaptability is a desirable quality linked to social integration, stress reduction, and effective interpersonal communication (Sierra, 2011). As a result, recognizing how adaptable students are in a variety of environments emphasizes how crucial it is to promote resilience and flexibility in both academic and social contexts, which eventually leads to successful and holistic personal development.

c) Influence on Group Dynamics. Personality traits also influence roles in group projects; certain traits pave the way for supportive and leadership roles. PhD candidate 3 states: "My assertiveness makes me take leadership in groups...". This demonstrates how specific traits can directly affect how individuals act in groups and how roles are assigned in academic collaborations. This sub-theme explores how students' personalities affect the roles and behaviours they play in group projects and, in turn, how that affects group dynamics. As PhD student 3 pointed out, being assertive can make people more likely to assume leadership positions within organizations. This finding is consistent with group dynamics research, which indicates that certain personality types like extraversion and conscientiousness, are more likely to become leaders and influencers in group settings (Judge et al., 2002). Moreover, the findings are linked to the quantitative findings of this study, where extraversion's positive correlation with AE suggests that extroverted student may take more active roles in group

learning situations. Additionally, personality traits influence people's inclination to take on supportive roles, which enhances the group's overall effectiveness and cohesion (Barry & Stewart, 1997). To maximize collaboration and capitalize on people's strengths in academic projects and collaborative endeavours, it is crucial to understand how personality affects group dynamics.

5.4.4.2 Learning Styles.

a) Preference for Learning Environments. This sub-theme looks into the relationship between preferred learning environments and academic performance. "I prefer self-study over group sessions, it fits my introverted nature..." PhD student 2 explained. This statement, emphasizing the effect that a person's comfort level in a learning environment can have on engagement and performance. The sub-theme emphasizes how important it is for people's preferred learning styles to influence their academic performance. The preference for independent study, as expressed by PhD Student 2, is consistent with their introverted personality, indicating that comfort levels have a big impact on engagement and performance. This is consistent with research on learning styles, which suggests that people have preferences for a particular learning preference, like visual, auditory, or kinaesthetic, according to their cognitive and personality traits (Felder, 1993; Keefe, 1979). Moreover, even if the relationship was not particularly strong, the statistically significant negative correlation between Extraversion and RO can explain this sub-theme further. Lower levels of extroversion, which in this case are introverted students, are more likely to thrive in learning settings when adopting the RO learning mode, where its introspective approach to learning can lead to better learning outcomes. This further demonstrates how a preference for various learning impacts are driven by the very essence of a student's personality type. Furthermore,

study efficacy, motivation, and focus are all influenced by people's comfort and sense of agency in their learning environments (Deci & Ryan, 1985; Pekrun et al., 2002). As a result, taking into account the preferences of students for their learning environments is crucial to creating inclusive and successful learning environments that support a variety of learning styles and encourage grades.

b) Active vs. Reflective Learning. It is easier to understand how students absorb and apply knowledge differently depending on whether they prefer to observe and reflect or engage directly with the material when they recognize the distinctions between thoughtful observation and active participation. This is shown when Master's Student 4 says: "I learn best through hands-on experience...". This theme emphasizes the difference between active hands-on participation and thoughtful observation in the process of learning. The preference for practical experience, as mentioned by Masters Student 4, points to a learning style that emphasizes experiential learning and active engagement. This observation is consistent with learning style research, which makes a distinction between reflective learners, who gain from observation and contemplation, and active learners, who flourish on direct engagement with the material (Kolb, 1984; Vermunt & Vermetten, 2004). Moreover, this sub-theme is further supported by the relationships of personality traits like Openness and Extraversion with AE, indicating preferences for more active learning environments. Additionally, learning styles affect how information is processed, retained, and applied, which emphasizes how crucial it is to modify educational experiences to suit a range of learning preferences (Coffield et al., 2004; Entwistle, 1988). Thus, understanding students' inclinations toward reflective or active learning helps to shape instructional strategies that maximize understanding, application of knowledge, and engagement in a variety of learning contexts.

c) Theoretical vs. Practical Learning. Some students feel that it's critical to have a balance or to prioritize theoretical knowledge over real-world application. According to PhD Student 3: "Applying theories in real-world scenarios enhances my learning....," suggesting that practical application can deepen and expand theoretical knowledge, making learning more relevant and enhancing retention. Moreover, this student's inclination towards utilizing theories in real-life situations highlights the significance of practical application in strengthening theoretical comprehension. This observation is consistent with the principles of experiential learning, which assert that concepts learn best when they are applied to real-world contexts and contextualized (Kolb, 1984; Moon, 2004). In addition, studies (Lave & Wenger, 1991; Wenger, 1998) indicate that connecting theory and practice fosters critical thinking, deeper comprehension, and knowledge transfer, all of which increase the relevance and retention of learned material. Additionally, this sub-theme is supported by the quantitative findings of this study, which showed a statistically significant positive correlation of Openness with AE, indicating that students who are more open to new experiences prefer practical and hands-on learning. Therefore, recognizing students' preferences for theoretical or practical learning informs instructional design that integrates hands-on experiences, case studies, and real-world applications to enrich learning experiences and foster holistic understanding.

5.4.4.3 Gender Influences.

a) Perceptions and Expectations. In academic settings, students encounter gender stereotypes. "As a woman in Computer Science, I feel pressure to constantly prove myself," said Bachelor's Student 1. This demonstrates how gender can influence how one views themselves and the pressure to meet or exceed cultural norms. The impact of gender

stereotypes on students' experiences in academic settings is clarified by this sub-theme.

According to Bachelor's Student 1, the pressure to succeed in Computer Science as a woman reflects the impact of social norms and gender-based expectations on self-perception and academic achievement. This finding is consistent with research on stereotype threat, which argues that when stigmatized individuals encounter stereotypes about their abilities, they may become anxious and self-conscious (Steele & Aronson, 1995). This observation is also supported by this study's quantitative differences in learning styles based on gender, reflecting how societal expectations influence learning preferences. Gender stereotypes can also affect students' educational paths and professional goals by influencing their academic and career aspirations (Eccles, 1983; Hackett & Betz, 1981). To create inclusive and encouraging learning environments where all students, regardless of gender identity, can flourish and succeed, it is crucial to acknowledge and address gender-based perceptions and expectations.

b) Influence on Learning and Personality. Gender can also have an impact on learning preferences and personality expression in educational settings. PhD Student 1 states, "Gender shapes my interactions and how I'm perceived in group work..." suggests that gender dynamics can affect social interactions and personal identity in academic settings. Gender dynamics have the potential to mould learning preferences and impact how people express their personalities in educational environments, according to this sub-theme. The impact of gender dynamics on social dynamics and the formation of personal identities is highlighted by PhD Student 1's statement that gender plays a significant role in shaping interactions and perceptions in group work. This observation is consistent with research on gender and socialization, which suggests that behaviours, communication styles, and social interactions can be influenced by cultural norms and societal expectations related to gender (Eagly & Wood, 2013; Wood & Eagly, 2002). This sub-theme is also reflected in the quantitative

findings on gender differences in learning styles, suggesting that gender impacts how personality traits are expressed in various learning settings. Additionally, gender stereotypes can affect how people view themselves and take on roles in academic settings, which can help to maintain gender-based differences (Diekman et al., 2010; Ridgeway & Correll, 2004). To create inclusive and equitable learning environments that respect and acknowledge a variety of identities and experiences, it is necessary to consider the impact that gender has on personality expression and learning.

5.4.4.4 Technological Integration.

a) Use of Digital Tools in Learning. Academic experiences can be revolutionized using digital tools. PhD student 5 highlighted the advantages of technology in enhancing learning efficiency and organization by saying, "Using apps for organizing my study has been a game changer." The transformative impact of digital technology on academic experiences is highlighted in this sub-theme. The statement emphasizes how the use of digital tools, like study apps, can greatly improve the organization and efficiency of learning. This finding is consistent with research on educational technology, which emphasizes how digital tools can support information access, collaboration, and personalized learning (Means et al., 2010; Siemens & Long, 2011). Additionally, incorporating digital tools into teaching methods helps students develop their digital literacy and gets them ready for the demands of the modern workforce (Bawden & Robinson, 2009). While this sub-theme was not related to the quantitative findings of this study, qualitatively, it remains an important area in terms of understanding the role technology can play in enhancing students' overall learning outcomes. Therefore, policies and practices in education that aim to use technology to improve student

engagement, achievement, and success in academic settings are informed by the recognition of the benefits of digital tools in learning.

b) Online Learning Adaptability. The value of adaptability and flexibility in response to changes in the learning environment, particularly in online settings emphasized by Bachelor Student 6 as they stated, " Switching to online classes required adjusting my learning methods..." The need for this adjustment to keep up in the hectic educational environments is becoming more and more apparent. This sub-theme emphasizes the value of flexibility and adaptability in reaction to changes in the educational landscape, particularly in online settings. The statement by Bachelor Student 6 emphasizes the need to adapt teaching strategies to the needs of online learning environments, highlighting the increasing significance of flexibility in keeping up with the ever-changing landscape of educational settings. This finding is consistent with research on online learning, which highlights the necessity for students to develop digital literacy and adaptive strategies to interact with virtual learning environments (Conole & Dyke, 2004; Siemens, 2005). Furthermore, the capacity to adjust to virtual learning settings cultivates resilience, self-control, and lifelong learning proficiencies that are essential for triumph in modern educational settings (Anderson, 2008; Garrison & Vaughan, 2008). While this sub-theme was not directly measured quantitatively, it nevertheless highlights a potential area for future research on how adaptability to online learning impacts students' overall learning outcomes. As a result, understanding the importance of flexibility in online learning guides the development of instructional strategies meant to improve students' effectiveness and readiness for digital learning environments.

It is important to note that this sub-theme, which was resulted during the COVID-19 pandemic, highlights the importance of being flexible and adaptable in educational settings that were rapidly transitioning from face-to-face to online learning. This period of a unique

educational disruption demanded a swift adaptation in teaching methods, underlining the importance of resilience and flexibility in both students and educators alike. The findings of this study, derived from interviews conducted online due to the pandemic's restrictions, might reflect the specific context of blended learning environments. It is possible that student responses might have been different in a purely face-to-face interview. This context is crucial for interpreting the data, as the need for adaptability may have been heightened by the sudden shift to online learning platforms, potentially amplifying the strong display of flexibility and adaptability among the students. Additionally, the reliance on online interviews could have influenced how students reported their experiences. Interactions in an online format can differ significantly from face-to-face interactions, possibly affecting the depth and nature of the responses (Bond, 2020). Therefore, as educational environments return to their traditional formats post-pandemic, it remains to be seen whether the adaptability and flexibility demonstrated by students during the pandemic will continue to be evident. Further research could investigate if these adaptive behaviours have been integrated into students' learning strategies permanently, or if they were temporary adaptations to the unique challenges posed by the pandemic.

Chapter 6: Conclusion

6.1 Introduction

This study utilized the Big Five Personality Traits (BFPT) and Kolb's Experiential Learning Theory (KELT) as theoretical frameworks to examine the complex relationship between personality traits and learning approaches among higher education students in Dubai, UAE. By employing an explanatory mixed-methods approach, the research provides detailed analysis that significantly enhances the understanding of these constructs. Additionally, the study explored and compared demographic variables within these constructs, further enriching the analysis. The findings contribute to literature within educational psychology and offer various implications and recommendations for educators and educational policymakers. This chapter provides a summary of the study's rationale, the selection of research questions, the methods employed, and the key findings. It is followed by a discussion of the study's implications, contributions, limitations, and suggestions for future research directions.

6.2 Overview of the Study

The study's findings, which offer in-depth analyses based on the Big Five Personality Traits (BFPT) and Kolb's Experiential Learning Theory (KELT) models, considerably advance the knowledge of personality traits and learning strategies within the unique context of Dubai's higher education landscape. This research addresses a critical gap in understanding how these two frameworks interact, particularly in a global education hub like the UAE, where diverse student populations engage in increasingly blended and online learning environments. By bridging this gap, the study provides actionable insights for educators and institutions, enabling them to design psychologically attuned teaching strategies that enhance student engagement and success in a rapidly evolving educational landscape.

To achieve these objectives, the study was guided by three research questions:

1. **Relationship between Personality Traits and Learning Approaches:** The first question quantitatively examines the psychological relationship between BFPT and KELT.
2. **Impact of Demographic Variables:** The second question quantitatively explores sociological factors such as gender, age range, degree type, and academic discipline to determine their influence on personality traits and learning approaches.
3. **Students' Views and Experiences:** The third question qualitatively investigates higher education students' perspectives on how personality traits align with learning approaches.

This study employed an explanatory mixed-methods approach to answer these questions. The quantitative phase focused on identifying fundamental relationships and patterns between BFPT and KELT, particularly examining learning modes and styles. This phase also explored the role of demographic factors in shaping these relationships. The qualitative phase complemented these findings through thematic analysis, providing rich insights into how personality traits and learning approaches manifest in educational settings while accounting for various demographic variables.

The quantitative results revealed significant relationships between personality traits and learning strategies, as well as the influence of demographic factors. The qualitative findings built on these results, adding depth and context by exploring students' subjective experiences and perspectives. This integration of methods enabled a more thorough understanding of the variables influencing learning preferences, offering a complete picture of how individual differences affect students' educational experiences and outcomes. The complementary nature of the two stages highlights the importance of mixed methods in educational research. While the quantitative data identified statistical relationships and patterns, the qualitative data enriched these findings by contextualizing

them within real-world educational settings. Together, they provide a comprehensive understanding that can inform the development of adaptive teaching methods tailored to diverse learner profiles. Overall, this study's thorough analysis not only examines the complex relationship between personality traits and learning preferences but also considers the impact of demographic variables, offering significant insights into educational psychology. By integrating quantitative and qualitative findings, the research contributes to a holistic understanding of how individual differences influence learning outcomes. These findings aim to guide educators, policymakers, and instructional designers in creating effective pedagogies that support student success in blended and online learning environments.

After investigating the connections between personality traits (Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism) and learning modes (AC, CE, RO, and AE), several important conclusions were drawn (these are shown in Table 35). Multiple regression analysis failed to support the weak negative correlation that Openness showed with RO. On the other hand, through both regression and correlation analysis, Openness revealed a statistically significant positive relationship with AE, suggesting a continuous positive influence on this personality trait. Regression analysis verified the weak negative correlation between Conscientiousness and CE, indicating that a higher level of Conscientiousness could potentially deter practical, hands-on experiences. This personality trait demonstrated a favourable correlation with AC that was consistent across analyses, suggesting a tendency towards this mode of learning. Agreeableness showed a weak negative correlation with RO, which regression analysis did not confirm, and a weak positive correlation with AE, not supported by further regression analysis. Therefore, there is insufficient evidence to conclude that AE has a significant impact on learning modes, even though extraverted students may favour it slightly. These findings

suggest that agreeableness may not significantly influence these learning modes.

Neuroticism revealed a weak positive relationship with AE, which was supported by regression analysis, indicating that higher neuroticism could slightly enhance engagement with AE. These results deepen the understanding of how specific personality traits influence preferred learning modes, offering educators a framework for tailoring instructional methods to align with students' personality traits within blended learning environments.

Table 35**Personality Traits & Learning Modes**

Personality Trait	Learning Modes	Correlation	Conclusion
Openness	Reflective Observation	Weak negative correlation	Not statistically significant
	Active Experimentation	Positive correlation	Statistically significant
Conscientiousness	Concrete Experience	Weak negative correlation	Statistically significant
	Abstract Conceptualization	Positive correlation	Statistically significant
Agreeableness	Reflective Observation	Weak negative correlation	No statistically significant
	Active Experimentation	Weak positive correlation	No statistically significant
Neuroticism	Active Experimentation	Weak positive correlation	Statistically significant

Numerous important conclusions were drawn from the analysis of the connections between personality traits and learning styles (Diverging, Assimilating, Accommodating, and Converging). These can be shown in Table 36 below. A weak negative correlation was found between openness and the diverging learning style; this relationship was also marginally supported by logistic regression. In contrast, logistic regression analysis did not support the positive weak correlation that Openness had with Accommodating style. Logistic regression was employed to confirm the positive correlation between Conscientiousness and the assimilating learning style, which was found to be strongly correlated with this trait. On the other hand, Diverging and Conscientiousness were found to have a significant negative relationship in both logistic regression and correlation, indicating a highly contrasting relationship between the two variables. Interestingly, logistic regression revealed a significant positive relationship even though the correlation analysis did not find any correlation between accommodating and Conscientiousness. This suggests that there are deeper levels of interaction that correlation alone is unable to capture. Although the relationship between Extraversion and Accommodating was only marginally positive, logistic regression did not support this relationship, suggesting that the initial correlation may not have a significant impact on learning preferences. Nevertheless, logistic regression supported the positive correlation between Agreeableness and convergent learning styles and the negative relationship between Agreeableness and assimilating learning styles. This suggests that Agreeableness has a substantial influence on these learning styles. Finally, it was reported through logistic regression that Neuroticism had a significant negative relationship with Accommodating, even though it had a non-significant correlation with it in the correlation analysis. This shows that a preference for accommodating learning styles may be negatively impacted by higher levels of neuroticism, implying that students with higher levels of Neuroticism may be less likely

to adopt accommodating learning styles. These findings highlight the importance of personality traits' influence on learning styles, providing educators with insights to customize and adapt teaching strategies for students with diverse learning styles.

Table 36**Personality Traits & Learning Styles**

Personality Trait	Learning Style	Correlation	Conclusion
Openness	Diverging	Weak negative correlation	Marginally supported by logistic regression; relationship exists but weak
	Accommodating	Positive weak correlation	Not statistically significant
Conscientiousness	Assimilating	Strong positive correlation	Statistically significant
	Diverging	Significant negative correlation	Statistically significant
	Accommodating	No correlation	Statistically significant
Extraversion	Accommodating	Marginally positive correlation	Not statistically significant
Agreeableness	Converging	Positive correlation	Statistically significant
	Assimilating	Negative correlation	Statistically significant
Neuroticism	Accommodating	Non-significant correlation	Statistically significant

Numerous significant conclusions were drawn from the analysis of the connections between personality traits and demographics (gender, age, degree type, and academic discipline). The results of the multiple regression analyses (Table 37) showed that there was a significant increase in both openness and agreeableness among students as they get older. There was also a clear positive correlation between Openness and age. The results of the ANOVA supported this trend and further demonstrated the relationship between age and openness. Similarly, the Agreeableness analysis showed a strong positive correlation with age. According to the regression analysis, there was a significant effect, with Agreeableness increasing with age. The results of the ANOVA supported this relationship by demonstrating that age has a major impact on agreeableness. These findings suggest that older students are more emotionally receptive and open to new experiences due to life events. By linking personality development with age in a higher education context, this study stresses the importance of considering students' life stages when designing instructional approaches.

