The impacts of professional development program on school improvement: a study among school teachers at a private school in Abu Dhabi

أثر برنامج التطوير المهني على تحسين المدرسة: دراسة بين معلمي المدارس في مدرسة خاصة في أبو ظبي

by

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ABSTRACT

This study examines the effectiveness of conducting continuous professional development (CPD) programs for school teachers on students' achievement, encompassing attainment, progress, and study skills. CPD has gained considerable attention in the education sector as a means to enhance teachers' knowledge, skills, and instructional practices. The study employs a mixed-methods approach, incorporating qualitative interviews and quantitative data analysis. The findings demonstrate that CPD initiatives positively impact teachers' pedagogical knowledge, instructional strategies, and overall professional growth. Additionally, the study reveals a significant correlation between teachers' participation in CPD and students' academic achievement, including improved attainment levels, enhanced progress, and strengthened study skills. These results highlight the importance of investing in continuous professional development for teachers, as it directly influences student outcomes and contributes to the overall quality of education.

ABSTRACT (in Arabic)

يهدف هذا البحث إلى دراسة فاعلية تنفيذ برامج تطوير المهارات المهنية المستمرة لمعلمي المدارس على تحقيق الطلاب فيما يتعلق بالإنجازات الأكاديمية والتقدم ومهارات الدراسة. وقد حظي تطوير المهارات المهنية المستمرة بالاهتمام الكبير في قطاع التعليم كوسيلة لتعزيز معرفة المعلمين ومهاراتهم وممارساتهم التعليمية. يستخدم هذا البحث منهجًا مختلطًا يجمع بين المقابلات النوعية وتحليل البيانات الكمية. توضح النتائج أن مبادرات تطوير المهارات المهنية تؤثر إيجابيًا على المعرفة التربوية للمعلمين واستراتيجيات التدريس والنمو المهني العام. بالإضافة إلى ذلك، يكشف البحث عن ارتباط مهم بين مشاركة المعلمين في تطوير المهارات المهنية المستمرة وتحقيق الطلاب الأكاديمي، بما في ذلك تحسين مستويات الإنجاز وتعزيز التقدم وتعزيز مهارات الدراسة. تسلط هذه النتائج الضوء على أهمية الاستثمار في تطوير المهارات المهنية المستمرة للمعلمين، حيث تؤثر بشكل مباشر على نتائج الطلاب وتسهم في جودة التعليم بشكل عام.

DEDICATION

This paper is dedicated to my beloved family members, those who never failed to believe in me, empower me, and praise my humble efforts. I owe you a debt of gratitude. I cannot thank you enough for the unconditional love you have shown me. The completion of this work would not have happened without your unwavering support, sincere prayers, and brilliant encouragement.

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I am immensely grateful to all individuals and organizations who have contributed to studying the effectiveness of teachers' professional development and student achievement. The teachers' participation, along with the support of school administrators and educational institutions, has enriched our research. The researchers and scholars whose work has laid the foundation for our investigations deserve recognition. I would also like to acknowledge the funding agencies and organizations that have supported our research. Finally, I express my gratitude to my colleagues, mentors, and advisors for their invaluable guidance and support throughout the research process. Your unwavering support and belief in the importance of this study have made a lasting impact on the field of education.

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Chapter 1: Introduction

1.1 Chapter Overview

The effectiveness of teachers' professional development programs in improving student achievement has been a topic of significant interest and research within the field of education. As the education landscape continues to evolve, there is a growing recognition of the vital role that teachers play in fostering student learning and success. Consequently, understanding the impact of professional development on teachers' instructional practices and its subsequent influence on student achievement has become a priority for educational researchers, policymakers, and practitioners.

This research study aims to examine the effectiveness of teachers' professional development programs in the context of student achievement. By investigating the relationship between professional development and student outcomes, valuable insights can be gained to inform educational practices, policies, and decision-making processes. This introduction provides an overview of the research background, research problems, objectives, and the significance of studying the effectiveness of teachers' professional development and its impact on student achievement.

Teachers' professional development refers to structured learning opportunities designed to enhance teachers' knowledge, skills, and instructional practices. These programs can take various forms, including workshops, seminars, collaborative learning communities, and coaching. Over the years, professional development initiatives have evolved to align with the changing demands and challenges in education, focusing on evidence-based strategies, pedagogical approaches, and subject matter expertise.

The link between teachers' professional development and student achievement has been widely recognized and explored in educational research. Numerous studies have demonstrated that high-quality professional development positively influences teachers' instructional practices, resulting in improved student outcomes. However, there is still a need for further investigation to better understand the specific aspects of professional development that lead to the most significant gains in student achievement.

The research problem addressed in this study revolves around understanding the effectiveness of teachers' professional development in improving student achievement. It seeks to answer questions such as: What types of professional development programs have been most successful in enhancing teachers' instructional practices? To what extent do these improvements translate into improved student learning outcomes? How can professional development initiatives be designed and implemented to maximize their impact on student achievement?

The primary objective of this research is to examine the relationship between teachers' professional development and student achievement. Specifically, it aims to identify the key elements of effective professional development programs and their impact on various dimensions of student achievement, including academic attainment, progress, and the development of essential learning skills. By addressing this research problem, valuable insights can be gained to inform the design, implementation, and evaluation of professional development initiatives.

1.2 Significance of the Study

This research study holds significant implications for educational stakeholders, including teachers, school administrators, policymakers, and researchers. Understanding the effectiveness of teachers' professional development in improving student achievement can inform the development of evidence-based policies and practices that support teacher growth and enhance student outcomes. By identifying effective strategies and program characteristics, educational leaders can make informed decisions when designing and implementing professional development initiatives.

Furthermore, this study contributes to the existing body of knowledge in the field of education by providing empirical evidence on the impact of professional development on student achievement. It fills a gap in the literature by examining the specific aspects of professional development that have the most significant influence on student outcomes. The findings of this research have the potential to shape future research agendas, inform educational reforms, and contribute to the ongoing dialogue on improving educational practices and student success.

The introduction establishes the context and rationale for studying the effectiveness of teachers' professional development and its impact on student achievement. By addressing the research problem, objectives, and significance of the study, the groundwork is laid for conducting a comprehensive investigation into the relationship between professional development and student outcomes. This research aims to provide valuable insights that can guide the development of effective professional development programs and ultimately contribute to improved student achievement. Conducting a continuous professional development for School teachers at Abu Dhabi British curriculum and it is effectiveness on students' achievement attainment, Progress, and study skills.

The study aims to examine the most needed professional training for teachers which is directly needed to improve students' achievement and whole school performance. The studies consulted a school located in UAE to be consulted about the kind of professional development they are implementing. both quantitative and qualitative approaches.

The Main research question is why the schoolteachers should go under a continuous professional development training? And how this will be reflected on the student's achievement in three main areas, students' attainment, students' progress, and students' study skills.

Teachers in school are going under a unique and ongoing Professional development training in certain areas where they are most effective on students' academic achievement and reflect a realistic image of the school academic performance. In away the necessity of schoolteachers to develop their basics academic skills and to freshen their knowledge to fit for the current academic challenges.

The study should be used according to framework and policies implemented in UAE only.

The research suggests that teachers should continue professional development in a yearlong as meetings and interviews will be held with the middle leaders, teachers and school management. The research aims to build a strong connection between the continuous professional development which teachers receive during the academic year and how this CPD can create a strong link with the student's achievement specially in three main areas of the student's achievement which are students' attainment, students' progress, and student study skills.

The natural of the professional of the professional community development for teachers to boost their knowledge in teaching and learning as input and the outcomes should be directly reflected on the students.

For example in the attainment , when teachers are well prepared in lesson plan , teaching approach and methodologies using strategies which will boost students collaborative activities and cooperation inside the classroom , the students themselves will receive better knowledge in the classroom and will be helped to understand the lesson content more and elaborate the lesson knowledge better , as mentioned before teachers should know how to teach in order of boosting students' knowledge and experiences in the classroom therefore the attainment of the students will be raised up . When looking into several data collected from the school specially the study skills analysis, we can see that some students are determined below curriculum expectations, others are determined within curriculum expectations and others are classified above curriculum expectations.

When we investigate the first semester and the second semester after the CPD started we notice that most of the students who were below curriculum expectations have been moved to be within curriculum expectations which is a proven fact that starting the professional development for teachers has its direct and effective impact on the students results of attainment and consistency of their learning achievements.

Students' attainment is also connected to the trends of attainments in the last three years, later on the other hand, this paper will investigate the responses of teachers whether the attainment of the two years is raised up after the CPD started and what are the other benefits of this CPD on the students. Moving ahead in the student's achievement reflection, the paper is going to investigate the continuity of this CPD and the direct reflection on the students' study skills.

1.3 Problem Statement

Clearly , it has been a critical point whether the teacher professional development training has it is positive impact on the students achievement and as per the records of some previous studies mentions that when teachers teaching skills are well developed , the students will receive better quality of education which can be directly affecting their achievement positively , the study will

undergo the process of the professional training , kinds of the needed development for teachers which will enhance the quality of education in the students achievement main areas , students attainment , student progress and students study skills.

The study will consider the United Arab Emirate framework 2015 in its measurement of the students' achievement where it is located in Standard number one.