Table 37

Personality Traits & Demographics

Personality Trait	Demographic Variable	Correlation	Conclusion
Openness	Age	Positive correlation	Statistically significant
Agreeableness	Age	Strong positive correlation	Statistically significant

When looking at how demographic factors affect learning modes (Table 38), important results about gender and age for RO and AE emerge. The results of the multiple regression analysis showed that gender had a significant impact on RO, with women

generally scoring higher than men. This positive correlation suggests that reflective learning practices are more common among women. Despite the marginal significance of the ANOVA results, they indicate a trend consistent with the regression findings, pointing to a small but noticeable effect of gender on RO. Moreover, the examination of the relationship between age and AE revealed that older students typically participate in AE activities more actively. Multiple regression analysis clearly demonstrated the positive impact of age on AE, supporting this relationship. The ANOVA supported this finding, although the results were just above the conventional significance threshold. This suggests a meaningful, if not strong, relationship, which did not require further post hoc analysis to confirm. This approach helped avoid the potential for Type I errors, which could otherwise suggest significant differences do not exist. Overall, these findings highlight students' gender and age-specific tendencies in learning mode preferences, emphasizing the need for inclusive and adaptive educational strategies.

Table 38

Demographics & Learning Modes

Demographic Variable	Learning Mode	Correlation	Conclusion
Gender	Reflective	Women scored higher than men	Statistically significant
	Observation		
Age	Active	Positive correlation	Statistically significant indicates a meaningful trend
	Experimentation		

Several noteworthy relationships were found when binary logistic regression was used to examine the effects of gender and academic disciplines on learning styles (these are

shown in Table 39 below). First, the analysis showed that preferences for Diverging and Accommodating learning styles are highly influenced by gender. It was discovered that women were more likely than men to favour the Diverging learning style. On the other hand, the Accommodating learning style's negative coefficient indicates that men are more likely to favour this style, demonstrating a definite gender difference in preferred learning styles. The impact of age on the Converging learning style was investigated further. The findings indicated that age had a marginally positive effect on the preference for Converging, suggesting that older people may be slightly more likely to adopt this style. Furthermore, an analysis was conducted regarding the influence of academic discipline on learning styles. Academic fields like Architecture, Engineering, and Artificial Intelligence have been linked to a greater inclination towards the Converging learning style. This could be explained by the nature of these fields, which frequently call for the fusion of different approaches to handle complicated problems. Disciplines with more traditional or less interdisciplinary curriculums, such as Education, Business, Law, and Project Management, demonstrated lower levels of preference for convergent learning. Additionally, a strong inverse relationship between academic discipline and the accommodating learning style was found by the analysis. This implies that some academic fields might discourage or be less compatible with the qualities that support an accommodating learning style. Overall, these findings reveal how gender and academic disciplines shape students' learning style preferences, offering educators and policymakers with valuable insights for curriculum design that supports interdisciplinary and gender-inclusive learning.

Table 39
Demographics & Learning Styles

Demographic Variable	Learning Style	Correlation	Conclusion
Gender	Diverging	Women favor this style	Statistically significant
	Accommodating	Men favor this style	Statistically significant
Age			Age slightly increases preference for this
	Converging	Marginally positive effect	style; relationship is not strongly significant
Academic Discipline	Converging	Positive relationship in STEM fields	Architecture, Engineering, and AI linked to higher preference for Converging style
	Converging	Negative relationship in non-STEM fields	Lower preference in disciplines like Education, Business, Law, and Project Management

		Academic fields discourage or are less
Accommodating	Strong inverse relationship	compatible with qualities supporting the
		Accommodating style

Finally, in the qualitative analysis, four major themes emerged from the thematic analysis of interviews with eight bachelor's degree students: Personality Adaptation, Learning Engagement, Gender Dynamics, and Development Over Time. The concept of Personality Adaptation has been observed in students, who exhibit a dual persona that shifts between formal and informal settings, depending on social context and personal characteristics such as introversion and extroversion. Learning Engagement made a clear distinction between the preferences of individual and collaborative learners and demonstrated a preference for active, hands-on learning experiences as opposed to passive learning. Gender Dynamics examined how gender influences classroom norms and interactions, which in turn impacts student engagement and academic results. Finally, Development Over Time demonstrated how students' confidence and self-perception grow as they progress through university life, demonstrating a rise in self-awareness and a more contemplative attitude toward life and learning. The intricate interactions between personality, learning preferences, social dynamics, and personal growth in undergraduate students' educational experiences are highlighted by these themes taken together.

Next, three main themes emerged out of the interviews with six Master's degree candidates: Learning Styles, Personality Traits, and Integration of Theories and Practice. These students demonstrated a clear transition from theoretical learning to practical application, emphasizing the need to combine classroom learning with practical experience to improve professional readiness. Additionally, they looked at how personalities function in academic environments, striking a balance between professionalism and personal identity and stepping outside of their comfort zones to take on roles that promote both professional and personal development. Students emphasized the value of organization and flexibility in overcoming academic obstacles, as well as the influence of personality qualities like conscientiousness, openness, and resilience on their academic and personal

growth. Furthermore, the significance of interactive group learning and the utilization of visual aids to augment comprehension were underscored by the discourse on various learning styles, including collaborative and visual learning. Students expressed a strong preference for practical application, stating that these experiences were essential in helping them connect theoretical ideas to real-world applications, which in turn enhanced their educational experience and equipped them for success in the workplace.

Four key themes emerged from interviews with four PhD candidates: Learning Styles, Personality Traits, Academic Journey, and Learning and Teaching Methods. These students demonstrated how important it is to develop flexibility early in one's academic career by moving from solo to group projects to handle the demands of doctoral-level research. Regarding Methods of Learning and Teaching, they stressed the value of innovative approaches like utilizing digital tools to transform the way research is disseminated and improve understanding of difficult subjects. It was also emphasized how critical thinking plays a vital role in honing analytical abilities that are necessary for advanced research. In terms of personality traits, determination and openness to new things were essential. Students observed that perseverance is essential for enduring the challenging stages of their studies, and that being receptive to novel theories and approaches greatly increases research inventiveness and flexibility. Finally, problem-based, and reflective learning were emphasized in Learning Styles. Both problem-based learning, which applies concepts to actual situations, and reflective learning, which entails in-depth engagement with the material, were viewed as essential for improving the practical application of research and expanding understanding. Together, these themes paint a complete picture of the experience of a PhD student, highlighting the incorporation of innovative and adaptive learning strategies.

Lastly, four major themes emerged from the thematic analysis of collective student interviews at the bachelor's, master's, and doctoral levels: Technological Integration, Gender Influences, Learning Styles, and Personality Traits. Students talked about how social behaviours and learning preferences in academic settings are greatly influenced by personality traits like extroversion and introversion. These traits affect everything from roles in group dynamics to preferred study environments. The ability to adapt has been identified as a critical quality that helps students successfully navigate a variety of social and academic contexts. Regarding learning styles, it was evident that people preferred settings that matched their unique personality traits, for example, introverts preferring to study alone. The analysis also brought attention to the differences between reflective and active learning preferences, showing that while some students do better in hands-on learning settings, others are better served by a more contemplative approach. Emphasis was also placed on maintaining a balance between theoretical knowledge and practical application. Many students discovered that learning and retention are improved when theories are applied to real-world situations. Gender influences were evident in many aspects of academic life, including group dynamics and personal identity, and especially in how students saw themselves and were seen by others. It has emerged that gender stereotypes have a major impact on self-expectations and educational paths. Finally, Technological Integration was a theme that revolutionized education at all levels, with digital tools improving the effectiveness and flexibility of learning. The Covid-19 pandemic had increased shifts toward more digital educational approaches, and students have noted the critical role that technology plays in organizing study habits and adapting to online learning environments. Overall, these themes show how gender dynamics, technology, learning preferences, and personality all interact in complex ways to shape educational experiences at various academic levels, emphasizing the need for instructional

strategies that take these varied influences into account. Furthermore, these accounts not only validated the statistical analyses but also explained the fundamental mechanisms and personal experiences that drive these patterns.

6.3 Implications

There are several important implications for educators and educational policymakers from the quantitative and qualitative phases of this study's findings, particularly in terms of how they design and manage learning environments that cater to diverse student needs. Drawing from the BFPT and KELT, the quantitative results indicate that personality traits have a significant impact on learning strategies. This means that teaching methods should be adaptable enough to accommodate a wide range of student personality types. For instance, extroverted students perform better in environments that promote teamwork and interaction, whereas introverted students perform better in environments that promote solitary study. Educators should consider combining traditional lectures, self-paced learning modules, and group projects into one instructional design. To enhance learning outcomes and accommodate diverse personality types and learning styles, curriculum designers can incorporate interactive technologies such as virtual reality or online discussion boards into their designs. By employing this strategy, every student can feel encouraged to grow both academically and personally and that their level of participation will rise and engagement will increase. The qualitative insights show that students' educational experiences are significantly influenced by how compatible their learning environments are to their intrinsic personality traits and learning styles. This emphasizes how important it is for instructors to acknowledge and apply these insights into their instructional strategies. Training programs could include modules on personality and learning style assessments, enabling educators to tailor their instruction to better meet individual student needs. To elaborate, educational establishments should think about

creating courses for ongoing professional development that give instructors the skills they need to successfully apply adaptive teaching techniques. These courses might address anything from the fundamentals of psychological theories in education to more complex applications in the classroom. Further personalizing education could be achieved by implementing technology-based solutions, such as adaptive learning software, which modifies content delivery in response to real-time feedback from students' performance and engagement levels.

Additionally, demographic comparisons highlight the need for implementing educational policies that account for variations in age, gender, and academic discipline. Policies could be created to guarantee equal access to educational opportunities, with the possibility that younger students would gain from the development of foundational skills and older students from the possible applications of theoretical knowledge in the real world. Furthermore, to promote gender equity in academic settings, these policies need to consider gender-specific educational needs and challenges. Customized interventions may also benefit students from different academic fields, considering the requirements and learning preferences of disciplines like the Humanities, Sciences, and Arts. This strategy would not only meet the different educational needs of students but also promote an inclusive environment in the academic community that values and supports a range of demographic groups.

The findings of this study can significantly influence educational policies and teaching practices in Dubai. By understanding the specific learning preferences associated with different personality traits, educational institutions can implement personalized learning strategies that cater to these preferences. For instance, incorporating more experiential and reflective learning activities for students with high Agreeableness and Openness, and providing more structured, conceptual tasks for those with high

Conscientiousness. This approach can enhance student engagement and learning outcomes, making education more effective and tailored to individual needs.

The study has implications for educational assessment practices as well.

Understanding that certain learning preferences are influenced by personality traits may promote the use of more thorough educational assessment techniques that take personality into account when evaluating academic performance and engagement. This may result in fairer and more efficient teaching methods. To improve comprehension and retention, enhanced assessment methods could include a variety of testing formats and customized feedback mechanisms that better suit each learner's unique learning style.

For educational policy, the findings suggest the importance of integrating psychological assessments into educational settings, which could help create more adaptive learning environments that cater to diverse student needs. This approach can also support teacher training programs, emphasizing the need for educators to understand and adapt to the psychological diversity in their classrooms. Furthermore, such integration could support the development of curriculums that actively reflect the diverse personality traits of students, ensuring that teaching methods are as inclusive as possible. This might involve collaborative learning strategies, differentiated teaching, and the incorporation of technology to provide diverse learning approaches.

To summarize, these implications emphasize the need for a thorough comprehension of the interactions among personality traits, learning styles, and education, as well as a move toward more inclusive, adaptable, and personalized teaching methods. Ultimately, this personalization can improve educational outcomes by developing more effective teaching strategies that consider the unique learning styles of each student. These results are especially important for educators because they imply that personality tests may be essential instruments for creating more successful and individualized lesson plans that

cater to students with various learning styles. Aligning learners' distinctive personalities to interact more successfully with learning styles that complement their personality types could potentially optimize learning efficacy. Additionally, since instructors can modify their teaching strategies to better suit their students' distinctive tendencies, the study's findings support the idea that personality traits should be mapped to preferred learning styles to improve student performance.

6.4 Contributions

This study advances the knowledge of the intricate interactions between personality traits and learning approaches, which is important for educational psychology and personalized learning. This research, which is based on the robust theoretical frameworks of the BFPT and KELT, provides a thorough analysis that tightens the knowledge gap between psychological theory and educational practice.

6.4.1 Theoretical Contributions

The integration of BFPT and KELT provides a comprehensive model that aligns personality psychology with pedagogical methods. The debate over the relative merits of distinctive personalities versus experiential in educational environments is furthered by this method. By establishing how these frameworks interact to influence student learning outcomes, the study contributes to theoretical advancements that can guide future research and the development of new educational theories.

6.4.2 Methodological Contributions

This study utilizes a mixed-methods approach, which exploits the advantages of both quantitative and qualitative research. By quantifying the impact of personality traits on learning preferences, the quantitative phase strengthens the reliability of the results by offering a statistical foundation. By gathering more in-depth information about how students view and interact with their learning environments according to their personality

traits, the qualitative phase, which involved conducting interviews, adds further value to these conclusions. In addition to adding value to the data, this methodological combination establishes a standard for upcoming investigations into the complexity of human behaviour in educational research.

6.4.3 *Practical Contributions*

The findings provide educators and educational policymakers with practical advice on how to adapt their teaching strategies to better meet the diverse needs of their students. To improve student engagement and overall learning outcomes, this study highlights how important it is to create learning environments that can accommodate a variety of personality types and learning styles. For example, this study identified specific correlations between personality traits and learning styles, demonstrating how extroverted students are more likely to thrive using Accommodating learning styles. This insight allows educators to tailor their teaching strategies more effectively. Additionally, the study highlights the role of demographics in shaping this relationship; for instance, as students age, they tend to show an increase in openness to new experiences, and females are more likely to prefer Diverging learning styles than males.

6.4.4 *Policy Contributions*

The findings of this study emphasize the necessity of educational policies that take personality traits into account when developing curriculum and implementing instructional techniques. It promotes the use of personality and learning style tests in educational settings, which may result in more individualized and successful teaching and learning. In addition, policies that guarantee fair access to individualized instruction for a range of student populations are necessary, as the study's emphasis on demographic variables like age and gender highlights.

6.4.5 Educational Impact

Finally, this research adds to a deeper comprehension of how learning environments can be planned to meet students' psychological as well as academic needs. Educational institutions can improve the psychological diversity of their student body and improve academic performance by creating environments that support and consider various demographics such as gender and age.

6.5 Limitations

The study's dependence on psychometric tests, like the BFPT, to measure personality traits imposes restrictions on the depth of insight into individual student experiences. Furthermore, even though quantitative approaches offer broad generalizability, they might miss the complexity of unique student experiences and reactions to various learning environments.

Additionally, the study's sample has several limitations that affect how broadly the findings can be applied. Due to these limitations, it is possible that the results will not be applicable as broadly to other groups or environments. Firstly, even though the sample size of 186 students is sufficient for statistical analysis, its small size may limit the strength and statistical power of the results. Second, the sample consists solely of higher education students enrolled in a single academic institution. The findings' applicability in a wider range of educational contexts is limited by the fact that personality traits and learning styles can differ significantly among universities, cultural backgrounds, and educational systems. These limitations suggest that although the study provides valuable insights into the relationship between personality traits and learning strategies in a specific context, caution should be exercised when generalising the findings to other student populations or educational environments. Another limitation has to do with data response and volume, especially since data was collected and restricted to a single university. The university

chosen for this study has a student population of around 1,000, so there is a natural limit to the total number of responses that could be gathered. Even though the responses obtained were from 186 students, or at least 10% of the total enrolment at the university, and even though the percentage was higher than 10%, a larger sample size might have allowed the study to produce even more accurate results. Furthermore, collecting data from a single university limited the data's capacity to be transferred and generalized.

Furthermore, it is more challenging to distinguish how personality traits and learning preferences vary over time due to the cross-sectional design of the study. Longitudinal studies may provide a more dynamic picture of how these relationships change or evolve over time as students progress through their academic careers. Moreover, there are drawbacks to the methods employed in evaluating learning preferences and personality traits. While the instruments were validated, they rely on self-reporting, which means that biases like respondent fatigue or social desirability could potentially skew the results. Before sharing their results in a follow-up survey, participants were required to complete the BFPT and KELT questionnaires. Although this method of collecting data sequentially was well-planned, there was still a probability that there would be little errors in the data reporting that were caused by human error. Such difficulties in survey-based research are well-known, which brought to light the challenges associated with ensuring absolute accuracy in self-reported measurements. Still, the techniques used are compliant with accepted research procedures, and the information gathered was deemed trustworthy enough to analyse.

Another limitation of this study is the absence of instructors' perspectives. This study mainly focuses on students' viewpoints regarding the relationship between personality traits and learning approaches, and while this provides valuable insights, the inclusion of instructors' experiences and observations could have further enhanced and

enriched the data. Interviewing instructors, for instance, could have provided practical insights into the implementation of pedagogical methods and educational theories, thus helping in understanding the challenges and effective practices in accommodating students' various personality traits and learning styles. Future studies should therefore incorporate instructors' viewpoints to provide a more comprehensive view of this topic and enhance the applicability of the findings.

Finally, in exploring the relationship between personality traits and learning styles, cultural background was not considered as a demographic factor in this study. Recognizing how culture influences personality and learning styles could have provided a deeper and more comprehensive understanding of the relationships between personality traits and learning styles. This factor could be valuable for future research to explore and deepen the insights into educational strategies.

6.6 Suggestions for Future Research

Building on the findings of this study, future research should expand the qualitative analysis to further investigate the intricate dynamics of learning preferences and personality traits. Although the present investigation has yielded preliminary insights via interviews, additional qualitative investigation may involve ethnographic research or longitudinal case studies to track the evolution of these personality traits and learning preferences within educational environments. These studies could follow the lives of specific students over a few academic years, offering a deeper, more thorough understanding of how learning preferences and personality traits change over time and affect academic performance as well as overall learning outcomes. Moreover, the integration of ethnographic methods may also provide additional understanding of students' real-world educational experiences by illustrating the ways in which their individual characteristics influence their engagement and satisfaction with the learning

environment. The intricacies of student interactions within their learning environments, as well as how these interactions could potentially enhance their learning outcomes, could be captured by researchers using this approach.

Future research could investigate differences across various cultural and institutional contexts by broadening the scope of qualitative research. This would involve analysing how various educational systems support or contradict different personality types and learning preferences. In addition to expanding the knowledge of the fundamental processes influencing student engagement, this more comprehensive approach would help develop more efficient, culturally sensitive teaching strategies that are adapted to the different needs of students in a variety of learning environments. Furthermore, broadening the study's focus to encompass a wide range of educational contexts, such as online learning environments or vocational training centres, may improve the comprehension of the ways in which personality traits impact learning preferences. Examining these diverse contexts could lead to important information about how well various learning strategies customized to student traits adapt and perform in non-academic settings. Enhancing the comprehension of the findings' generalizability could also be achieved by implementing a multi-institutional study that includes a wider range of academic fields and educational levels. The investigation of personality traits and their impact on learning preferences across various disciplines, from Engineering and Science to the Humanities and Arts, and across different educational levels, from secondary school to postgraduate studies, could be the focus of this kind of study. The development of more effective educational policies and practices that are sensitive to the varied needs of students may be guided by this comprehensive approach, which would provide a deeper, more complete view on how personality traits affect learning across diverse educational contexts.