Teacher professional development (TPD) is a crucial component of ensuring high-quality education. It encompasses a range of activities and initiatives designed to enhance teachers' knowledge, skills, and instructional practices. The importance of professional development for teachers cannot be overstated, as it directly impacts student learning outcomes, promotes educational innovation, and supports the overall growth and effectiveness of the teaching profession. This article explores the key reasons why professional development is essential for teachers.

1.3.1 Importance of the Teachers professional development

1.3.1.1 Enhancing Teaching Skills and Pedagogical Knowledge

Professional development provides opportunities for teachers to continually update and refine their teaching skills and pedagogical knowledge (Alarafeen 2023; Villegas-Reimers 2003). It equips teachers with the latest research, methodologies, and instructional strategies that can improve their classroom practice. Through workshops, seminars, and training sessions, teachers can learn about evidence-based practices, differentiated instruction, assessment techniques, classroom management strategies, and the integration of technology into teaching. This ongoing learning ensures that teachers stay informed, adaptable, and effective in their instructional approaches.

1.3.1.2 Keeping Pace with Educational Reforms and Curriculum Changes

Education systems are constantly evolving, driven by changing societal needs, advancements in technology, and educational research. Professional development allows teachers to stay current with educational reforms and curriculum changes. It helps teachers align their instructional practices with new standards, objectives, and pedagogical approaches. By staying abreast of

these changes, teachers can effectively deliver relevant and engaging lessons that meet the evolving needs of their students.

1.3.1.3 Fostering Reflective Practice and Professional Growth

Professional development encourages teachers to engage in reflective practice, enabling them to critically analyze their teaching methods, identify areas for improvement, and make informed adjustments to their instructional practices. Through self-reflection and peer collaboration, teachers can reflect on their teaching strategies, assess student performance, and implement innovative solutions. This reflective process contributes to professional growth, as teachers are continuously refining their approaches and seeking ways to better meet the diverse needs of their students.

1.3.1.4 Promoting Student Learning Outcomes

Teachers are at the forefront of facilitating student learning. Effective professional development directly impacts student outcomes by equipping teachers with the knowledge and skills necessary to create engaging and effective learning environments. By implementing research-based instructional strategies, differentiating instruction, and utilizing assessment tools effectively, teachers can optimize student learning and achievement. Moreover, professional development that focuses on student-centered approaches and student well-being helps foster a positive and supportive classroom environment conducive to learning.

1.3.1.5 Building a Collaborative Professional Community

Professional development provides opportunities for teachers to connect with their peers, build relationships, and engage in collaborative learning. By participating in professional learning communities, teachers can share experiences, exchange ideas, and learn from one another. Collaborative professional development fosters a sense of collective responsibility and a culture of continuous improvement within schools and districts. It encourages the sharing of best practices, problem-solving, and the development of a supportive network of educators.

1.3.1.6 Responding to Individual Student Needs

Every student is unique, with their own strengths, challenges, and learning styles. Professional development supports teachers in developing the skills to effectively address individual student needs. By learning about differentiated instruction, inclusive practices, and strategies to support diverse learners, teachers can tailor their teaching approaches to cater to the unique needs of each student. This personalized approach promotes student engagement, motivation, and academic success.

Teacher professional development is critical for improving teaching practices, promoting student learning outcomes, and fostering a dynamic and innovative education system. By investing in professional development opportunities, educational stakeholders demonstrate their commitment to supporting teachers' growth, enhancing instructional quality, and ultimately improving student achievement. Ongoing professional development ensures that teachers remain at the forefront of educational advancements, empowering them to create inclusive, engaging, and effective learning environments that meet the diverse needs of students in an ever-evolving world.

1.4 Purpose and Objectives

The main purpose of this research is to find the connection between the teachers' professional development and the students' achievement within three direct areas:

students' attainment: attainment as measured against authorized and licensed curriculum standards, attainment as measured against national and international standards, knowledge, skills and understanding, especially in key subjects and trends of attainment over the time.

Students' progress: progress of students is making over the time and from starting point including students of determination, progress students make in lessons and the progress made in different groups and levels of students.

Learning skills: which includes students' engagement, participation and their responsibility for their own learning, students' communication skills, collaboration and interaction, connections between areas of learning.

Teacher professional development (PD) is an essential aspect of ensuring that teachers are equipped with the knowledge and skills necessary to help students achieve their academic goals (Lucas & McCormick 2010). In recent years, there has been a growing body of research highlighting the importance of teacher PD and its connection to student achievement. This research paper will explore the relationship between teacher professional development and student achievement, and the different types of professional development that have been shown to have a positive impact on student outcomes.