Moreover, incorporating students' cultural backgrounds as a demographic factor could offer a global perspective on educational practices and how best to adapt them to diverse student populations. This expansion would enhance the understanding of how educational strategies and interventions can be adapted to various cultural contexts, accounting for different learning preferences influenced by students' backgrounds. Additionally, longitudinal research would be beneficial in analysing the dynamic interaction that develops over time between learning styles and personality traits. Researchers can learn more about the developmental aspects of learning styles and how they might change or stabilize over time by monitoring changes in students' learning preferences and outcomes as they move through different educational levels, from elementary school to higher education. With the help of this longitudinal approach, educational strategies' long-term effects can be better understood, as can the ways in which they can be modified to support ongoing learning and adaptation in response to changes in individual needs and demands on education.

Additionally, future research should take into consideration educators and instructors' viewpoints in order to offer a more comprehensive understanding of the intricate relationship between personality traits and learning approaches. Interviewing instructors could provide practical insights into the implementation of pedagogical strategies and educational theories. This would help in recognizing and identifying the challenges and effective strategies for addressing the various personality traits and learning styles of students. Ultimately, this approach will enhance the applicability and generalizability of the findings, and thus provide a more balanced view of the topic.

Examining how technology affects education may also shed light on how to create digital learning environments that are more productive. Researchers can find ways to improve students' overall learning outcomes by investigating the effectiveness of adaptive

learning technologies, which adjust content and pacing based on each student's performance and preferences. This investigation would be especially useful since it might show how various technologies can potentially impact student retention, engagement, academic success, and overall learning experiences. These studies could aid in the creation of personalized learning platforms that consider each student's individual learning preferences in addition to their academic standing. This could revolutionize the field of education by introducing more adaptable and responsive teaching strategies.

Although this study was conducted in a blended learning environment where interviews were conducted online, the study's insights into online learning adaptability are important because, as countless studies have demonstrated, educational institutions need to keep creating and improving their blended learning programs and online courses to better equip their students. This could entail incorporating more advanced digital tools and adaptable learning modules that consider different teaching and learning philosophies and meet students' changing needs. The COVID-19 pandemic had a contextual constraint on the adaptability seen in this study, but the lessons about resilience and flexibility in learning environments are long-lasting. These results emphasize the need to prepare teachers and students for a future where fully online and hybrid learning environments may thrive, and they also call for an educational system that is more adaptable to change.

Building on the overall results of this study, a few areas have been identified where additional research could greatly advance the understanding of the interactions between learning approaches and personality traits in educational settings. These areas look at important variables that affect students' academic performance as well as the usefulness of incorporating personality tests into educational plans. Future studies in these fields may help develop educational systems that are more successful, flexible, and inclusive. Based

on these, therefore, the following set of research questions are proposed to address the difficulties of personalized education:

1. What effects do personality traits have on learning preferences and academic outcomes when combined with cultural and socioeconomic background?
 - This question aims to expand the knowledge of educational equity and accessibility by revealing the ways in which a variety of backgrounds influence educational experiences and results.
2. Can student engagement and learning efficiency be enhanced by the incorporation of adaptive learning technologies based on personality assessments?
 - The aim of this question is to evaluate how adaptive technologies can be used to personalize learning environments, which may result in more efficient and interesting teaching methods.
3. What part does the personality of the teacher play in the effectiveness of customized learning strategies?
 - Creating training programs that enhance educational outcomes can be influenced by an understanding of how educators' personalities impact their effectiveness as teachers.
4. What changes in learning preferences and personality traits might be revealed by longitudinal research over the course of a student's academic career?
 - Examining variations over time can shed light on how learning preferences and personality develop, guiding the decision of when and how to apply educational interventions.
5. How does the experience of transitioning from online learning to face-to-face impact students' long-term academic performance and adaptability?

- This question aims to explore whether the adaptability skills developed during the COVID-19 pandemic have a lasting impact on students as they transition back to more traditional learning environments. It seeks to understand if these adaptations have strengthened their overall academic resilience and performance in the long run.

In conclusion, this study demonstrates the strong correlation between personality traits and learning styles, with the relationship between BFPT and KELT offering useful insights. Demographic research conducted in combination with these components has expanded the understanding by bringing to light the variety of factors that influence educational experiences. Going forward, more research needs to be done in order to fully understand these complex relationships. Moreover, to facilitate the development of customized educational strategies, future research can provide more focused insights by examining how these dynamics change over time and in various educational settings. Furthermore, the implications discussed in this chapter emphasize the need for inclusive educational practices that consider the diverse range of personality traits and learning styles that students possess. And while not entirely conclusive, these implications also suggest that further research with a larger sample size may yield more definitive and understandable findings. This strategy will improve learning outcomes on a larger scale by improving the educational environment while also guaranteeing that it is flexible and responsive to each student's particular needs.

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Appendices

Appendix A: Big Five Personality Trait Inventory Test

Introduction: The Big Five Personality Trait Inventory Test was used to assess the learning styles of participants as part of the research methodology. The inventory is a 44-item questionnaire designed to measure five major dimensions of personality. The version used was adapted from John and Srivastava's Big Five Inventory model.

Source: The test was accessed and administered via the Personality Assessor website, available at <https://www.personalityassessor.com/bigfive/>.

Description of the Inventory: The inventory consists of 44 multiple-choice questions that participants completed online. Each item on the test corresponds to one of the five major dimensions of personality: extraversion, agreeableness, conscientiousness, neuroticism, and openness. The inventory helps in understanding various aspects of a person's personality.

Example of Test Questions: Participants were asked questions like:

"I see myself as someone who is talkative." (measures extraversion).

"I see myself as someone who tends to find fault with others." (measures agreeableness).

Each question was answered on a scale from 1 (Disagree strongly) to 5 (Agree strongly).

Relevance to the Research: The data collected from this inventory was crucial for analysing the personality traits of the participants, which was essential for discussing the implications of personality traits in educational settings. The results helped in tailoring pedagogical approaches to suit different learning preferences.

References Personality Assessor. (Year). Big Five Inventory. Retrieved from <https://www.personalityassessor.com/bigfive/>.

Appendix B: Kolb Learning Style Inventory Test

THE LEARNING STYLE INVENTORY

This inventory will be more helpful to you if you think about situations in which you are presently learning. These may be situations at home, at work, at school, or in some other context. Take a few minutes to think about these situations and make note of your answers to the following questions: Where are you learning? What are some important things that you have learned in the past year? How do you approach new learning opportunities? In the following assessment instrument, you are asked to complete 12 sentences that describe learning. Each has four endings. To respond to these sentences, consider some of the recent learning situations you have just written about. Then rank the endings for each sentence according to how well you think the ending describes the way you learned. Write 4 next to the sentence ending that describes how you learn *best*, and so on down to 1 for the sentence ending that seems *least* like the way you learned. Be sure to rank all the endings for each sentence unit. Do not make ties.

EXAMPLE: When I learn:

- a. I am happy → 1
- b. I am careful → 3
- c. I am fast → 2
- d. I am logical → 4

In the example above, “I am logical” describes how I learn best, whereas “I am happy” describes how I learn least.

1. When I learn:

- a. I like to deal with my feelings
- b. I like to think about ideas
- c. I like to be doing things
- d. I like to watch and listen

2. I learn best when:

- a. I listen and watch carefully
- b. I rely on logical thinking
- c. I trust my hunches and feelings
- d. I work hard to get things done

3. When I am learning:

- a. I tend to reason things out
- b. I am responsible about things
- c. I am quiet and reserved
- d. I have strong feelings and reactions

4. I learn by:

- a. feeling
- b. doing
- c. watching
- d. thinking

5. When I learn:

- a. I am open to new experiences
- b. I look at all sides of issues
- c. I like to analyze things, break them down into their parts
- d. I like to try things out

6. When I am learning:

- a. I am an observing person
- b. I am an active person
- c. I am an intuitive person
- d. I am a logical person

7. I learn best from:

- a. observation
- b. personal relationships
- c. rational theories
- d. a chance to try out and practice

8. When I learn:

- a. I like to see results from my work
- b. I like ideas and theories
- c. I take my time before acting
- d. I feel personally involved in things

9. I learn best when:

- a. I rely on my observations
- b. I rely on my feelings
- c. I can try things out for myself
- d. I rely on my ideas

10. When I am learning:

- a. I am a reserved person
- b. I am an accepting person
- c. I am a responsible person
- d. I am a rational person

11. When I learn:

- a. I get involved
- b. I like to observe
- c. I evaluate things
- d. I like to be active

12. I learn best when:

- a. I analyze ideas
- b. I am receptive and open-minded
- c. I am careful
- d. I am practical

LEARNING STYLE INVENTORY – Four Learning Styles are identified. Transfer your scores from the assessment to this scoring sheet.

	1	2	3	4	5	6	7	8	9	10	11	12	<u>Total</u>
Concrete Experience (CE)	a	c	d	a	a	c	b	d	b	b	a	b	
Reflective Observation (RO)	d	a	c	c	b	a	a	c	a	a	b	c	
Abstract Conceptualization (AC)	b	b	a	d	c	d	c	b	d	d	c	a	
Active Experimentation (AE)	c	d	b	b	d	b	d	a	c	c	d	d	

Put your rank next to each letter for each of the questions (*remember 4 is high, 1 is low*). Sum each row to get a total.

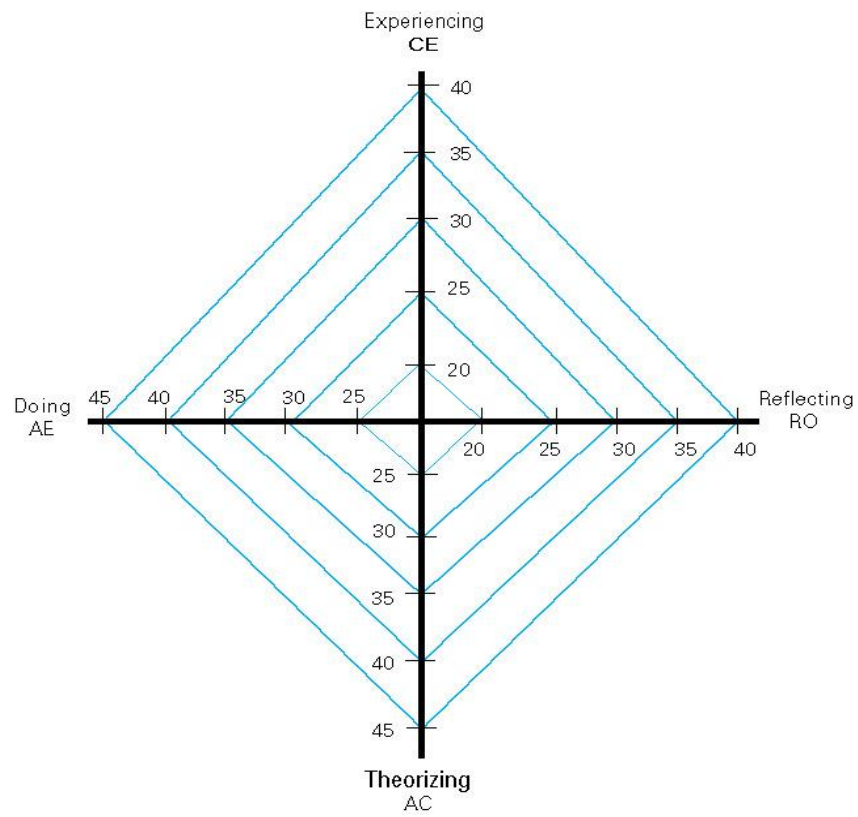
Next, plot your totals above on the chart on the next page. Then draw a line connecting all of your dots (*the design should be in the shape of a kite*).

Your dominant learning style is the quadrant that has the most area covered by your “kite”.

To learn more about your style, go to the last page.

ACCOMODATING (CE+AE)

DIVERGING (CE+RO)



CONVERGING (AE + AC)

ASSIMILATING (AC+RO)

TWO DIMENSIONS OF LEARNING

Information Gathering (Taking in information)

Concrete Experience (CE) – Some people are inclined to take in information through direct experience. Immerse self in situations in order to learn. Feel learn best through experience and involvement. (Interact with people)

Abstract Conceptualization (AC) – Other people tend to take in information best that is abstract, symbolic, or theoretical. Learn more effectively when they encounter theories and ideas and have a chance to think about them analytically and rationally. (Get information from books).

Interpreting, evaluating and responding to information. (Reacting to information)

Reflective Observation (RO) – Some people are inclined to examine information from a number of perspectives, to ruminate about the information, and explore various meanings of the information. Quick judgments are avoided (pondering and reflection on information)

Active Experimentation (AE) – Other people are inclined to act immediately on the information they receive. Their response is proactive; they test out the information; they apply it immediately to a situation. They experiment to find out the implications and usefulness of the information. By actively applying information they can form alternative beliefs about the information.

Four Learning Styles Explained

Diverging (CE and RO—Dominant)

View concrete situations from many points of view

These people excel at creative, inventive activities with problems that can be viewed from a variety of perspectives.

Like to gather lots of information and engage in brainstorming.

Diverges—Arts, History, political science, English, psychology

Social services, arts, communications.

Assimilating (AC and RO – Dominant)

Process a wide range of information and put it into a concise, cohesive, logical form

Like thinking through abstract ideas and concepts.

Inductive reasoning and organizing material into constructive whole.

Assimilators—economics, mathematics, chemistry, etc

Information sciences, research fields, information gathering.

Converging (AC and AE – Dominant)

Like to find practical uses for ideas and theories.

Excel at practical application of ideas and at problems with one correct answer

Prefer to deal with technical problems rather than social or interpersonal issues.

Convergers – physical sciences, engineering, computers

Jobs that have technical problem solving emphasis; engineering, computer science, etc.

Accommodating (AE and CE – Dominant)

Best at hand on experience

Carry out plans and involving themselves in new and challenging experiences.

Like solving problems through interacting with others. Trying out things.

Accommodators: business and management

Accounting, Finance, Organizational administration -- leadership component

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Appendix C: Researcher's Survey

An Analysis of the Relationships and Views Among The Big Five Personality Traits and Kolb's Experiential Learning Approaches in Higher Education Students in Dubai, UAE

My name is Mohammed AlAmeen and I'm a PhD student studying at the British University in Dubai (BUiD). I'm currently working on a research study which aims to investigate the relationships and views among The Big Five Personality Traits and Kolb's Learning Approaches in Higher Education students in Dubai, UAE.

The purpose of this survey is to collect your responses from the two questionnaires that you've completed earlier: your preferred learning style under Kolb's Experiential Learning Styles framework, and the percentage of each of the five dimensions under the 5 Factor Model of Personality; Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. This survey will also ask you a few questions that are demographic in nature.

The total duration of this survey is around 3 minutes. If you are interested to participate in this survey, please be assured that your identities will remain confidential and the data collected will be only be used for academic purposes.

Thank you for your cooperation and thank you in advance for answering the survey questions!

Warm regards,
Mohammed AlAmeen

* 1. What is your gender?

☐ Male

☒ Female

* 2. What is your age range?

☐ 18-22

☐ 23-33

☐ 34-44

☐ 45-55

☒ 56+

* 3. What degree are you currently studying for?

☐ Bachelor's

☐ Master's

☒ PhD

* 4. What is your program/academic discipline?

- ☐ Bachelor of Science in Computer Science – Artificial Intelligence
- ☐ Bachelor of Science in Computer Science – Software Engineering
- ☐ Bachelor of Science in Electro-Mechanical Engineering
- ☐ Bachelor of Science in Business Management
- ☐ Bachelor of Science in Accounting and Finance
- ☐ Bachelor of Law
- ☐ Master's in Education
- ☐ Master of Business Administration (MBA)
- ☐ Master's in Project Management
- ☐ Master of Science in Informatics
- ☐ Master of Science in Sustainable Design of the Built Environment ☐
- Master of Science in Engineering Management
- ☐ Master of Science in Structural Engineering
- ☐ Master of Architecture
- ☐ Master of Science in Construction Law and Dispute Resolution
- ☐ PhD in Education/Doctor of Education (EdD)
- ☐ Professional Doctorate in Business Administration (DBA)
- ☐ PhD in Business Management

☐ PhD in Project Management ☐

PhD in Computer Science

☐ PhD in Sustainable Built Environments

☒ PhD in Business Law

* 5. What was your learning style under Kolb's Learning Style Inventory?

☐ ACCOMODATING (CE+AE)

☐ DIVERGING (CE+RO)

☐ CONVERGING (AE + AC)

☒ ASSIMILATING (AC+RO)

* 6. Under the Big Five Inventory, what percentage (%) or score did you get for "Openness"?

* 7. Under the Big Five Inventory, what percentage (%) or score did you get for "Conscientiousness"?

* 8. Under the Big Five Inventory, what percentage (%) or score did you get for "Extraversion"?

- * 9. Under the Big Five Inventory, what percentage (%) or score did you get for "Agreeableness"?

- * 10. Under the Big Five Inventory, what percentage (%) or score did you get for "Neuroticism"?

Done

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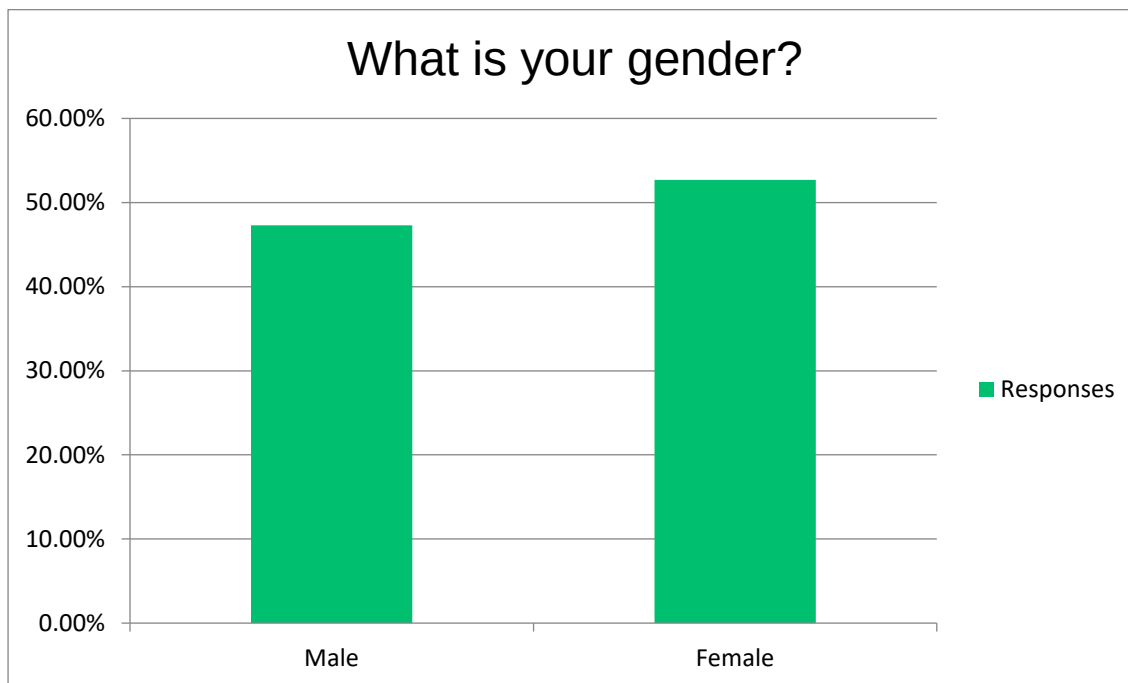
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Appendix D: Researcher's Survey Results

Investigating the Relationships and Views Among Kolb's Experiential Learning Styles and The Big Five Personality Traits in Higher Education Students in Dubai, UAE

What is your gender?

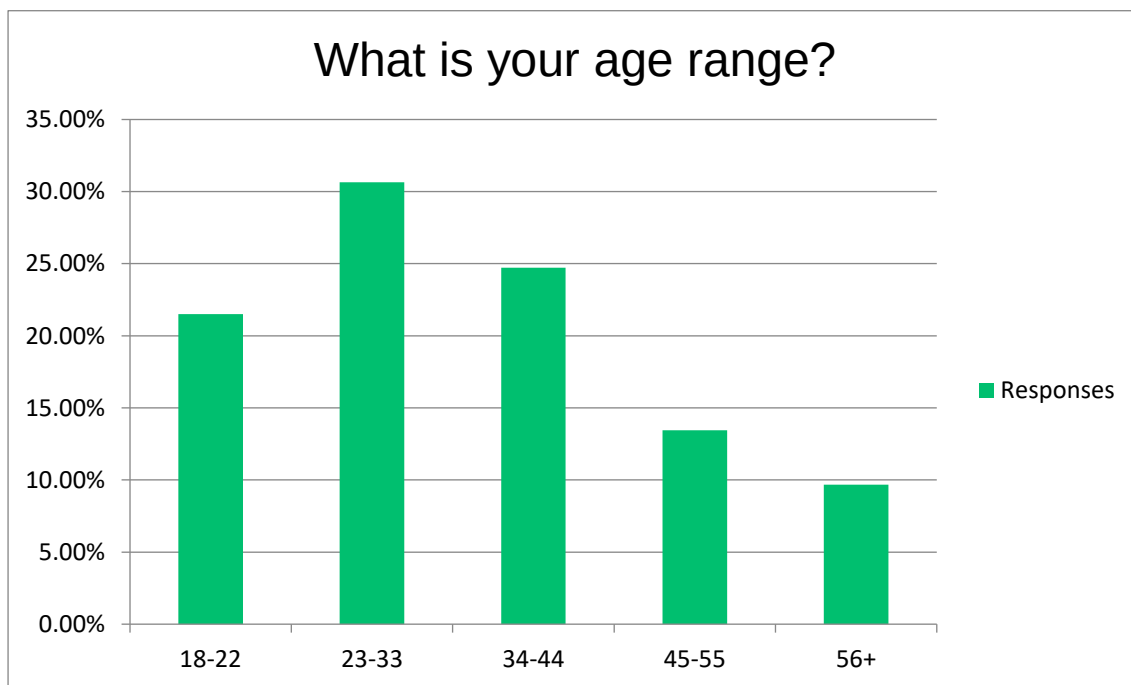
Answer Choices	Responses	
Male	47.31%	88
Female	52.69%	98
Answered		186
Skipped		0



Investigating the Relationships and Views Among Kolb's Experiential Learning Styles and The Big Five Personality Traits in Higher Education Students in Dubai, UAE

What is your age range?

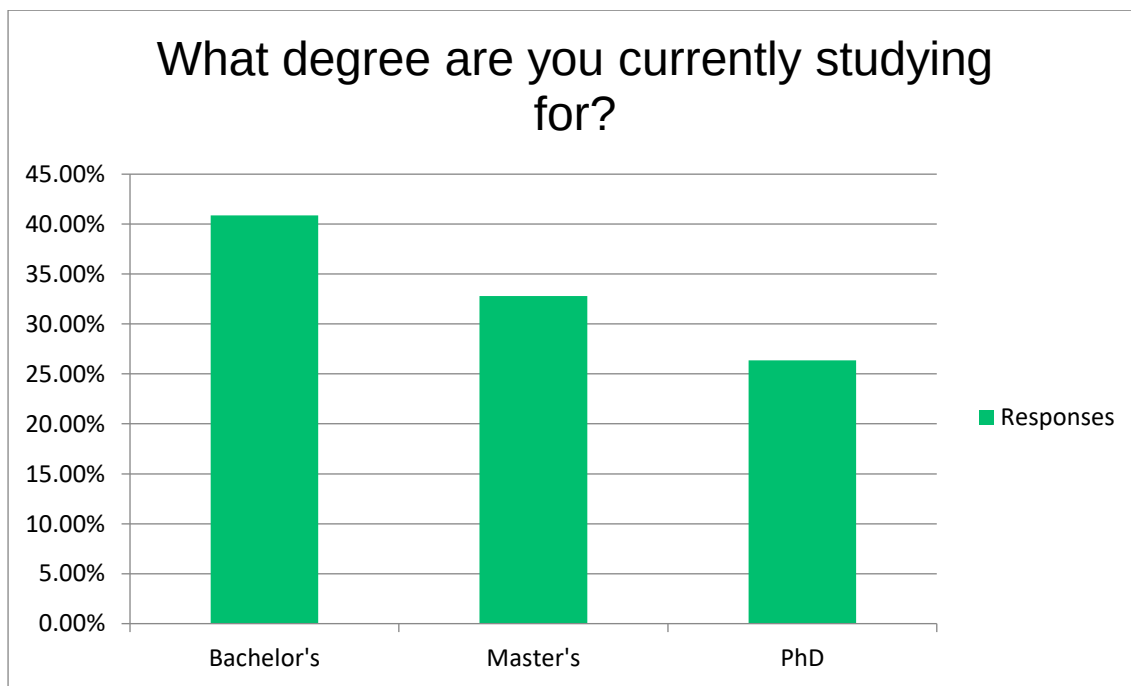
Answer Choices	Responses	
18-22	21.51%	40
23-33	30.65%	57
34-44	24.73%	46
45-55	13.44%	25
56+	9.68%	18
Answered		186
Skipped		0



Investigating the Relationships and Views Among Kolb's Experiential Learning Styles and The Big Five Personality Traits in Higher Education Students in Dubai, UAE

What degree are you currently studying for?

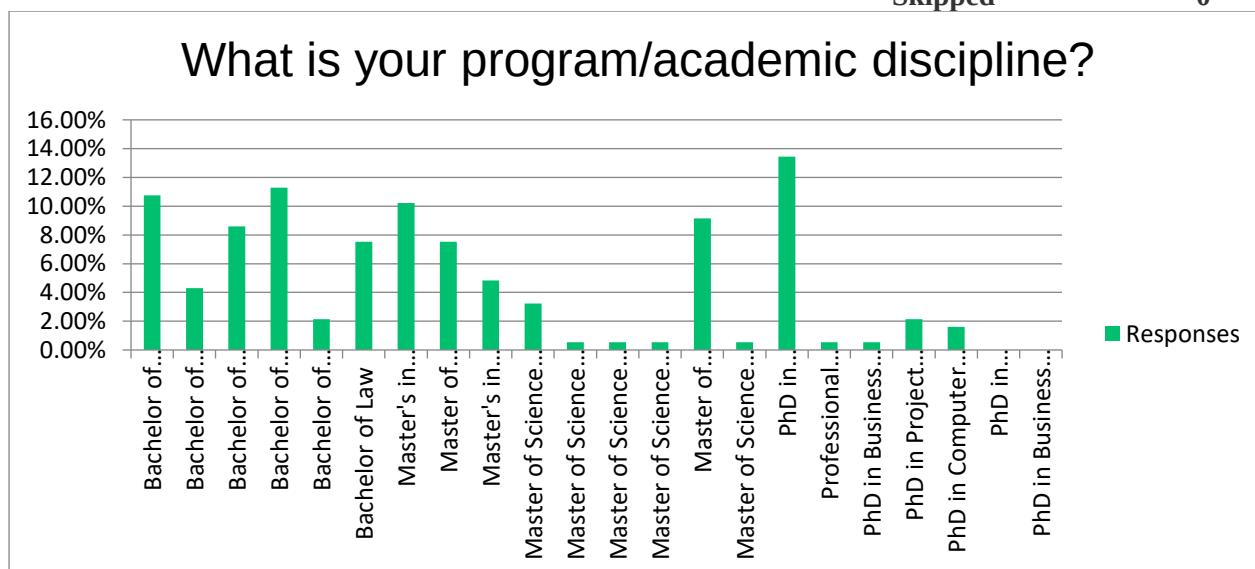
Answer Choices	Responses	
Bachelor's	40.86%	76
Master's	32.80%	61
PhD	26.34%	49
Answered		186
Skipped		0



Investigating the Relationships and Views Among Kolb's Experiential Learning Styles and The Big Five Personality Traits in Higher Education Students in Dubai, UAE

What is your program/academic discipline?

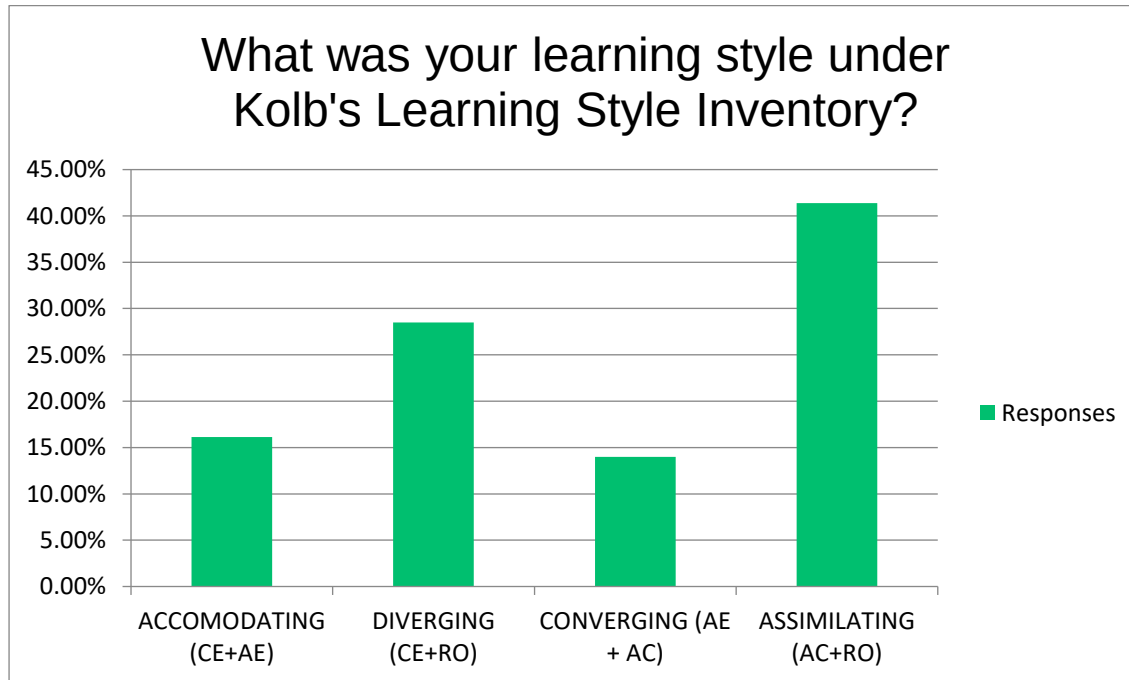
Answer Choices	Responses	
Bachelor of Science in Computer Science – Artificial Intelligence	10.75%	20
Bachelor of Science in Computer Science – Software Engineering	4.30%	8
Bachelor of Science in Electro-Mechanical Engineering	8.60%	16
Bachelor of Science in Business Management	11.29%	21
Bachelor of Science in Accounting and Finance	2.15%	4
Bachelor of Law	7.53%	14
Master's in Education	10.22%	19
Master of Business Administration (MBA)	7.53%	14
Master's in Project Management	4.84%	9
Master of Science in Informatics	3.23%	6
Master of Science in Sustainable Design of the Built Environment	0.54%	1
Master of Science in Engineering Management	0.54%	1
Master of Science in Structural Engineering	0.54%	1
Master of Architecture	9.14%	17
Master of Science in Construction Law and Dispute Resolution	0.54%	1
PhD in Education/Doctor of Education (EdD)	13.44%	25
Professional Doctorate in Business Administration (DBA)	0.54%	1
PhD in Business Management	0.54%	1
PhD in Project Management	2.15%	4
PhD in Computer Science	1.61%	3
PhD in Sustainable Built Environments	0.00%	0
PhD in Business Law	0.00%	0
Answered		186
Skipped		0



Investigating the Relationships and Views Among Kolb's Experiential Learning Styles and The Big Five Personality Traits in Higher Education Students in Dubai, UAE

What was your learning style under Kolb's Learning Style Inventory?

Answer Choices	Responses	
ACCOMODATING (CE+AE)	16.13%	30
DIVERGING (CE+RO)	28.49%	53
CONVERGING (AE + AC)	13.98%	26
ASSIMILATING (AC+RO)	41.40%	77
Answered	186	
Skipped	0	



Appendix E: Interview Questions

1. Do you behave the same way in university/in the classroom as you do at home/with your family & friends? Does your personality change or does it remain the same?
2. Do you see yourself more of an introvert or extrovert? Can you give examples that show this?
3. Do you find it easy to get along with other people? Why or why not? Can you provide some examples/scenarios that illustrate this?
4. Are you an organized person who follows a plan through or do you prefer being spontaneous and going with the flow? Can you provide some examples/scenarios that illustrate this?
5. Do you find yourself to be more imaginative and creative, or rather down-to-earth and conventional/traditional? Can you provide some examples/scenarios that illustrate this?
6. Do you find yourself often experiencing negative thoughts? Do you get stressed or depressed easily? Sad or angry? Can you provide some examples/scenarios that illustrate this?
7. Do you think your gender has an influence on the way you learn? Why or why not? Can you provide some examples that shows how your gender impacted the way you learned?
8. Do you think your gender has an influence on your personality? Why or why not? Can you provide some examples that shows how your gender impacted your personality?
9. Do you think your academic division (Bachelor, Master, PhD) influences how you learn? Why or why not? Can you provide some examples that shows how your academic division impacts the way you learn? What about your area of study?
10. Do you think your academic division (Bachelor, Master, PhD) influences your personality? Why or why not? Can you provide some examples that shows how your academic division impacts the way you learn? What about your area of study?
11. Do you think your personality influences the way you learn? Why or why not? Can you provide some examples that demonstrates how your personality impacted the way you learned?
12. Do you think your personality changes as you grow older? Why or why not? Can you provide some examples that demonstrates this?
13. Do you think your learning changes you grow older? Why or why not? Can you provide some examples that demonstrates this?

Appendix F: Transcribed Interviews

1. Bachelor's Student 1:

00:00

Interviewer: So, starting with the first question. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change or does it remain the same?

00:14

Student: Umm, that's a good question. I'd say there's definitely a difference. Like, in university, I feel like I need to be more formal, you know? I'm more cautious about how I express myself, trying to sound more knowledgeable. It's not just about following rules but also about, um, presenting myself a certain way to professors and classmates. At home, though, it's completely different. I'm way more relaxed. I can be goofy, make jokes, and not worry about sounding smart all the time. It's like I wear different hats, and I think it's important to adapt to the environment I'm at. Sometimes it feels a bit tough, you know, two versions of myself, but I guess it's part of growing up and figuring out who you are in different situations.

01:00

Interviewer: Interesting. And do you see yourself more as an introvert or an extrovert? Can you give examples that show this?

01:08

Student: Oh, definitely more of an introvert. I mean, I enjoy social interactions but in moderation. Large groups or big social settings drain me pretty quickly. Like after a lecture or a group meeting, I need some time alone to recharge. I prefer one-on-one interactions or small groups where I can have deeper conversations. I think that's where I succeed the most. But I notice my extrovert friends are always energized by these things; they love such things, which is something I admire but find exhausting. So yeah, I navigate my social life quite differently, choosing settings where I feel I can manage my energy better.

01:55

Interviewer: That's interesting to hear. And do you find it easy to get along with other people? Why or why not? Can you provide some examples or scenarios?

02:03

Student: Yeah, generally, I find it pretty easy to get along with others. I think being a good listener helps a lot. People tend to appreciate when you genuinely listen to them. For example, in group projects, I try to make sure everyone feels heard and that their ideas are considered. But, there are challenges, especially when I encounter very dominant personalities. Sometimes, they can push ideas too aggressively, and it can be hard for someone like me, because I'm someone who prefers a more collaborative approach. Like I remember this one time we had to decide on a project topic, and like I had to really step up to ensure our group didn't end up going down a path that didn't align with our assignment's goals just because one person was very persuasive. So yeah, it's a balance, but I think my calm personality helps keep the peace and make group dynamics work.

03:20

Interviewer: Are you an organized person who follows a plan through, or do you prefer being spontaneous and going with the flow? Can you provide some examples?

03:28

Student: I'm definitely on the organized side. My friends joke about my planners and lists, but that's how I keep my life in order! For instance, I plan my study schedule weeks in advance, especially around midterms and finals. I block out times for reading, studying, and research, and even breaks haha. It helps me stay focused and not get overwhelmed. But, um, I do see the appeal in being more spontaneous. Like, sometimes when friends come over to my house unexpectedly or suggest a movie night or a weekend trip or something, it throws off my plan, and it stresses me out.. but also at the time, those things end up being some of the most memorable times. So while I love to plan everything, I'm learning that there's value in sometimes just going with the flow and enjoying where the moment takes you.

04:45

Interviewer: Great. And do you find yourself to be more imaginative and creative, or rather down-to-earth and conventional/traditional? Can you provide some examples/scenarios that illustrate this?

04:55

Student: Umm, I'd like to think a bit of both, maybe. Creatively, I love drawing and writing stories. It's a way for me to express myself and explore ideas that interest me. For example, I'm working on a collection of short stories based on fairy tales from around the world, which requires a lot of imagination. Academically, though, I tend to be more traditional. I prefer structured learning environments and clear guidelines. Like when I'm working on my assignments, I follow the syllabus exactly as it's required, especially in scientific research. It's this mix, I think, that allows me to be flexible and adapt depending on the situation. Whether it's creatively thinking outside the box for my stories or following the course syllabus for my studies.

05:30

Interviewer: Oh that's really interesting to hear. I'm a writer myself so I can totally relate to that part. So moving on, do you often find yourself experiencing negative thoughts? Do you get stressed or depressed easily? Like Sad or angry? Can you provide some examples or scenarios that illustrate this?