1.4.1 Teacher Professional Development

Teacher professional development refers to the activities, programs, and learning experiences that are designed to enhance teachers' knowledge, skills, and abilities (Mizell 2010). It involves a wide range of activities, including workshops, seminars, conferences, coaching, mentoring, and online courses. The aim of teacher professional development is to improve teacher effectiveness, increase student achievement, and enhance the overall quality of education.

1.4.2 Connection with Student Achievement

Research has shown that teacher professional development has a significant impact on student achievement. Studies have found that teachers who participate in high-quality professional development programs are more effective in the classroom, leading to improved student outcomes. For example, a study by Yoon et al. (2007) found that teacher professional development had a positive effect on student achievement in mathematics, reading, and science.

1.4.3 Types of Professional Development

There are different types of teacher professional development, including traditional workshops, online courses, mentoring, coaching, and collaborative learning communities (Alarafeen 2023). Each of these approaches has its strengths and weaknesses, and the effectiveness of each depends on the specific context in which it is implemented.

1.4.3.1 Traditional Workshops

Traditional workshops are the most common form of professional development. They involve teachers attending a one-time event, where they listen to a presentation on a specific topic. While

traditional workshops can be effective, research has shown that they are not always the most effective form of professional development.

1.4.3.2 Online Courses

Online courses are becoming increasingly popular as a form of professional development. They offer teachers the flexibility to learn at their own pace and on their own schedule. Online courses can be particularly effective for teachers who are unable to attend traditional workshops due to scheduling or geographic constraints.

1.4.3.3 Mentoring and Coaching

Mentoring and coaching involve pairing a less experienced teacher with a more experienced teacher, who acts as a mentor or coach. This approach allows teachers to receive individualized support and feedback, which can be particularly effective for new teachers or those teaching in challenging contexts.

1.4.3.4 Collaborative Learning Communities

Collaborative learning communities involve teachers working together in groups to solve problems and share best practices. This approach can be particularly effective for teachers who are working in isolation or who are seeking to improve their practice in a specific area.

Teacher professional development is essential for improving teacher effectiveness and enhancing student achievement. While there are different types of professional development, each with its strengths and weaknesses, research has shown that high-quality professional development programs can have a significant impact on student outcomes. As such, it is important for policymakers and educational leaders to invest in effective professional development programs that meet the specific needs of teachers and their students.

1.5 Research Questions

Research questions form the core of any research study, guiding the investigation and providing a clear focus for the research. They serve as a framework for the study and help to define its purpose. research questions play a crucial role in guiding the study and determining the direction

of the research. They ensure that the study remains focused, relevant, and meaningful. They are appropriately aligned with the research objectives and methodology.

1. Why should teachers take a continues professional development training?
2. How will the PCT affect students' achievement?

Is the research core questions and they are determined as the main purpose of the study, the research will go under a questioner contains of five main parts showing the teachers responses toward the professional development they have been receiving in the last couple years and how it is related to the students improvement especially when it comes to the students achievement in three main areas students attainment made in the last couple years , student progress made in the last couple years and the learning skills (study skills) which the students regularly improve.

1.6 Rationale for the Study

The United Arab Emirates is committed to improving its educational system and has invested heavily in the professional development of its teachers. The government has taken several initiatives for the professional development of teachers in the country.

One such initiative is the Teacher Professional Development Program (TPDP), launched by the Ministry of Education in 2017. The program aims to enhance the professional skills of teachers and improve student outcomes by providing relevant training.

The program provides several training courses that are designed to integrate innovative teaching techniques into the classroom. These courses are aimed at improving student performance by promoting effective teaching methods, developing the skills of teachers, and creating a collaborative teaching environment.

Another key initiative in the UAE's education system is the School Improvement Program, which is supported by the Abu Dhabi Education Council. The program aims to improve the quality of teaching by providing teachers with ongoing support and training.

The program offers a range of training courses that are focused on key areas of teaching, such as technology, special education, and science, among others. These courses are designed to provide teachers with the necessary skills to develop effective strategies for classroom instruction.

The Emirates National Schools (ENS) are another example of the focus on professional development for teachers. The ENS provides various professional development workshops and training programs for teachers that are designed to enhance their instructional quality.

Furthermore, educational institutes in the UAE have also been partnering with renowned international universities such as Harvard, Oxford, and Cambridge to promote research and development of effective teaching practices.

The UAE has implemented various initiatives such as the TPDP, School Improvement Program, Emirates National Schools and partnerships with renowned international universities for the professional development of teachers in the country. These initiatives reflect the government's commitment to educational excellence and its promise to deliver world-class education to its students.

The Ministry of Education's Teacher Professional Development Program (TPDP) provides mandatory training sessions for teachers before the start of each academic year. The program also offers ongoing professional development opportunities throughout the year.

The TPDP focuses on a range of core competencies for teacher development, including general pedagogy, assessment, classroom management, effective use of technology, and teaching students with special educational needs.

The TPDP features an online portal where teachers can access materials, resources, and training content. They can also use the portal to track their progress and receive feedback on their performance.

The Abu Dhabi Education Council (ADEC) provides regular training and professional development opportunities for teachers across Abu Dhabi's public and private schools. ADEC's programs highlight innovative teaching methods, best practices in education and technology-based learning.

The Emirates Foundation for School Education is another initiative that is playing an important role in shaping teachers' professional development in the UAE. It offers numerous distinguished programs, including programs that train teachers to teach in bilingual or technological environments.

Some universities in the UAE such as Zayed University, Khalifa University, and the UAE's Higher Colleges of Technology, offer postgraduate degree programs in education that are tailored especially for educators.

Apart from the organized professional development programs, teachers in the UAE can participate in conferences, training workshops, and online courses conducted both inside and outside the UAE. These opportunities are often hands-on and specific to a particular area of study or teaching practice.

These initiatives demonstrate the UAE's commitment to the professional development of its teachers, a key factor behind why the country continues to experience rapid reforms and improvements in its educational system.

1.7 Structure of the Dissertation

The first chapter of the dissertation sets the stage for the study by providing the background and context of the research problem which is the continuous professional development for teachers and its connection with the students' achievement. It outlines the research objectives, questions, and significance, and includes a literature review to demonstrate the existing knowledge and research gaps in the teacher's professional development and its continuity. The chapter describes the motivation of the study and why it is important for teachers to go under ongoing professional development as it is highly recommended from previous studies in the United Arab Emirates educational authority in Abu Dhabi and Dubai (KHDA 2009 AND ADEK 2009).

TPD is connected to the student's success in many ways. In the united Arab Emirate educational framework 2015 which has been used since 2016 in all private and public schools in the United Arab Emirates sets a connection between the framework standards. Briefly, standard number three which is teaching, and assessment is placed as input for standard number one which is students' achievement (attainment, progress and learning skills). Once the input is teaching, the output is the achievement so boosting teachers standard will automatically boost the student's achievement standard.

In the same chapter, the dissertation suggests the motivation of the study as the highly expected needs to improve the student's achievement in all schools across the UAE and how every school

is seeking to improve its student's performance standards and teachers' performance standards as they are connected to create a successful and improved school.

Teachers are considered the main stone for the development of any school; the learning outcomes are designed to be delivered through them hence the importance of continuous professional development was extracted.

The chapter also demonstrate the research main questions outline if the teachers receive a well-maintained professional development in teaching major will that affect the students results and achievement and what is the main link between the procedure of the teacher's professional development and the student's achievement. The chapter examines the student's achievement in three main areas, students' attainment in the last couple years, the progress the students made in core subjects in the last two years and the learning skills effectiveness in the last couple years.

The chapter takes into consideration some previous studies and what are the key findings for some of these studies and how they are connected with the dissertation.

The second chapter, the literature review provides a comprehensive overview and analysis of existing scholarly works and research relevant to the connection between the professional development of teachers and the students achievement improvement. It demonstrates the researcher's understanding of the existing literature, identifies gaps or controversies, and justifies the need for the current research.

The third chapter, the methodology section describes the research design, data collection methods, sampling techniques, and any tools or instruments used in the study. It explains how the research questions were addressed and the data analyzed. This section should be detailed enough for the study to be replicated by others.

The fourth chapter demonstrates the Data Analysis, Results and Discussion Results: The results section presents the findings of the research. It typically includes data analysis, statistical tests, visual representations such as tables, graphs, charts, and any other relevant information that supports the research objectives. Results are usually organized thematically or in response to the research questions.

Discussion: The discussion section interprets and analyses the results in the context of the research questions and objectives. It compares the findings with existing literature, addresses

any limitations or constraints, and explores the implications and significance of the results. This section often includes suggestions for future research.

The fifth chapter, Conclusion: The conclusion provides a summary of the key findings about the connection between the teachers' professional development received in the last two years and how it boosted the student's achievement in the areas of attainment, progress and learning skills, restates the research objectives, and discusses their implications in relation to the broader field of study. It also highlights the contributions of the research and may suggest areas for further investigation about the continuity of the teacher's professional development and extra links can be made with the students' achievement improvement.

Chapter 2: Literature Review

2.1 Chapter Introduction

Teacher professional development is a critical aspect of enhancing student learning outcomes and ultimately, the quality of education. Teachers require the necessary skills and knowledge to provide effective instruction to students. This literature review will examine the various strategies implemented by institutions to effectively train teachers.