05:40

Student: Yeah, I do struggle with negative thoughts sometimes, especially during stressful exam week. Like I can get very stressed, which leads to me doubting everything I've learned during the semester you know? And that makes me worry. Last semester, I had a major project due at the same time as two finals, and I remember feeling overwhelmed and starting to panic. I was doubting if I'll be able to perform well. It's a tough cycle because the more stressed I get, the harder it is to focus, which just makes it even worse. To manage this, I've been trying mindfulness exercises and speaking with the counsellor, which helps me stay more balanced and less like to panic and have negative thoughts. But also I think that's normal for a lot of students too, right?

06:25

Interviewer: Yes, it is. I used to feel the same things as well during my Bachelor's. Okay, so do you think your gender has an influence on the way you learn? Why or why not? Can you provide some examples that show how your gender impacted the way you learned?

06:34

Student: Hmm.. I'm not sure if my gender directly affects how I learn, but it might affect the

expectations and interactions I encounter. For instance, in my Computer Science class, there are fewer women, and sometimes I feel like there's a bit more pressure to prove myself. It can be motivating but also intimidating. There's this one time I remember feeling aware of this during a group project where I was the only female in my group. I felt I had to work harder to make sure my contributions were valued equally, which was stressful but also rewarding you know.. since I was able to demonstrate my skills and show that I'm just as good, maybe even better than the guys in my class haha! So, indirectly, gender can influence the learning experience by shaping the environment in which we learn.

07:15

Interviewer: Haha great! And do you think your gender has an influence on your personality? Why or why not? Can you provide some examples that show how your gender impacted your personality?

07:25

Student: Hmm, perhaps. I think society's expectations on whether you're a guy or girl can shape how we see ourselves and interact with the world. As a woman, I've often felt that there's this expectation to be more agreeable and nurturing. While these aren't bad traits, it has sometimes led me to prioritize others' needs over my own, especially in group settings. For example, I often find myself volunteering for tasks no one else wants to do, like organizing group meetings or editing everyone's parts of a project. While this makes me cooperative and well-liked in groups, it can also be a bit draining. I'm learning to assert my needs more and ensure there's a balance between being helpful but at the same time not overdoing it.

08:10

Interviewer: And do you think your academic division, like being a Bachelor student, influences how you learn? Why or why not? Can you provide some examples that show how your academic division impacts the way you learn? What about your area of study?

08:22

Student: Absolutely, being in the Bachelor's program influences how I approach learning because it's a time of exploring things. For example, I take a lot of different courses, which exposes me to various fields and helps me develop different kinds of knowledge. This allows me to find out what I'm truly passionate about, which I believe is important for your future, and not just your career. And also, studying Computer Science has made me more analytical

and better at problem-solving, which is really good because it improved my learning by allowing me to see connections between technical and theoretical ideas.

09:05

Interviewer: And how about the impact of your academic division on your personality? Examples?

09:13

Student: I think it does have an impact. Being in an academic environment encourages critical thinking and openness to new ideas, which has made me more curious. For example, doing debates and having discussions in my classes helped me see in the world in a different view. It's not just about absorbing information but also about questioning and challenging ideas, which I think has made me more intellectually engaged and less likely to take things at face value.

09:45

Interviewer: I see. And does your personality influence the way you learn? Can you provide some examples that demonstrate how your personality impacted the way you learned?

09:54

Student:

Definitely, my personality has a huge influence on how I learn. Being naturally curious, I always look for deeper meanings and connections, which improves my understanding of topics that are more complicated. For example, in one of my intro courses, instead of just memorizing theories, I try to apply them to real-world scenarios, which makes the material much more relatable and this helps me understand it even more. Also, being a bit of introvert like I already mentioned, I prefer self-study over group study, which gives me the time to reflect deeply on the material.

10:35

Interviewer: Do you think your personality changes as you grow older? Why or why not? Can you provide some examples that demonstrate this?

10:45

Student: Yes, I believe personality evolves over time. I've noticed that I've become more confident and assertive with age. In high school, I was a bit shy and hesitant to express my opinions, especially in public settings. Now, I feel more comfortable speaking up in class and

taking on leadership roles in group projects. And this is because of my own personal growth and the supportive environment that encouraged me to develop these skills.

11:20

Interviewer: Nice. So last question, do you think your learning changes as you grow older? Why or why not? Can you provide some examples that demonstrate this?

11:30

Student: Absolutely, my learning has definitely evolved. When I was younger, my learning was more about following instructions and completing assignments. Now, it's more about understanding the why behind what I'm learning. So like in my current research projects, I'm not just looking for answers but also questioning the methods. This deeper engagement makes learning more enjoyable and is something I've grown into as I've matured.

2. Bachelor's Student 2:

00:00

Interviewer: Let's start with how you behave in different settings. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change or does it remain the same?

00:15

Student: Oh, that's quite a question. Well, I think I'm pretty consistent in terms of my core personality, but the way I express myself definitely changes. At university, I'm more guarded and, I guess, more formal. I pay a lot of attention to how I present my arguments and make sure I'm respectful and considerate of diverse viewpoints. At home, it's a lot more laid-back. I'm much more casual and, you could say, a bit more outspoken with my family and friends because it feels like a safe space where I can really be myself without worrying about being judged.

00:50

Interviewer: Would you describe yourself as more of an introvert or an extrovert? Please provide examples.

00:58

Student: I'd definitely consider myself an extrovert. I thrive on interaction. Like, at university,

I'm always involved in different clubs and love organizing events. It energizes me to be around people and engage in social activities. For example, I recently helped organize a cultural night, and it was exhilarating handling the logistics, coordinating with people, and seeing it all come together. In contrast, I notice that after spending too long alone, I start to feel a bit restless and seek out company.

01:35

Interviewer: How easy is it for you to get along with others? Any specific examples or scenarios?

01:42

Student: I find it pretty easy to connect with people. I'm naturally empathetic, which helps me build rapport quickly. For instance, I remember this one group project where there was a bit of tension between two team members. I took it upon myself to mediate, listen to both sides, and help find a compromise. It's moments like these where I think my ability to get along with different personalities really shines. However, I sometimes struggle with people who are very closed off as it takes more effort to engage them, and it can be challenging to understand their viewpoints.

02:20

Interviewer: Are you someone who plans everything out, or do you prefer spontaneity? Give me some examples.

02:28

Student: Oh, I'm all about spontaneity! Planning too much feels restrictive to me. I prefer to take things as they come, which makes life more exciting, I think. Like, last month, I decided on the spur of the moment to join a weekend hiking trip with some classmates. We had a blast, and it was a welcome break from my routine. But this approach can sometimes backfire, especially with deadlines; I've had a few close calls with assignments where I've had to pull all-nighters because I didn't plan well.

03:05

Interviewer: Do you consider yourself imaginative and creative, or more down-to-earth and traditional? Examples?

03:13

Student: I'm definitely on the creative side. I love experimenting with new ideas and pushing

boundaries. In my art class, I often choose unconventional materials and techniques to express my ideas, which sometimes surprises my classmates and instructors. This creativity spills over into other areas too, like problem-solving in my part-time job at a café, where I've come up with some innovative ways to improve customer service.

03:50

Interviewer: How often do you experience negative thoughts, such as stress or depression? Can you give examples?

03:59

Student: Umm, it happens occasionally, especially during exam periods or when juggling multiple responsibilities. I tend to stress about meeting expectations and deadlines. For example, during finals last semester, I was so anxious about my grades that I couldn't sleep well for several nights. I've been working on managing these feelings by practicing yoga and mindfulness, which has helped a lot to maintain a more positive outlook.

04:40

Interviewer: Does your gender influence how you learn or your personality? Examples?

04:48

Student: I don't really think my gender plays a big role in how I learn, but I do feel that it influences how I'm perceived in group settings. Being male, I sometimes feel there's an expectation for me to take the lead or be more assertive, which isn't always how I see myself. For instance, in discussions, I've noticed people often look to me to start the conversation, which has pushed me to become more proactive.

05:20

Interviewer: How does being a bachelor student influence your learning and personality, particularly your area of study?

05:28

Student:

Yeah, being in a bachelor's program, specifically in Accounting and Finance, has really opened up my world. It's gotten me really into understanding global issues and different cultures, making me way more open-minded and curious. I've also become more analytical and critical about how I take in information. Like, now I catch myself following international

news more often and trying to get to the bottom of what's really going on behind the scenes. It definitely makes class discussions more interesting and enriches my studies quite a bit.

06:10

Interviewer: Does your personality influence your learning style?

06:17

Student: Absolutely, being extroverted has made me favour interactive learning environments where I can discuss and debate ideas with others. This preference has led me to excel in seminar-style classes where participation is key. It's through lively discussions that I find I learn best, as they help me to clarify and reinforce my understanding.

06:50

Interviewer: Has your personality changed as you've grown older?

06:57

Student: Yes, I think I've become more self-aware and reflective. When I was younger, I used to react more impulsively, but now, I take time to think things through. This change has been partly influenced by my academic experiences, which have taught me the value of thoughtful analysis before action.

07:30

Interviewer: Finally, do you think your learning changes as you grow older? Examples?

07:38

Student: Definitely, my approach to learning has matured. I used to focus just on memorizing information for tests, but now I seek to understand the 'why' and 'how' behind the facts. This deeper approach has not only enhanced my academic performance but also my general interest and enjoyment in learning. For example, in my current research project, I'm exploring not just the political outcomes but also the social dynamics that influence these outcomes, which has been incredibly enlightening.

3. Bachelor's Student 3:

00:00

Interviewer: Let's start. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change or does it remain the same?

00:15

Student: Oh, definitely, there's a change. Like, at university, I kinda feel like I need to be more, um, composed, more... serious, you know? There's this sense of, um, needing to show that I'm really serious focused, especially around professors. But at home, oh, it's a totally different story. I can just relax, be silly, and not worry about keeping up that studious image. It's like, at university, I'm wearing this mask of professionalism, and at home, I'm just my goofy self, especially with my younger siblings. We play video games, watch silly movies, and I'm way more relaxed and vocal. So, yeah, it's like I'm navigating two worlds, which is kinda exhausting, but also, it's taught me how to, like, adapt depending on the situation.

01:05

Interviewer: Interesting, do you see yourself more as an introvert or an extrovert? Can you give examples?

01:12

Student: I think I'm a bit of both, but leaning more towards introversion. I like social gatherings and can be quite outgoing in familiar settings, but large groups or meeting new people can be, like, really scary. I need a lot of downtime to recharge after social events. Like, after a day of classes and maybe a club meeting, I love to just retreat to my room, maybe listen to music or just sit quietly. It helps me process the day and enjoy my own company. But in smaller group settings or with close friends, I can be quite chatty and energetic. I think it's that balance that keeps me feeling like I can handle social situations without overwhelming myself.

01:58

Interviewer: How easy do you find it to get along with others? Can you provide examples or scenarios?

02:06

Student: Generally, I get along well with most people. I try to be empathetic and understanding, which I think others appreciate. There's this one time, during a group project, where we had conflicting ideas about how to proceed. I listened to everyone's concerns and suggested a compromise that made sure everyone's voice was heard and we took it from there.

It worked out really well, and it taught me the value of patience and diplomacy. However, I do find it challenging when I encounter very aggressive or confrontational people. It takes a lot out of me to deal with conflict, so I sometimes avoid it, which isn't always the best approach. Learning how to handle these situations better is something I'm working on.

03:00

Interviewer: Are you someone who plans everything out in an organized manner or do you prefer being spontaneous?

03:08

Student: I'm a planner, through and through. I feel more at ease when I know what's coming. I have calendars, apps, and lists to keep everything organized. Like, I plan my study schedules, meals, even downtime. This one time, I had planned a study schedule for finals two months in advance. It was a bit intense, but it helped me stay on track without getting overwhelmed. But I've been trying to be more spontaneous too. Recently, I joined some friends on a last-minute road trip to Oman, which was out of character for me but so much fun.

03:58

Interviewer:

Do you see yourself as more imaginative and creative, or more down-to-earth and conventional? Could you give some examples?

04:06

Student:

I think I'm more creative. I'm always looking for new ways to approach problems, especially in my studies. In my engineering courses, when we're tasked with designing solutions, I try to think outside the box. For instance, we had a project where we needed to improve an existing mechanical tool. Instead of making minor tweaks, I proposed a completely new redesign that made the tool more efficient and user-friendly. It was risky, but it paid off. Outside of university, my hobbies include photography and love taking pictures of different angles and subjects. It's a way for me to express my creative side and see the world from different perspectives.

04:50

Interviewer: How often do you find yourself dealing with negative thoughts, like stress or depression? Can you give examples?

04:58

Student: Oh, that happens quite a bit, especially around deadline seasons. I overthink things, which can lead to more stress. Like last semester, I had an assignment deadline which was due at the same time as two exams, and I found myself doubting my abilities and if I could really handle everything. It was a tough period, but I reached out for support from my friends and family, which really helped. They taught me strategies for managing my thoughts and staying focused on one task at a time, rather than getting overwhelmed by the big picture. It's a work in progress, but I'm getting better at managing these negative thoughts.

05:40

Interviewer: Does your gender influence how you learn or your personality? Can you give examples?

05:48

Student: It's hard to say, but I think there are expectations from society on what each gender should do, and this can shape our experiences you know? Like for me as a man in a male field like engineering, I can see how gender affects team interactions, especially when female colleagues are involved. There are stereotypes about gender roles within highly technical fields. I remember one group project with the presence of a female teammate and her ideas were taken less seriously. This was a moment where I recognized the importance of supporting diversity and inclusion within such fields. Experiences like these make us realize the importance of standing up to the backward ideas of what society asks of us and making sure both genders get equal opportunities.

06:35

Interviewer: I agree. So how does being a Bachelor student influence your learning and personality, especially in your area of studies in engineering?

06:43

Student: Oh man, being in an engineering bachelor's program has really opened up my eyes. It's more than just learning from textbooks; it's about figuring out who I am and what I want to do in the world. In engineering, each class and project gives me a real chance to see how things fit together and work in the real world, you know? This has pushed me to be more hands-on in everything I do. For example, I got involved in designing a more efficient water

system for our campus. It's pretty cool to apply what we learn in class directly to solve real problems. It really shows how we can make a difference with our skills.

07:30

Interviewer: That's cool! So would you say your personality influences your learning?

07:38

Student: Absolutely, I learn best when I can get my hands dirty, you know? I'm the kind of person who gets concepts really quickly when I can touch and do stuff with the materials. Like in workshops or practical sessions, I'm always the guy jumping first to try out the tools or build the models. Doing this just makes me understand the material better and also makes learning more fun! Plus, I'm energetic, totally unrelated because I love sports, so I love jumping on these opportunities where I can be really involved. It's definitely a huge plus in my engineering studies.

08:10

Interviewer: That's interesting to hear. And has your personality changed as you've grown older?

08:17

Student: Yes, a lot a lot. I've become more self-aware in my actions. I used to be impulsive, and act without thinking, but now, I take time to reflect before making decisions. This maturity has come a bit from my university experiences, which have taught me the value of planning things out. And this change is proof in in how I handle group projects and leadership roles. I think a lot more before I act on it, and make sure that my actions lead to positive outcomes for everyone involved in group projects.

08:55

Interviewer: Okay great. So the final question is, do you think your learning changes as you grow older? Can you share any examples?

09:03

Student: Definitely, as I've grown older, my approach to learning has changed from just observing things to now actively engaging with the materials, like I do with my hands. I used to rely a lot on lectures and notes, but now I love to apply knowledge in practical settings, which only helps me understand the material even more. For example, in my current internship, I apply engineering principles in real-world scenarios, troubleshooting and

improving systems. This practical application of knowledge has not only improved my academic skills but also prepared me for professional challenges in engineering like in my internship last summer.

4. Bachelor's Student 4:

00:00

Interviewer:

To begin, do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Well, there's definitely a shift. Like, at university, I feel like I need to be more reserved and, you know, serious. It's like, you know, you have to keep up a certain level of professionalism. I'm studying business, so there's a big focus on how you present yourself. But at home, it's totally different. I'm way more relaxed, joking a lot, and, um, I laugh way louder. It's like I'm two different people sometimes, but I guess it's just about adapting to like where I am and what I'm doing. I'm still me, just different sides of me come out depending on the situation.

01:00

Interviewer: Interesting. Do you identify more as an introvert or an extrovert? Please provide some examples.

01:08

Student: I'd say I'm more of an introvert. I really enjoy my quiet time and need time to recharge, especially after a long day of lectures or social stuff. I love reading and reading a good book is actually my favorite way to relax. But, um, I'm not totally a hermit—I do get involved in student council and stuff on campus, but I prefer roles that let me manage things or work behind the scenes rather than being out front. It's like I enjoy being involved but in a way that doesn't drain me, you know?

01:50

Interviewer: How easy do you find it to get along with others? Can you provide some scenarios?

01:58

Student: I find it pretty easy to get along with most people. Being somewhat introverted helps because I tend to listen more than I talk, which people really appreciate. Like, in group projects, I often end up being the mediator, helping to sort out conflicts by understanding everyone's perspectives. For example, last semester, we had a big disagreement in our group about a marketing project direction, and I was able to help everyone find a compromise by getting them to share their views and concerns. It can be tough, though, when others don't give back the same respect or effort, which has taught me a lot about patience and leadership.

02:45

Interviewer: Are you an organized person who follows a plan, or do you prefer spontaneity? Provide some examples.

02:53

Student: I'm definitely an organized person. My calendar is my best friend. I schedule everything—assignments, meetings, even reminders to call my parents every Sunday. Last month, I had all my midterms and project deadlines planned out, and I planned my study sessions around them. This structure really helps me stay on top of things without feeling overwhelmed. But, um, I've been trying to be more spontaneous lately; like last week, I joined some friends on an impromptu trip to a nearby city, and it was really refreshing to just let go and enjoy the moment without overthinking.

03:35

Interviewer: Would you say you are more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student: I think I'm a mix of both. My creativity shows up in problem-solving. I'm studying engineering, so often, the challenge is to find innovative solutions to technical problems. Like, recently, we had to design a cost-effective water filtration system for rural areas, and I suggested using locally sourced materials to cut costs, which was well-received. On the other hand, I'm realistic about what's feasible, especially regarding budget and resources, which keeps my creative ideas grounded.

04:30

Interviewer: Do you often find yourself experiencing negative thoughts, like stress or depression? Examples?

04:38

Student: Yeah, it does happen, especially during times of high academic pressure. I tend to worry a lot about my grades and future job prospects, which can get pretty stressful. Last year, I was working on my thesis and applying for internships at the same time, and the uncertainty really got to me. I started meditating and talking more openly with my peers about these feelings, which helped me realize I wasn't alone. It's been a journey, but I'm learning to manage these thoughts better by focusing on the present and taking things one step at a time.

05:20

Interviewer: How does your gender influence your learning and your personality, if at all? Can you give examples?

05:28

Student: I'm not sure if it directly influences my learning, but it definitely plays into the dynamics within group settings. As a female in the marketing field, sometimes I feel I have to assert myself more to be heard, which has made me a stronger communicator and more assertive. In group discussions, I make it a point to speak up and share my ideas, which not only helps me stand out but also boosts my confidence. It's tough at times, but it's also empowering to challenge those barriers and show what I can contribute.