Ongoing professional development is essential in ensuring that teachers consistently provide high-quality education to students. In their study, Darling-Hammond & McLaughlin (2011) highlight the importance of teacher training, noting that such training helps teachers develop new skills and learn new approaches to teaching. However, traditional methods of teacher training, such as lectures and workshops, have limitations, and the delivery of this training needs to be re-evaluated to enhance effectiveness.

One approach gaining popularity in teacher training is blended learning, which combines online learning with in-person training. The advantage of blended learning is that it allows for flexibility in delivery, and teachers can access training at their convenience (Koutrakou & Bellou, 2020). Blended learning has also been effective in improving the quality of teacher training, as it provides opportunities for collaboration and sharing of best practices among educators (Mason & Singh, 2018).

Another approach is the use of coaching and mentoring programs. These programs provide ongoing support, and feedback to teachers, improving their overall teaching practice (Desimone et al., 2015). Coaching and mentoring programs focus on specific aspects of teaching, such as classroom management, assessment practices, and instruction. Research shows that coaching and mentoring programs are effective in improving teacher practice and student achievement (Fry, 2018).

Lastly, professional learning communities (PLCs) have gained popularity in teacher training. PLCs provide teachers with opportunities for collaborative learning, allowing teachers to share best practices and implement innovative teaching strategies. Through PLCs, teachers are able

to reflect on their practice and receive feedback from their peers, which improves their teaching practices (Benson et al., 2020).

In conclusion, teacher training is essential in improving student learning outcomes. As the review shows, various strategies have been implemented to improve the training of teachers. However, these strategies need to be continually evaluated to ensure their effectiveness. The education sector needs to embrace innovative approaches to teacher training to ensure that teachers acquire up-to-date knowledge and skills.

In the United Arab Emirates (UAE), the education sector has been transformed in the past few decades. The UAE government has realized the importance of education and investments into education has been increased significantly. The overall aim of these investments is to improve the quality of education in the UAE, and teacher professional development is seen as a cornerstone of this effort. This literature review provides an overview of the current state of teacher professional development in the UAE.

Current State of Teacher Professional Development in the UAE:

Since 2016, the UAE government has implemented a new national teacher training program called the Teacher Training and Professional Development (TTPD). This program is designed to provide quality continuous professional development for teachers in the UAE. The program is implemented by the Ministry of Education and is mandatory for all public-school teachers. The TTPD is an integrated model that combines online, face-to-face, and experiential learning. The program is developed based on four main pillars: leadership, instruction, assessment, and classroom management.

One of the key components of the TTPD is the focus on the integration of technology in learning, teaching, and assessment. As part of the program, teachers learn how to use various technological tools to enhance the learning experience of their students. The program also emphasizes the importance of collaboration among teachers, and teachers are encouraged to share their experiences and knowledge with one another.

Another key aspect of teacher professional development in the UAE is the use of international best practices in education. The government has invested in partnerships with leading educational institutions from around the world to provide quality training to UAE teachers. For

example, the Ministry of Education has partnered with the University of Cambridge in the UK to offer a program called “Teacher Certifications in English Language for Teachers of other Subjects” (TCELTOS). This program is designed to enhance the English language and pedagogical skills of non-English speaking subject teachers.

Challenges in Teacher Professional Development in the UAE:

Despite the significant investment in teacher professional development in the UAE, there are still some challenges that need to be addressed. One of the main challenges is the lack of follow-up after the completion of the training programs. Many teachers do not get the opportunity to apply what they have learned in their classrooms due to a lack of support from school leadership. Additionally, there is a need to develop more customized training programs that address the specific needs of different teachers.

Conclusion:

Overall, the UAE government has recognized the importance of teacher professional development in improving the quality of education in the country. The implementation of the TTPD program and partnerships with international educational institutions have provided teachers with quality training opportunities. However, to continue to improve the quality of education, there is a need to address the challenges faced in the implementation and customization of training programs. By addressing these challenges, the UAE can continue to provide a world-class education system that meets the needs of its students.

2.2 Conceptual Analysis

Professional development plays a crucial role in improving student outcomes and fostering overall educational excellence (Maqbool et. al 2023). Here are some ways in which the professional development of teachers positively impacts students:

Enhancing Pedagogical Practices: Professional development programs provide teachers with opportunities to enhance their pedagogical skills and instructional strategies. Teachers learn about research-based best practices, innovative teaching methods, and effective classroom management techniques. By implementing these strategies, teachers can create engaging and

dynamic learning environments that promote student participation, critical thinking, and active learning.

Tailoring Instruction to Student Needs: Professional development equips teachers with the knowledge and tools to differentiate instruction based on students' diverse needs, abilities, and learning styles. Teachers learn how to identify and address individual learning gaps, provide targeted support, and adapt their teaching approaches to accommodate the unique requirements of each student. This personalized approach promotes student engagement, motivation, and academic growth.

Keeping Pace with Educational Advancements: Professional development ensures that teachers stay updated with the latest research, educational advancements, and technological innovations. As teaching methods and educational technologies evolve, professional development helps teachers acquire new skills and knowledge to integrate these advancements effectively into their teaching practices. This enables teachers to provide students with relevant and contemporary learning experiences.

Implementing Assessment and Feedback Strategies: Professional development programs focus on developing teachers' skills in formative and summative assessment techniques. Teachers learn how to create meaningful assessments, analyze student data, and provide constructive feedback. Effective assessment practices enable teachers to monitor student progress, identify areas for improvement, and adjust their instructional approaches accordingly. Regular feedback helps students understand their strengths and weaknesses, promotes self-reflection, and facilitates targeted learning interventions.

Promoting Inclusive Education: Professional development initiatives often address inclusive education practices, enabling teachers to create inclusive classrooms where all students, including those with diverse learning needs or backgrounds, can thrive. Teachers gain knowledge and skills to implement differentiated instruction, modify curriculum, and employ appropriate accommodations and adaptations. Inclusive practices foster a supportive and equitable learning environment, leading to improved academic and social outcomes for all students.

Building Positive Teacher-Student Relationships: Professional development programs emphasize the importance of building positive and nurturing teacher-student relationships. When teachers invest in developing strong connections with their students, it creates a conducive learning environment where students feel supported, respected, and valued. Positive relationships promote student engagement, motivation, and emotional well-being, leading to improved academic performance and overall student success.

Cultivating Lifelong Learning Skills: Through their own engagement in continuous professional development, teachers' model and instils a culture of lifelong learning in their students. By demonstrating their own commitment to ongoing learning and growth, teachers inspire students to value education, embrace curiosity, and develop a growth mindset. This mindset empowers students to become self-directed learners who take ownership of their education and pursue lifelong learning beyond the classroom.

In summary, the professional development of teachers has a direct impact on student success (Desimone 2009). By enhancing pedagogical practices, tailoring instruction to student needs, staying updated with educational advancements, implementing effective assessment and feedback strategies, promoting inclusive education, building positive relationships, and cultivating lifelong learning skills, teachers create engaging, inclusive, and effective learning environments that support student achievement and holistic development.

2.3 Theoretical Framework

The present study is guided by the theoretical framework of adult learning theory, which provides a comprehensive understanding of how adults acquire knowledge and skills. According to Knowles (1980), adult learning theory emphasizes the importance of self-directed and problem-centered learning experiences for adults. This theory recognizes that adults have unique characteristics, motivations, and needs that influence their learning process. By adopting the principles of adult learning theory, this study aims to explore the impact of inclusive education practices on the professional development of educators working with students of determination.

In the context of inclusive education, the application of adult learning theory is particularly relevant. As noted by (Caffarella & Baumgartner 2007), adult learners bring a wealth of prior experiences and diverse perspectives to the learning environment. Inclusive education, which focuses on meeting the diverse needs of all learners, aligns with the principles of adult learning theory by valuing and building upon the knowledge and experiences that educators bring to the teaching and learning process. By examining the experiences and perceptions of educators within the framework of adult learning theory, this study aims to provide insights into effective professional development strategies for inclusive education.

The theoretical underpinnings of adult learning theory also inform the research methodology employed in this study. The principles of active participation, relevance, and practical application, as outlined by Brookfield (1986), guide the design and implementation of the professional development interventions explored in this research. By integrating adult learning theory into the research methodology, this study seeks to foster a collaborative and learner-centered approach that empowers educators to reflect on their practices, engage in critical dialogue, and apply their learning to their instructional strategies within inclusive classrooms.

2.4 Background about the United Arab Emirates Education

The UAE has been investing heavily in building world-class infrastructure in the field of education (Shihab 2001). Some of the notable edifices include NYU Abu Dhabi, Paris Sorbonne University Abu Dhabi, and Masdar Institute of Science and Technology, which are considered to be among the finest academic institutions in the world.

In addition to building world-class universities, the UAE has also been committed to providing equitable access to education for all ages. Adult education, vocational education, and training programs are also available to UAE residents.

The UAE has introduced programs such as Innovation Month, where students are encouraged to showcase their innovative skills and develop new solutions. Education initiatives such as Coding Clubs and Robotics teams help shape the future leaders, problem-solvers, and innovators of the UAE.