06:10

Interviewer: Does being a bachelor student influence your learning and personality? How does your area of study play into this?

06:18

Student: Definitely, being a bachelor student in marketing has shaped how I approach learning and problem-solving. It's a field that requires a lot of creativity and strategic thinking, which has made me more innovative and market-focused not just academically but in general life as well. My studies require a lot of adaptability and understanding of consumer behaviour, which has spilled over into my personal habits, making me more aware of trends and proactive in my approaches. It's fascinating how much your field of study can mold various aspects of your personality and daily routines.

06:55

Interviewer: Lastly, has your learning changed as you've grown older? Examples?

07:03

Student: Absolutely, with time I've shifted from focusing on memorizing to understanding and applying knowledge. When I started my degree, I was mostly concerned with passing exams and getting good grades, but as I progressed, I realized the importance of truly understanding the material. Now, I try to apply what I learn in practical settings, like in marketing simulations, where theory meets real-world application. This deeper engagement has not only improved my grades but also my satisfaction and interest in my studies. It's more about the learning journey now than just the outcomes.

5. Bachelor's Student 5:

00:00

Interviewer: Let's start with how you behave in different settings. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: That's an interesting question. I think I adapt quite a bit between the two environments. At university, I'm definitely more serious and focused. There's this sense of needing to be on my best behaviour, always trying to appear serious and engaged. But at home, I'm much more laid back. I can really be myself, joke around, and relax. It's like I'm two different versions of myself, but I think it's just about fitting into the different roles expected of me in each setting.

00:55

Interviewer: Do you see yourself more as an introvert or an extrovert? Can you provide some examples?

01:03

Student: I'd probably say I'm more of an introvert. I value my alone time and enjoy quieter activities like reading or going on long walks by myself. However, I'm not antisocial; I

participate in a few clubs at university, like the debate team, which might seem surprising. It allows me to engage deeply on topics I'm passionate about, which suits my introverted nature. It's not about avoiding people, but about choosing the right things to interact with.

01:45

Interviewer: That's interesting to hear. So how easy is it for you to get along with other people? Can you provide examples or scenarios?

01:52

Student: I find it easy to get along with others because I try to be considerate all the time. In my experience, listening well is key to good relationships. See, I had a roommate that I didn't share much in common with in the beginning, but by listening and showing interest in their hobbies, we found common hobbies and managed to build a strong friendship. Now we are close friends haha. Also, sometimes I struggle with very extroverted people, as their energy can be too much for me. But I've learned to set limits and communicate openly about my needs, which has helped a lot.

02:40

Interviewer: Are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:48

Student: I lean more towards being organized. I feel more in control and less stressed when I know what my schedule looks like. For example, I use a digital planner to track all my assignments, exams, and even social events. This organization was particularly helpful during a semester when I was juggling part-time work with my studies. Being organized helped me ensure I never missed a deadline and could also make time for relaxation and social activities.

03:25

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:33

Student: I think I'm more down-to-earth and practical. My major in computer science requires a lot of logical thinking and problem-solving, which suits my realistic mindset. For example, when working on coding projects, I focus on finding the most efficient and reliable solutions

rather than the most creative ones. But at the same time, I do appreciate creativity in others and enjoy seeing how different perspectives can lead to unique solutions in group settings.

04:10

Interviewer: How often do you find yourself experiencing negative thoughts, like stress or depression? Examples?

04:18

Student: It happens occasionally, especially during periods of high academic pressure. I stress about performing well and meeting expectations. For example, during finals week last year, I was very anxious about my grades because I had set high standards for myself. My parents also expected me to get the top marks in my class so it was extra stress for me. So to handle this kind of stress, I started talking about my concerns with best friend, and this really helped me a lot with the pressure. I'm not saying I'm good at handling stress completely, as I'm still learning, but I'm learning to manage my stress better by focusing on effort rather than perfection.

04:55

Interviewer: Does your gender influence how you learn or your personality? Can you give examples?

05:03

Student: Honestly, I haven't felt that my gender has influenced my learning style or personality. I try to approach my studies and interactions with an open mind. However, I do notice that sometimes there are expectations based on gender, like assuming I might not be interested in tech fields because I'm female. Like what? That's so sexist haha. So I try to challenge these stereotypes by participating actively in tech meetups and workshops, showing everyone that yes a girl can be interested and even skilled in something traditionally done by men.

05:40

Interviewer: Wow, that's amazing. So moving on, how does being a bachelor student influence your learning and personality? How does your area of study play into this?

05:48

Student: Being a bachelor student in computer science has definitely shaped both my learning style and my personality. It taught me to be more detail-oriented, which translates into my

personal life as well. For example, when planning a trip or managing my finances, I use the same logical approach I apply in my programming projects. It's interesting to see how the skills I develop in my academic life can improve my personal effectiveness.

06:25

Interviewer: Yes, that is interesting. Lastly, has your learning changed as you've grown older? Examples?

06:33

Student: Yes, it has changed a bit. When I started my bachelor's, I was mostly focused on memorizing information to pass exams. But then eventually, I've shifted towards understanding and applying the knowledge instead of simply memorizing. Like in my recent project, I focused more on how the theories I learn can be applied to solve real-world problems, such as developing software solutions for local businesses. This has not only deepened my understanding but has also made my experience much pay off as it made me realize how academic can be connected to the real world.

6. Bachelor's Student 6:

00:00

Interviewer: Let's begin by discussing your behaviour in different environments. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Um, I would say there's definitely a shift. At university, I am more professional, and I don't show my true self. I'm studying law, so there's a certain level of formality expected in classes and when interacting with my teachers. I try to speak more formally and behave in a way that shows seriousness about my future profession, because I have to be. At home, though, I'm much more relaxed. I joke around a lot, and I give my opinions on things without thinking of the consequences. It's like I switch gears depending on the setting, which I think is normal for most people.

01:00

Interviewer: Interesting. Would you describe yourself as more of an introvert or an extrovert? Please share some examples.

01:08

Student: I lean more towards being an extrovert. I do really well in social settings and love interacting with new people. Being involved in the student government gives me a chance to engage actively with my peers, organize events, and lead discussions. It energizes me to be around people, and I find that my ability to connect easily with others has been a huge advantage, especially in networking events related to my field. However, I also recognize the importance of downtime, and to rest, so I make sure to balance my social activities with quiet time to recharge.

01:50

Interviewer: How do you find getting along with other people? Can you provide specific examples or scenarios?

01:58

Student: I generally get along well with others. I think my outgoing nature helps a lot. Like currently we have this group project and we had a conflict over the direction of our research paper. I stepped in the role of a leader to make sure everyone had a chance to speak up and remind them that at the end of the day, we are all working towards the same goal. So we managed to find a solution and so far I believe result was successful because everyone is working hard on this project and I think it's going to be great. And also, somehow, we all become closer now as classmates, and maybe future friends, who knows?

02:45

Interviewer: That's great to hear! Hope it goes well. So next question, are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:53

Student: I am definitely an organized person. My calendar is packed with schedules for classes, meetings, and personal commitments. I find that maintaining a strict schedule helps me manage my responsibilities effectively, especially given my involvement in various extracurricular activities. For example, I carefully planned our student council's meeting, scheduling every session and coordinating with all speakers advance. However, I also learned

the value of spontaneity from my friends, who sometimes force me to do last minute activities with them such as watching movies or going for a drive.

03:35

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student: I think I'm a mix of both. My creative side comes out when I'm problem-solving or brainstorming for team projects. So like when we had to come up with a unique fundraising idea for our law review, I suggested a mock trial event that would involve local celebrities. It was a hit and really fun to organize! On the flip side, my studies require a realistic approach, especially when analysing cases and applying legal principles, so I've gotten really good at making sure my creative ideas are practical.

04:30

Interviewer: How often do you experience negative thoughts, such as stress or anxiety? Please share specific examples.

04:38

Student: Like many students, I do experience stress, especially around exam periods or when juggling multiple deadlines. Last semester, I felt overwhelmed with balancing my coursework and my duties of the student council. I realized the importance of self-care and started to eat healthier because when I get stressed, I eat a lot of junk food. Also, regular exercise is what I included in my routine. And I think this really helped reduce my stress.

05:20

Interviewer: Does your gender influence how you learn or your personality? Examples?

05:28

Student: I haven't felt that my gender directly influences my learning, but I am aware that it shapes some interactions. In the field of law, being female, I sometimes encounter stereotypes and sexism. I use these moments as opportunities to demonstrate my skills.

06:10

Interviewer: How does being a bachelor student influence your learning and personality? How does your area of study play into this?

06:18

Student: Studying law has certainly shaped my personality, making me more analytical and detail-oriented. It has also taught me the importance of looking at issues from multiple perspectives, a skill that's not only applicable academically but also valuable in personal relationships and understanding issues in the real world. For example, when analysing cases, I've learned to consider not just the legal aspects but also the ethical and human implications, which enriches my understanding and discussions.

06:55

Interviewer: Lastly, has your learning changed as you've grown older? Examples?

07:03

Student: Absolutely. Over the years, I've shifted from focusing mainly on grades to valuing the learning process itself. Early in my studies, I was very grade-oriented, but now I appreciate the deeper understanding and the skills I gain from each class. For example, in a recent constitutional law class, instead of just memorizing articles and clauses, I focused on understanding their implications and how they apply to current events, which made the learning experience much more engaging.

7. Bachelor's Student 7:

00:00

Interviewer: Let's start with how you behave in different environments. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Yes, there is definitely a difference. In university, I'm much more reserved. I think it's about trying to maintain a certain level of professionalism, especially in my field of study, which is business. I need to come across as analytical, right? But at home, it's a completely different atmosphere. I'm much more relaxed, probably a lot louder and more expressive. I'm the youngest in my family, so at home, I'm often the jokester, always trying to lighten the mood.

00:55

Interviewer: Would you describe yourself as more of an introvert or an extrovert? Please share some examples.

01:03

Student: I'd say I'm an extrovert. I really enjoy being around people. Participating in group discussions and projects is what I do best. For example, in my management class, I'm always the first to volunteer for presentations or to lead our group projects. I get a lot of energy from these interactions. It's not just about putting forth ideas; it's about the back and forth, the dynamic that gets created in a group setting. That's something that really excites me and where I feel I can contribute the most.

01:50

Interviewer: How do you find getting along with other people? Can you provide specific examples or scenarios?

01:58

Student: I generally find it easy to get along with people. I think it's because I try to approach every interaction with positivity. Last semester, I was part of a project team where there was some friction initially because everyone had strong opinions. I took it upon myself to organize a casual meet-up outside of class, just to break the ice. It helped a lot. We all got to know each other on a personal level, which made our work sessions more collaborative and less tense. It's about finding that common ground, you know?

02:45

Interviewer: Are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:53

Student: I'm definitely a planner. I have to be, given all the clubs I'm involved in and my course load. I use a digital planner to keep track of everything. For example, last week I had two exams and a debate competition. Without my planner and a strict schedule, I wouldn't have been able to manage my preparation effectively. But I also see the value in being spontaneous. Sometimes, unplanned moments, like a last-minute dinner with friends provide the most memorable experiences.

03:35

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student: I'm a mix, really. My creativity comes out in solving problems. In my finance class, we were tasked with developing a budgeting plan for a hypothetical startup. I used a creative approach to allocate funds in ways that maximized returns while minimizing risks. However, I also pride myself on being realistic, especially when it comes to personal goals and career aspirations. I weigh the practical aspects heavily, like job prospects and return on investment for my education.

04:30

Interviewer: How often do you experience negative thoughts, such as stress or anxiety? Please share specific examples.

04:38

Student: Stress is definitely part of the package as a university student. During midterms or finals, I can get pretty anxious. Last semester, I had a tough economics exam that had me doubting my preparation. I dealt with it by organizing study groups and breaking down the material into manageable parts, which helped reduce my anxiety. I also make it a point to exercise regularly, which helps me manage stress and keep a positive mindset.

05:20

Interviewer: Does your gender influence how you learn or your personality? Examples?

05:28

Student:

As a guy, I don't really think my gender plays a role in how I learn. In my economics classes, the mix of guys and girls is pretty even, and it feels like we're all treated the same. When I join in on class discussions, I focus on making sure what I say is clear and well thought out. I do this to understand the material better and show what I know, not because I feel I have to prove anything about my gender. It helps me be more confident and sharp in my studies.

06:10

Interviewer: How does being a bachelor student influence your learning and personality? How does your area of study play into this?

06:18

Student: Being a bachelor student in business has really shaped my analytical skills. I approach problems differently now, always trying to consider various angles and implications. This analytical mindset isn't just restricted to academics you know; it's something I carry into my daily decision-making process. I find myself automatically weighing the costs and benefits of everything I do, just as I would when analysing market trends.

06:55

Interviewer: Interesting. Lastly, has your learning changed as you've grown older? Examples?

07:03

Student: Yes, definitely. When I started my degree, I was mostly focused on just getting good grades. Now, I'm more interested in understanding the deeper concepts behind what I'm learning. For instance, instead of just memorizing economic models, I try to apply them to real-world situations, like the current market trends or economic policies. This deeper understanding makes learning more interesting and engaging, and I believe it will benefit me a lot in my future career.

8. Bachelor's Student 8:

00:00

Interviewer: Let's begin. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Oh, there's definitely a shift. At university, I'm more reserved and focused. I study business management, so the environment is quite intense and requires a lot of concentration. I feel like I need to be more practical, which means I'm quieter and more serious. At home, though, I'm much more relaxed. I'm not sure if this is related, but I'm the eldest sibling, so I'm more outgoing and playful, kind of taking on a leadership role but in a fun way. It's a good balance, I think, showing different kinds of my personality depending on the situation.

00:55

Interviewer: Interesting. Would you describe yourself as more of an introvert or an extrovert? Please share some examples.

01:03

Student: Hmm, maybe more of an introvert. I enjoy alone time and find peace in having time to myself, which helps me recharge, especially after long hour classes. For example, I often spend my evenings reading or working on puzzles, which allows me to reset. However, I also enjoy group activities like study sessions or team projects where I can contribute quietly but effectively.

01:50

Interviewer: How do you find getting along with other people? Can you provide specific examples or scenarios?

01:58

Student: I generally get along well with others because I try to be supportive and understanding. And I think being an introvert where I'm like mostly quiet and keep to myself, I just agree with others so conflict gets avoided easily this way.

02:45

Interviewer: Are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:53

Student: Well I'm trying to be more organized. I have to otherwise I will be lost in keeping up with my courses. It's a must for university. I'm not that great at it but trying to improve in that area.

03:35

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student: I think more towards being realistic, especially given my field of study, which requires a lot of practical thinking. Like when working on business case studies and such.

04:30

Interviewer: How often do you experience negative thoughts, such as stress or anxiety? Please share specific examples.

04:38

Student: Stress is a regular part of the university experience, especially in engineering. I often feel the pressure during project deadlines.

05:20

Interviewer: Does your gender influence how you learn or your personality? Examples?

05:28

Student: In my field of business, guys and girls are almost the same in numbers so like I don't really think gender affects this. I'm a girl and at times yes like I do feel I have to prove my abilities a bit more to gain the same recognition as the guys in class. But this is only at times and I think because of today's society with things changing and stuff, it's different now. Girls have more rights and don't need to like prove themselves as much as before. And I guess because of this the answer to your question would be not really, because of today's changing world dynamic. Maybe years ago, yes, but nowadays, no. I don't think so.

06:10

Interviewer: How does being a bachelor student influence your learning and personality? How does your area of study play into this?

06:18

Student: Yeah, you know, being in the business program as a bachelor's student has really shaped me to be more disciplined and resilient. The program is tough, with a lot of challenging courses and demanding projects that really push you. It kind of forces you to develop a level of dedication and determination that also impacts your personal life too. It's taught me how to handle pressure. Like, for example, I've gotten really systematic in how I approach problems now, not just in university but in everyday life too. It's all about breaking things down into steps and tackling them one by one.

06:55

Interviewer: Lastly, has your learning changed as you've grown older? Examples?

07:03

Student:

Oh for sure, my whole approach to learning has really grown. Before, all I care about was to pass the subject. But now, I really take the time to understand the topics. And this was because of my recent internship where I had to apply what I learned in class to actual business situations. Like I was thinking oh now this makes sense, this was theory in class and now it's more practical. So that's what made me really start caring about the understanding the courses more now.

9. Master's Student 1:

00:00

Interviewer: Let's start with how you behave in different environments. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Oh, there's definitely a change. In a master's program, you're expected to be more than just a student; you're sort of turning into an expert in your field, which for me is business. At university, I'm really focused. That's because we usually get into deep talks about market strategies and the impact of what we decide now on the future. But at home, I totally relax. I'm a lot more laid-back and funny. It's just a nice break from being so serious all the time, and I really enjoy just chilling out with family and friends.

01:00

Interviewer: Would you describe yourself as more of an introvert or an extrovert? Please share some examples.

01:08

Student: I identify more as an introvert, which suits the research aspect of my studies. I enjoy data analysis and reading journals articles, which requires long periods of focused alone time, which I kinda enjoy. But like you know, I learned to enjoy more extroverted activities such as attending conferences. These have become important for sharing my research and building professional connections, which are super important for a successful career in academia.

01:50

Interviewer: How do you find getting along with other people? Can you provide specific examples or scenarios?

01:58

Student: It depends really. But in general, I find it easy to get along with others if we share common goals and interests. Effective collaboration is required in research, and I've had to work on several team projects. Like once I collaborated on a project where we were analyzing the impact of social media marketing strategies on different consumer age groups. Even though each one of us had different opinions on how to approach this research topic, we found a common solution and ended up having an amazing presentation too.

02:45

Interviewer: Are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:53

Student: In my master's program, being organized is not just a preference, it's a necessity. There's a lot to juggle, research, coursework, and sometimes adjunct teaching. I use digital tools to keep track of all my deadlines and commitments. However, I do appreciate spontaneity in my personal life; it provides a balance which I feel is important. Occasionally, I pick up a new hobby just like that, which helps keep my life balanced and more interesting.

03:35

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student:

Um, in my MBA studies, you really need a good mix of creativity while also being realistic. It's like, you need creativity to come up with innovative business strategies to challenges. For example, right now I'm working on a project where we're trying to figure out marketing plans for low-cost consumer products aimed at emerging markets. It's definitely a creative task, but it's also super important to stay realistic and focus on realistic things like the financial limits of the markets we're targeting.

04:30

Interviewer: How often do you experience negative thoughts, such as stress or anxiety? Please share specific examples.

04:38

Student: Stress is very normal for us in graduate school, given the high expectations and the competitive environment. I often feel pressure, especially when approaching presentation deadlines and preparing for presentations. I manage this by taking it one step at a time, reminding myself that it will all pass. So I take rests and recharge by doing a hobby or watching a movie.

05:20

Interviewer: Does your gender influence how you learn or your personality? Examples?

05:28

Student: As a female in the business field, sometimes I encounter biases that have made it necessary for me to prove myself by working harder than my male colleagues. This has really shaped both my personality and my professional life to become more assertive. You know, I make it a point to voice my ideas confidently in seminars and discussions, ensuring that my contributions are acknowledged and valued. It's been a real challenge, but it's also really empowered me to stand my ground and make sure I'm being heard.

06:10

Interviewer: How does being a Master's student influence your learning and personality? How does your area of study play into this?

06:18

Student: Being a master's student has helped my analytical skills and critical thinking skills. It requires a level of independence that's higher than in undergraduate studies. So when doing case studies, I use such skills to my benefit.

06:55

Interviewer: Final question, has your learning changed as you've grown older? Examples?

07:03

Student: Yes, it did. As I've progressed in my academic career, my approach to learning has become more focused on application rather than just knowledge acquisition. I'm more interested in how my work can contribute to real-world changes. For example, my research on

consumer behaviour is related to my work, where I study the F&B market and making sure to create effective marketing strategies.

10. Master's Student 2:

00:00

Interviewer: Let's start. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: There's a big difference for sure. In my master's program in education, I need to be more serious, especially since I also teach undergraduates. This role requires me to be more structured. At home, I'm much more relaxed and playful, especially around my nieces and nephews.

00:55

Interviewer: Would you describe yourself as more of an introvert or an extrovert? Please share some examples.

01:03

Student: Mostly introvert. I spend a lot of time reading about educational theories and planning lessons, because that's not just what I'm studying but it's also my job, you know? However, teaching and leading educational workshops push me into more extroverted roles, where I need to be engaging and interactive.

01:50

Interviewer: How do you find getting along with other people? Can you provide specific examples or scenarios?

01:58

Student: I generally get along well with my colleagues and students because clear communication and empathy are important in education. For example, during a team project to develop a new curriculum, we had diverse ideas about inclusion strategies, so each one would argue that their approach was the better one. So I organized several meetings where we used

these differences to improve on our project, rather than let it divide us. However, I find it challenging when others resist things, which requires patience and sometimes compromise.

02:45

Interviewer: Are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:53

Student: I am mostly organized. My studies, teaching responsibilities, and involvement in educational seminars demand a high level of organization. But I also enjoy spontaneous moments in teaching, like impromptu discussions or interactive activities that aren't planned but happen with my students in class, which makes the class sessions even more interesting.

03:35

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student: My work in education requires both creativity and realism. For example, when designing lesson plans, I often need to think creatively to make the content engaging and relevant for diverse student groups. Yet, these plans must be grounded in realistic expectations of what can be achieved within the constraints of time, resources, and student abilities. Balancing these aspects is crucial for effective teaching and curriculum development.

04:30

Interviewer: How often do you experience negative thoughts, such as stress or anxiety? Please share specific examples.

04:38

Student: Stress is quite common, especially when balancing teaching with my own coursework and research. For example, meeting thesis deadlines while preparing for lectures can be really overwhelming. I manage this by practicing time management and mindfulness techniques, which help me maintain focus and reduce anxiety. And also, sharing experiences and coping strategies with my colleagues in the education program has been really helpful.

05:20

Interviewer: Does your gender have an influence on your personality? Can you share any examples?

05:28

Student: Because I'm a female, uh, I feel like it would reflect in certain things that I would do in a very feminine and like girly ways you know. So yeah it does.

06:10

Interviewer: How does being a master's student influence your learning and personality? How does your area of study play into this?

06:18

Student: Doing a master's in education has really deepened my understanding of how people learn, which has made me more reflective and patient, both as a teacher and in my personal life. It has also improved my leadership skills, as I often need to guide discussions and manage classrooms effectively.

06:55

Interviewer: Lastly, has your learning changed as you've grown older? Examples?

07:03

Student: Definitely. My learning has become more focused on practical applications rather than theoretical knowledge. I constantly look for ways to apply educational theories in real classroom settings, which is important for my development as an educator. For example, I recently included a new teaching technique focused on collaborative learning, which has proven to improve student engagement. This focus on practical things had made my studies more relevant and interesting.

11. Master's Student 3:

00:00

Interviewer: Let's start with your behaviour in different settings. Do you act the same way in university as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: There's definitely a difference. In my MBA program, everything is more disciplined, more academic, more strict you know. So of course I need to be more structured and even

more competitive, especially in classes with debates and group projects. At home, I'm different and go with the flow with my family and friends too.

00:55

Interviewer: Would you describe yourself as more of an introvert or an extrovert? Can you give examples?

01:03

Student: I think more of an extrovert, which serves me well in MBA. For example, I work better with people so I do well in networking events and group discussions, which are important parts of the MBA program. However, I need to learn to also be an introvert sometimes because a lot of times we need to reflect on our studies and work, especially when doing essays and analysing case studies which needs a lot of thinking.

01:50

Interviewer: How do you find getting along with other people? Easy? Or hard? Can you provide specific examples or scenarios?

01:58

Student: I generally get along well with others. Collaboration is important in an MBA program, where much of the work is done in groups. So a recent example was during a strategic management class where we had to develop a market entry strategy for a company. Of course everybody had different opinions, but I found out that listening closely to all perspectives helps make it a smoother collaboration.

02:45

Interviewer: Are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:53

Student: In the MBA program, you almost have to be organized because of how fast the courses move. It's hard to stay on top of things as it already is! So I plan a calendar which basically includes my entire life on it, both university stuff and personal stuff. So yes I would say I'm more of an organized person.

03:35

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student: The MBA demands a bit of both. You need creativity to think outside the box, especially when coming up with solutions to business cases that aren't straightforward. Like during a marketing simulation, I proposed a unique advertising strategy that was unusual from the others, but it was a highly successful in the simulation. But yeah, I get that being realistic is just as important, since every creative idea must be backed by data and to consider things from financial perspective as well.

04:30

Interviewer: How often do you experience negative thoughts, such as stress or anxiety? Please share specific examples.

04:38

Student: The pressure is high in an MBA program, especially during exam periods. Recently, I've experienced significant stress during our capstone project, which involved creating a business plan from scratch. Balancing this with coursework and personal commitments was challenging. I manage stress through regular exercise like going to the gym.

05:20

Interviewer: Does your gender influence how you learn or your personality? Examples?

05:28

Student: In business school, I haven't felt that being a female directly affects how I learn, but it certainly has an affect yes, especially in leadership roles within group settings. Biases and stereotypes about gender exist everywhere, so you just need to adapt and ensure that your contributions are valued and recognized. Like that is what I do.

06:10

Interviewer: How does being a master's student influence your learning and personality? How does your area of study play into this?

06:18

Student: So being a master's student has helped develop my strategic thinking and leadership abilities. Like for example, working through real-world business cases has improved my ability to analyse complex information quickly and make decisions effectively.

06:55

Interviewer: Lastly, has your learning changed as you've grown older? Examples?

07:03

Student: Yes, it changed. Over the years, my approach to learning has changed from absorbing knowledge to applying it practically. In the MBA program, I relate theories directly to real business challenges, and I analyse their practical implications. For example, in my operations class, instead of simply understanding supply chain concepts, I applied these to my work, to improve a client's non-profit distribution strategy, which has really helped improve their operational efficiency.

12. Master's Student 4:

00:00

Interviewer: Let's begin. Do you behave the same way in university as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Umm, there's definitely a bit of a change. You know, at university, especially in an MBA program, there's this expectation to always be on top of your game. I tend to be, I guess, more formal and focused because, um, you're constantly interacting with professors. But at home, it's a total 180. I'm way more calm, less stressed, maybe even silly, and I don't feel that pressure to always be, you know, 'perfect'. It's nice to have that balance, really.

00:55

Interviewer: Would you describe yourself as more of an introvert or an extrovert? Please share some examples.

01:03

Student: Oh, I'd say I'm more of an extrovert. I really thrive on interaction, and that helps a lot in the MBA setting. Like, um, during networking events or group projects, I'm usually the one leading conversations or bouncing off ideas with classmates. But, I do have my introvert moments, sometimes after a long day of classes and meetings, I just need some time to myself to recharge, maybe just to watch a movie or read a good book or something.

01:50

Interviewer: How do you find getting along with other people? Can you provide specific examples or scenarios?

01:58

Student: I find it easy to get along with people. There was this one time, though, during a strategy class, where we had a bit of an argument in our group work. So I decided after that to take out everyone for coffee and just talking about out outside university really helped. I feel like I'm the peacemaker haha, not just at university but also at home.

02:45

Interviewer: Are you an organized person who follows a plan, or do you prefer being spontaneous? Provide some examples.

02:53

Student: I'd like to think I'm organized, especially with the workload we have. My calendar is my best friend, haha. Everything from assignments to social events goes in there. And I've found resilience to be key; tackling a thesis project really tests your limits. So I need to stay organized.

03:35

Interviewer: Do you consider yourself more imaginative and creative, or more down-to-earth and realistic? Examples, please.

03:43

Student: Hmm, that's a tough one. I think it's a mix. For instance, in marketing classes, I love coming up with creative campaigns and thinking outside the box. But when we're looking at, say, financial modelling, my realistic side takes over. You have to be grounded in data and practicality, right? Balancing creativity with realism is key, especially in business.

04:30

Interviewer: How often do you experience negative thoughts, such as stress or anxiety? Please share specific examples.

04:38

Student: Oh, stress is huge part of an MBA, especially during exam times or when we have, like, major presentations, which can get pretty intense. I manage it by working out regularly and, um, I also meditate. Just ten minutes a day, but it helps a lot. And talking through things with classmates going through the same struggles helps too. It's all about managing your time and energy, really.

05:20

Interviewer: Does your gender influence how you learn or your personality? Examples?

05:28

Student: Not particularly in terms of learning, but I think it does play into group dynamics sometimes. Like, um, I've noticed in some group settings, I have to assert myself a bit more to make sure my ideas are considered, which can be a bit tiring. But it's also empowered me to be more vocal and assertive, which I guess has been a positive thing.

06:10

Interviewer: How does being a master's student influence your learning and personality? How does your area of study play into this?

06:18

Student: It has definitely made me more analytical and strategic, not just about business problems but in how I approach life decisions too. Like, weighing pros and cons before making big decisions, assessing risks, that kind of thinking. It's also made me more resilient, I'd say. You face a lot of challenges here, and it teaches you to keep pushing forward, to be determined and such.

06:55

Interviewer: Lastly, has your learning changed as you've grown older? Examples?

07:03

Student: Absolutely, yeah. I've become more focused on learning for application rather than just passing a test. Like now, when I learn something new, I immediately think about how it can be applied in real-world scenarios, especially in my current job or future business ventures. It's more about practical application now, which I find much more rewarding.

13. Master's Student 5:

00:00

Interviewer: Alright, let's start with the first question. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Umm, that's a good question. I'd say, yeah, mostly, I behave quite similarly because I'm naturally a very open person, you know? At university, I participate a lot, I ask a lot of questions, engage a lot in discussions. At home, it's pretty much the same; I'm always involved, always chatting and discussing different topics with my family and friends.

01:00

Interviewer: Interesting, let's move on to the next question. Do you see yourself more of an introvert or an extrovert? Can you give examples that show this?

01:15

Student: Oh, that's kind of tough. I think I lean more towards being an introvert. Like, I enjoy social gatherings, but they can be quite draining for me. I need a lot of alone time to recharge after being around a lot of people. For instance, after a day at university, I love to just go back to my room, maybe read something or listen to music alone. It helps me to, you know, decompress as they say.

01:45

Interviewer: Makes sense. Now, do you find it easy to get along with other people? Why or why not? Can you provide some examples?

02:00

Student: Yeah, I do find it quite easy to get along with others. I'm adaptable and keep people's needs before mine, which I think helps. Like, during group projects at uni, I usually try to be considerate and supportive, which makes it easier to interact with different kinds of people.

02:30

Interviewer: Good to hear that. Are you an organized person who follows a plan, or do you prefer being spontaneous and going with the flow?

02:45

Student: I would say more of going with the flow. If friends come up with a last-minute plan, I don't mind doing that, so like last minute travels or going to an event, such things you know? So to answer your question, yeah I prefer being spontaneous more.

03:15

Interviewer: Alright. Moving on, do you find yourself to be more imaginative and creative, or rather down-to-earth and conventional?

03:30

Student: Umm, I think I'm quite creative. For example, in my engineering classes, I really enjoy coming up with unique solutions and experimenting with different methods and materials. I'm always looking for new ideas and inspirations, which I think shows a creative side. But of course, there are times when I need to be practical and conventional, especially when dealing with engineering standards or formal project requirements.

04:00

Interviewer: Now, do you often find yourself experiencing negative thoughts? Do you get stressed or depressed easily?

04:15

Student: Well, I wouldn't say easily, but yeah, I do experience stress, especially around exam times or when I have multiple deadlines approaching. I try to manage it by keeping a good study schedule and taking breaks when needed. Sometimes I get a bit anxious, but I've been working on strategies to cope with that, like mindfulness and talking things out with friends or a counsellor.

04:45

Interviewer: Do you think your gender has an influence on the way you learn?

05:00

Student: Hmm, that's hard to say for sure. I think there might be societal expectations that influence how genders are seen in educational settings, but personally, I don't feel like my gender has directly affected my learning style, even though it's very much expected that guys mostly enter the engineering field. I'm very much focused on my interests and abilities rather than letting gender stereotypes say what I should be good at or interested in.

05:30

Interviewer: And does your gender influence your personality?

05:45

Student: I guess to some extent, yeah. There are roles everyone expects guys to have and some roles women to have, you know. So like me being a guy, a man, I sometimes feel expected to

take on leadership roles, and that can influence how I interact in group settings. I try to be aware of these things but also just be myself regardless of these expectations.

06:00

Interviewer: Moving on, do you think your academic division influences how you learn? What about your area of study?

06:15

Student: Definitely, being in a Master's program has shaped how I approach learning. There's a lot more self-directed study and research compared to my Bachelor's. In terms of my area, I'm studying engineering, which requires a lot of hands-on and practical learning. It's really shaped how I engage with information, seeking out real-world applications and thinking deeply about engineering problems.

06:45

Interviewer: Does your academic division influence your personality?

07:00

Student: Umm, maybe not directly influence, but it does impact how I see myself and my future. Being in a Master's program has made me more serious and focused on my career goals. It's also helped me develop resilience and perseverance, especially when dealing with complex projects or setbacks.

07:15 Interviewer: How about your personality influencing the way you learn?

07:30 Student:

Uh, yes. Being somewhat introverted, I prefer self-study and deep reading over group study sessions. My curiosity drives me to explore topics in depth, which complements my academic work where independent research is valued.

07:45

Interviewer:

Do you think your personality changes as you grow older?

08:00

Student:

Yeah, I think so. I've become more confident and assertive as I've gotten older. University challenges, like presentations and defending my ideas, have really helped me grow. I also

think I've become more open-minded and patient, learning to listen to others' perspectives and take criticism constructively.

08:30

Interviewer: Last question, do you think your learning changes as you grow older?

08:45

Student: Yes, definitely. As I've matured, I've become more strategic in my learning, focusing more on what's practically useful and what aligns with my career aspirations. I also value learning beyond academics now, like developing soft skills and understanding real-world issues, which I think is a sign of maturing in how I approach education and life in general.

09:00

Interviewer: Thank you so much for your insights. That wraps up our interview unless there's anything else you'd like to add?

09:15 Student:

No, I think that's everything. Thanks for this opportunity to be interviewed. f

14. Master's Student 6:

00:00 Interviewer: Okay, let's begin with the first question. Do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change, or does it remain the same?

00:15

Student: Oh, that's an interesting question. Umm, I think there's a bit of a difference, honestly. At university, I tend to be more reserved. I'm a bit cautious about expressing my opinions unless I'm really sure about what I'm saying. At home, though, I'm much more relaxed and open. I think it's because I feel safer and more comfortable with family, where I know I won't be judged harshly.

00:45

Interviewer: That makes sense. Now, would you say you are more of an introvert or an extrovert? Can you provide some examples?

01:00

Student: Well, hmm, I would say more of an introvert. For example, I prefer spending my evenings reading a book or watching a series rather than going out to social events. Even when I'm in social settings, I usually find myself sticking to one-on-one conversations rather than participating in large group discussions. It's just more comfortable for me to have deeper, more meaningful interactions.

01:30

Interviewer: I see. Do you find it easy to get along with other people? Why or why not?

01:45

Student: Yes and no haha. I speak more than I listen, which can get me into trouble a lot! For instance, during group projects, I usually want to do things my way, because I feel it's the correct way or that I may have experience in that area more than my group members. But at the end of the day, even if it makes them upset or get mad, I know I am doing this for the greater good, because at the end of the day, we all want to get a good grade.

02:15

Interviewer: So would you say you are an organized person who follows a plan, or do you prefer being spontaneous?

02:30

Student: I'm definitely a planner. I feel more comfortable when I know what to expect. Like, at the beginning of each semester, I map out my schedule and deadlines using by writing it all in my planner. Yes call me old fashioned but I like writing everything down instead of having it on my phone. Also writing things down on paper believe it or not helps me manage my time effectively and reduces my stress. However, I can adapt, if necessary, but I definitely prefer having a plan.

03:00

Interviewer: That's very interesting to hear. Moving on, would you describe yourself as more imaginative and creative, or down-to-earth and conventional?

03:15

Student: Hmm, I think I'm more on the down-to-earth side. For example, when it comes to problem-solving in my studies, I usually stick to the methods that are proven to work. I like creative approaches, but I rely on what's tried and true, especially in academic settings where there's less room for risk.

03:45

Interviewer: Understandable. Do you often find yourself experiencing negative thoughts? Do you get stressed or depressed easily?

04:00

Student: I wouldn't say easily, but it does happen, especially during periods of high academic pressure. I try to manage it by keeping a balanced schedule and making sure to include activities that I enjoy, like jogging or yoga. These activities help me keep a positive mindset and manage stress more effectively.

04:30

Interviewer: Do you think your gender has influenced the way you learn?

04:45

Student:

Possibly, in very subtle ways. Growing up, I felt like there were certain expectations based on my gender, like being more collaborative and nurturing in group settings, which might have influenced my preference for team-oriented projects and cooperative learning environments. It's hard to say how much of that is due to my personal inclination vs. societal influences.

05:15

Interviewer: And does your gender influence your personality?

05:30

Student: Yes, I think it does to some extent. There are definitely societal expectations that shape how we express ourselves. Being male, I've noticed there are certain stereotypes about being assertive or self-assured that I sometimes feel pressured to conform to, even if it's not my natural tendency.

05:45

Interviewer: Interesting. Do you think your academic division influences how you learn?

06:00

Student: Yes, absolutely. As a Master's student, I've had to become more independent in my learning compared to my undergraduate days. The complexity of the subjects requires a deeper level of engagement and self-direction, which has definitely shaped my approach to learning.

06:30

Interviewer: Does this level of study also influence your personality?

06:45

Student: I believe it does. It's made me more disciplined and focused. Like a Master's degree requires a level of commitment that has made me more serious about my career and future, and I think that has affect my personality to be more goal-oriented.

07:00

Interviewer: And how about your personality influencing the way you learn?

07:15

Student: Definitely, being naturally more reserved as an introvert, I find that I do well in settings where I can take my time to absorb and reflect on information. This fits well with the nature of Master's studies, where there is a huge focus on critical thinking and in-depth analysis.

07:30

Interviewer: Do you think your personality changes as you grow older?

07:45

Student: Yes, for sure. I think as I've gotten older, I've become more open to new experiences and less worried about making mistakes. This has allowed me to embrace opportunities for learning and growth that I might have shied away from when I was younger.

08:00

Interviewer:

Lastly, do you think your learning changes as you grow older?

08:15

Student: Yes, of course. With age, I've learned the importance of practical and applicable knowledge. My learning has become more focused on acquiring skills that are directly relevant to my career goals, rather than just theoretical knowledge that we are taught in classrooms. This is something that has definitely evolved as I've grown older.

08:30

Interviewer: Thank you for sharing your thoughts with us today. Anything else you'd like to add?

08:45

Student: No, I think we covered everything. Thank you for the thoughtful questions! It was really great to reflect on these aspects of my personality and learning.

15. PhD Student 1:

00:00

Interviewer: So, are you ready?

00:08

Student: Yes, I'm ready. I'm looking forward to our chat today.

00:13

Interviewer: Great. Let's start with the first question.

00:20

Student: Sure.

00:26

Interviewer: Alright, do you behave the same way in university or in the classroom as you do at home with your family and friends? Does your personality change or does it remain the same?

00:41

Student: Right, um, yeah, I definitely switch it up depending on where I am. In the classroom, I am a different person, and I'm fully focused and stuff. But at home, I'm more relaxed so it's important to be adaptable.

0:55

Interviewer:

And why is this adaptability important to you?

01:16

Student: Oh, it's very important to be adaptable. Because even as a teacher, I make sure to adapt my teaching methods to fit different students, so like I know who my students are and

how they act in my class, so I try to mix things up in order suit their needs. They are kids at the end of the day so this is very important.

01:36

Interviewer: That's an interesting approach. Let's continue to the next question. Do you see yourself more of an introvert or extrovert? Can you give examples that show this?

01:45

Student: Yeah, I'd say I'm sort of in the middle, a bit of both introvert and extrovert. I think they call that ambivert.

01:49

Interviewer: Yeah exactly.

Student: So like, the introverted side of me comes out more during research as a student. But then the extroverted side of me comes alive in the classroom when I am teaching my students.

02:45

Interviewer: Great example. Now moving on to question three. Do you find it easy to get along with other people? Why or why not? Can you provide some examples and scenarios that illustrate this?

02:49

Student: Yes, I have to be because I'm a teacher. But not so much when I'm a student, but I'm working on that.

Interviewer:

Interviewer: Great, so the next question is, do you find yourself to be more imaginative and creative, or rather down-to-earth and conventional/traditional? Can you provide some examples/scenarios that illustrate this.

04:47

Student: I think more creative, so creativity is very important in how I manage my teaching approach. Because I try to make it fun for my students, especially since they are kids, you know. We are talking about year 5 and 6 students so the material needs to be fun for them to keep them interesting and engaged in the topic I'm teaching.

04:59

Interviewer: I'm sure you need to, sounds like a challenge. Okay, so do you find yourself often experiencing negative thoughts? Do you get stressed or depressed easily? Sad or angry? Can

you provide some examples/scenarios that illustrate this?

06:34 Student: Yeah, pursuing a PhD is... well, it's very challenging and can be stressful at times. And um I try to deal with it as best as I can, so I use mindfulness and time management strategies to deal with this.

07:06

Interviewer: Do you think your gender has an influence on the way you learn? Why or why not? Can you provide some examples that shows how your gender impacted the way you learned?

07:10

Student: Umm, well not really, I mean it didn't happen to me in my field because in the education field it's mostly women and I grew up going to an only female school so I was not ever really studying or working with males. But I know for sure men and women are treated differently from a young age because of our culture and because of this I am sure it can influence other people's personality. But I think mostly it's my determination that keeps me going through even the most difficult phase of my PhD.

08:14

Interviewer: So do you think your academic division like you being a PhD student, influences how you learn? Why or why not? And does it affect your personality as well?

08:26

Student: Of course, me being a PhD student really affects the way I learn because we learn all these different ways of doing research for a PhD which is different from how it was during my undergraduate studies. Like now, we need to use analytical thinking and critical thinking when doing our research. And I think that also affects my personality too because I need to be more analytical, more serious, and more disciplined, you know?

Interviewer: Great. So finally, does your personality change as you grow older? And does your learning change as well?

09:30

Student: Oh, for sure.

09:32

Interviewer: My passion and commitment to finishing my PhD makes me more disciplined and determined to push through it. And because of that, especially at my age, my personality

does change as I grow older, and it's affected by many things such as my marriage, my kids, doing a PhD and things like that. And at the same time, doing the PhD like I mentioned before changes my learning as I grow older.

13:53

Interviewer: Thank you for your time. Is there anything else you would like to add?

14:31

Interviewer: That's all. Thank you for the opportunity to interview me.

16. PhD Student 2:

00:00

Interviewer: Are you ready?

00:08

Student: Yes, let's get this going. I'm pretty excited to talk about this!

00:13

Interviewer: Haha great! Let's start with the first question.

00:20

Student: Hit me with it!

00:41

Interviewer: Do you behave the same way in university/in the classroom as you do at home/with your family & friends? Does your personality change or does it remain the same?

Student: So, in the classroom, I'm all business. You know, really focusing about the material I am taught. But at home, it's a whole different vibe, and I'm much more relaxed and easy going. But not so much because I still need be a bit tough with my kids because they need to grow up being disciplined haha.

00:49

Interviewer: I'm sure yeah. And do you see yourself more of an introvert or an extrovert? Can you give examples that show this?

01:16

Student: Oh, totally an extrovert. Like, I'm the one who starts discussions in class and at parties, I'm usually mingling and talking to everyone! It's just who I am.

01:36

Interviewer: I can see that haha. Do you find it easy to get along with other people? Why or why not? Can you provide some examples that illustrate this?

01:45

Student: Yeah, I'd say I do. I mean, I love meeting new people, you know? Like at academic conferences, I'm usually the one introducing myself first, making those connections. It's kinda fun for me.

01:49

Interviewer: Are you an organized person who follows a plan through or do you prefer being spontaneous and going with the flow? Can you provide some examples or scenarios that illustrate this?

02:17

Student: I'm all about planning. My lectures, my syllabus, you name it, it's planned. Like, I have my grading system all mapped out weeks ahead. It keeps me on track, you know?

02:45

Interviewer: Do you find yourself to be more imaginative and creative, or rather down-to-earth and conventional/traditional? Can you provide some examples/scenarios that illustrate this?

02:49

Student: Honestly, I'm more traditional. As a professor for my courses, I stick to the foundational stuff, like, I really focus on the established theories.

02:53

Interviewer: Do you find yourself often experiencing negative thoughts? Do you get stressed or depressed easily? Sad or angry? Can you provide some examples/scenarios that illustrate this?

02:57

Student: Not really, I keep things pretty positive. But yeah, grading time can be a bit of a drag with all those papers piling up!

03:31

Interviewer: Do you think your gender has an influence on the way you learn? Why or why not? Can you provide some examples that show how your gender impacted the way you learned?

03:38

Student: Hmm, not really, I don't think it plays a big role. I've always been pretty focused on my goals, and I don't feel like my gender has swayed that much.

03:49

Interviewer: Do you think your gender has an influence on your personality? Why or why not? Can you provide some examples that show how your gender impacted your personality?

04:34

Student: Maybe in being encouraged to be more assertive and outspoken, which has really helped me in my academic and professional life.

04:47

Interviewer: Do you think your academic division like as now as PhD student influences how you learn? Why or why not? Can you provide some examples that show how your academic division impacts the way you learn? What about your area of study?

04:59

Student: Oh, definitely. Doing my PhD has made me much more critical, but also more skeptical, you know? It's like the more I knowledge I gain, the more I think I don't know. And even though I like traditional methods, I still challenge them to make sure they hold up.

06:24

Interviewer: And does you being a PhD student affect your personality? Why or why not? Can you provide some examples that show how your academic division impacts the way you learn? What about your area of study?

06:34

Student: For sure, it's made me more disciplined, more methodical in my approach. And teaching undergrads, I try to pass that on to them, too.

06:43

Interviewer: Do you think your personality influences the way you learn? Why or why not? Can you provide some examples that demonstrate how your personality impacted the way you

learned?

07:06

Student: Yup, being extroverted helps a lot in group settings in the class. I get a lot from discussions and debates, it gives me this energy burst, you know? And it really makes the learning stick.

07:10

Interviewer: Do you think your personality changes as you grow older? Why or why not? Can you provide some examples that demonstrate this?

07:12

Student: I think I've gotten more confident over time, more comfortable in my own skin, especially in academic settings. It shows in how I handle my classes and interact with colleagues.

08:14

Interviewer: Do you think your learning changes as you grow older? Why or why not? Can you provide some examples that demonstrate this?

08:26

Student: Absolutely, I've moved on from just absorbing facts to really engaging with the material, questioning it, and applying it. And I think that's what a lot of us in PhD are doing anyway. It's a deeper and more definitely more fulfilling way to learn.

09:19

Interviewer: Great, great. Thank you so much for your time!

17. PhD Student 3:

00:00 Interviewer:

Ready?

00:08 Student:

Yes, I am.

00:13

Interviewer: Do you behave the same way in university and in the classroom as you do at home/with your family & friends? Does your personality change or does it remain the same?

00:41

Student: Hmm, I think I behave in the same way. I am who I am, whether it's as a student or at home. Of course I might do things differently at home because there are no rules like at university. But at the end of the day, my personality remains the same mostly.

1:21

Interviewer: Great. So next question. Do you see yourself more of an introvert or extrovert? Can you give examples that show this?

01:45

Student:

I consider myself a mix of both depending on the situation and where I am.

02:17

Student:

Certainly. The introverted part of my personality allows me to think of the topics we discussed in class in a deeper way, and the extroverted side of my personality is when I am participating in group work or workshops.

02:45

Interviewer:

Moving on to question three. Do you find it easy to get along with other people? Why or why not? Can you provide some examples that show this?

02:49

Student:

Yeah. I'm an easy-going person and I find it easy to integrate with my classmates and my co-workers.

03:31

Interviewer:

Okay so the next question. Are you an organized person who follows a plan through or do you prefer being spontaneous and going with the flow? Can you provide some examples/scenarios that illustrate this?

03:38

Student: Spontaneous and going with the flow. In my life I am not organized at all, only in my work. Because work requires certain structure, certain rules to follow, you know. But in life, you just sometimes

03:49

Interviewer: Great, so next question is do you find yourself to be more imaginative and creative, or rather down-to-earth and conventional and traditional? Can you provide some examples that illustrate this?

04:34

Student: I am more creative. I used to come up with different ideas, I like to be different and do new ways of things. I don't know how to give you an example of this, but I am just creative in coming up with solutions to things in a unique way.

04:59

Interviewer: So do you find yourself often experiencing negative thoughts? Do you get stressed or depressed easily? Sad or angry? Can you provide some examples/scenarios that illustrate this?

06:24

Student: Not very often. But if I am stressed I like to stress eat or go to sleep.

06:34

Interviewer: So do you think your gender has an influence on the way you learn? Why or why not?

07:06

Student: I don't think so. Because from school onwards, both males and females are given opportunities to learn.

07:10

Interviewer: Does your field of study influence your learning approach?

07:24

Student: Yes, by a lot. My field of education is different from other fields obviously and obviously like the way we learn in education is different from say finance or engineering.

08:14

Interviewer: And how does your academic division impact your personality?

08:26

Student: I don't think me being a PhD student affects my personality as much.

08:41

Interviewer: Does your personality affect the way you learn?

08:57

Student: Yes, since I am not a very organized person, it affects the way I learn, which is in a very disorganized manner a lot of procrastination haha.

09:32

Interviewer: Next question, does your personality change as you grow older?

09:57

Student: Of course it develops with age, but it reaches a certain point where it stops.

10:30

Interviewer: So would you say that as you grow older, you might not be as open to learning new things?

10:55

Student: Um, yes. I don't think I will have the energy and effort to learn new things, you know. I would just want to rest and spend time with my loved ones.

11:27

Interviewer: Lastly, does your learning change as you grow older?

11:34

Student: I think you follow the same things, but because you don't try new things like new learning methods, you would just stick to what you know, so no, I don't think my learning changes as you grow older.

12:21

Interviewer: Thank you very much for your time!

18. PhD Student 4:

00:02 Interviewer:

Are you ready?

00:08 Student:

Yes let's do this

00:13 Interviewer:

Great. We'll start with the first question.

00:20 Student:

Alright

00:26 Interviewer:

Excellent. Are you the same at university and at home, or do you find your personality changes?

00:41 Student:

Um, yeah, I'm definitely more relaxed at home. In university, I guess I'm a bit more reserved, you know?

00:49 Interviewer:

Would you say you're more of an introvert or an extrovert? Can you share some examples?

01:16 Student:

I'd say I'm more of an introvert. Like, I prefer small groups and quiet spaces to think.

01:36 Interviewer:

Okay good. Let's move to the next question. Is it easy for you to get along with people? Why or why not? Any examples?

01:45 Student:

Getting along with others is kinda easy for me, I think? I just try to be empathetic and listen a lot.

01:49 Interviewer:

Are you a planner or do you prefer to be spontaneous? What are some examples?

02:17 Student:.

I'm certainly a planner. I like having a schedule as it just makes everything less stressful to handle..

02:45 Interviewer:

So on to the third question. Is it easy for you to get along with people? Why or why not? Any examples?

02:49 Student:

Empathy and effective communication are essential when dealing with people, which I feel help me in getting along with people.

02:53 Interviewer:

So do you consider yourself imaginative and creative, or more down-to-earth? With examples please?

02:57 Student:

In both my PhD journey and personal life, I would say that I am a pretty down to earth person. For example, when I face a complex issue, I prefer to break it down into practical steps that can be easily understood and applied. This helps me keep things grounded and relatable, especially when I'm discussing ideas with classmates who might not share the same background.

03:31 Interviewer:

Moving on to the next question. Do you often have negative thoughts or get stressed easily? Can you share some instances?

03:38 Student:

As any person I do get stressed and face negative thoughts. When this happens, I take time off for myself that day and cancel any commitments to wind down and relax.

03:49 Interviewer:

That's good. So do you think your gender influences how you learn? Can you explain how with examples?

03:53 Student:

I believe that both genders are provided with equal opportunities these days which reduces the influence of gender on how we learn.

04:34 Interviewer:

Sticking with the gender theme, do you think that your gender affects your personality in any way? Can you provide examples?

04:47 Student:

Of course, when talking about personality, it is affected by gender to some extent especially since society has certain expectations based on gender, but I like to think that my interests, decisions, and behaviours are more shaped by my personal experiences and values rather than

just gender alone. For example, being collaborative and open to different opinions is not really tied to gender, but more to my experiences and personality.

04:59 Interviewer:

Interesting viewpoint. Does your academic level affect how you learn? What about your area of study? Any examples?.

06:24 Interviewer:

Does your academic level affect how you learn? What about your area of study? Any examples?

06:34 Student:

PhD study has significantly sharpened my analytical skills, teaching me to critically evaluate information and theories critically.

06:43 Interviewer:

Does your academic level influence your personality? How so? Can you give examples, including how your area of study plays a part?

07:10 Student:

Completely so. Pursuing a PhD in Business has made me more analytical and detail-oriented, especially in decision-making where I now rely heavily on data.

07:12 Interviewer:

Do you think your personality affects your learning style? Why or why not? Examples?

07:26 Student:

Yes, it has certainly shaped my learning style. I'm naturally curious and detail-oriented, which drives me to thoroughly explore topics.

08:32 Interviewer:

Last two questions now. Do you believe your personality has changed as you've gotten older? Why and how?

09:19 Student:

Yes, my personality has matured with age for sure. I've become more patient and less reactive.

09:30 Interviewer:

Lastly, do you think your approach to learning has evolved with age? How so? Examples?

09:32 Student:

My approach to learning has also evolved with age yes. I feel it focuses more on practical

applications like for example, by prioritizing key information and applying them to solve problems.

10:53 Interviewer:

Thank you for your time and participation.

19. PhD Student 5:

00:00

Interviewer: Okay, let's start. Ready?

00:08

Student: I'm ready.

00:13

Interviewer: Great, we'll start with the first question. Do you behave the same way in university/in the classroom as you do at home with your family & friends? Does your personality change or does it remain the same?

00:41

Student: Well it changes of course depending on where I am. In the classroom I am more quiet and at home I am loud. So yes it depends on the environment.

00:49

Interviewer: Do you see yourself more of an introvert or extrovert? Can you give examples that show this

01:45

Student: I view myself as both really. My career made me more of an extrovert because I deal a lot with people but when I get the chance like my hobbies which includes lots of reading it's because of my introvert nature.

02:17

Interviewer: And are you an organized person who follows a plan through or do you prefer being spontaneous and going with the flow? Can you provide some examples/scenarios that illustrate this?

Student: My academic work requires lots of organization so yes I am more organized. Using apps for organizing my study has been a game changer. It helps me be organized. And no I don't like last minute plans because it stresses me out a lot.

02:45

Interviewer: Do you find yourself to be more imaginative and creative, or more traditional? Can you provide some examples of this?

02:49

Student: More creative I would say. I like to think of creative ways to approach challenges because it's fun.

02:53

Interviewer: Do you find yourself often experiencing negative thoughts? Do you get stressed or depressed easily? Sad or angry? Can you provide some examples/scenarios that illustrate this?

02:57

Student: Sometimes yes, especially now because of my PhD which is very stressful. But when this happens, I try to calm myself down by relaxing and listening to a podcast or something. And then when I get back to work to study, I change my learning approach to see if it can help destress better.

03:31

Interviewer: Okay, so do you think your gender has an influence on the way you learn? Why or why not? Can you provide some examples that shows how your gender impacted the way you learned?

04:38

Student: No I don't think so, at least here in Dubai we are all given equal chances to learning from a young age.

07:06

Interviewer: Does being a PhD student influence your approach to learning?

07:10

Student: It does a lot yes. The depth of PhD study has really affected my learning. Now I prefer to learn by taking time to deeply reflect on each topic, integrating it thoroughly into my existing knowledge. Before that, I would just memorize the material and that's it.

08:14

Interviewer: Interesting. And the impact of academic division on your personality?

08:26

Student: Yes for sure being a PhD students affects my personality. I am more serious and more analytical now in my studies and thought process.

09:19

Interviewer: Lastly, does your personality influence how you engage with your PhD studies?

09:30

Student: For sure yes. My curiosity and also dedication really help me with my PhD studies.

13:53

Interviewer: Thank you so much for taking the time. Any other questions?

14:01

Student: That's all, thank you.