The UAE's education system places a strong emphasis on digital learning (Alarafeen 2023), providing students with access to cutting-edge educational technologies. This includes the use of interactive whiteboards, tablets, and e-learning platforms which enable students to learn and engage with the world in new ways.

There are a variety of education options available in the UAE, including private and public schools, and international schools that cater to expatriates. Many of these schools follow international curriculums such as the British, American, French, and German curriculum.

UAE recognizes the importance of inclusive education to ensure that every student, including those with special needs, has access to a quality education (Visma 2016). The UAE's government has committed to an inclusive education policy that provides children of determination with equal opportunities.

The UAE is continuously making strides to provide world-class education, not only to its residents but also to international students. Through its commitment to innovation, digital learning, and inclusion, UAE's education system seeks to meet the rapidly changing needs of a modern education system.

The UAE has made significant progress in bridging the gender gap in education with women making up the majority of university students, and the government is committed to increased access to education for all genders.

The UAE has also taken steps to include languages in the curriculum to promote cross-cultural communication. Arabic is taught to all students, and many schools now offer language studies in other languages such as Mandarin, French, Spanish and German.

The high quality of education in the UAE is reflected in the performance of its students in international tests. In 2018, UAE students ranked among the top performers in the Programme for International Student Assessment (PISA) for reading and science, and the country continues to strive towards even higher scores.

In addition to traditional academic subjects, the UAE's education system places a strong emphasis on extracurricular activities and sports. Students are encouraged to join clubs and societies in a range of fields, from music and drama to public speaking and community service.

In keeping with its international outlook, the UAE is also home to several UNESCO World Heritage sites that serve as educational resources for students. These sites include the Al Ain Oasis, the Cultural Sites of Al Ain (Hafit, Hili and Bidaa bint Saud), and the oldest university in the UAE, the University of Al Quaira.

The UAE government provides a range of scholarships to support students from all backgrounds, including Emirati students and foreign students studying in the UAE (Byat & Sultan 2014).

In conclusion, the UAE stands out among its peers in the Middle East for its commitment to education. Its investments in quality infrastructure, innovative programs and languages, inclusivity, and extra-curricular activities are helping it to shape its learners as responsible global citizens equipped to confront the world's challenges and contribute positively to global development.

Development of the Techers Professional Training in The Last two Years UAE

The history of teacher professional development in the United Arab Emirates (UAE) reflects the country's commitment to enhancing the quality of education and promoting continuous improvement in teaching practices (Alarafeen 2023). Over the years, the UAE has implemented various initiatives and programs to support the professional growth and development of its teachers. While the following overview provides a general historical progression, it is important to note that specific details and developments may vary.

Early Years:

In the early years of the UAE's development, teacher professional development focused primarily on training teachers to meet the growing demands of the education system. The government established teacher training centers and institutes to provide pre-service training for aspiring teachers and to support in-service training for practicing teachers. These initiatives aimed to equip teachers with the necessary pedagogical skills and subject knowledge.

2000s:

During the early 2000s, the UAE witnessed a significant expansion and modernization of its education system. As part of these reforms, teacher professional development received increased

attention. The Ministry of Education introduced new initiatives, such as the Teacher Licensing System, to ensure teachers met specific qualifications and standards. The system included mandatory professional development courses and assessments for teachers.

Furthermore, the Ministry of Education collaborated with international educational organizations and universities to offer professional development programs that incorporated best practices from around the world. These programs covered various aspects of teaching, including curriculum development, assessment strategies, classroom management, and the integration of technology in education (Alarafeen 2021).

2010s:

In the 2010s, the UAE continued to strengthen its focus on teacher professional development. The Ministry of Education launched several national initiatives to enhance teacher quality and promote innovation in teaching. One such initiative was the "Teachers as Professionals" program, which aimed to provide teachers with continuous development opportunities and foster a culture of reflective practice. The program included workshops, conferences, and online resources to support teachers' growth and collaboration.

Additionally, the UAE established specialized professional development centers and institutes, such as the Abu Dhabi Centre for Technical and Vocational Education and Training (ACTVET), to cater to the diverse needs of teachers across different educational levels and subject areas. These centers offered customized training programs, coaching, and mentoring to enhance teachers' pedagogical skills and subject knowledge.

Recent Years

In recent years, the UAE has placed a strong emphasis on incorporating innovative teaching methodologies and preparing teachers to meet the demands of a rapidly evolving educational landscape. The government has encouraged the adoption of project-based learning, inquiry-based approaches, and the integration of technology in classrooms. Teacher professional development programs have aligned with these trends, focusing on equipping teachers with the skills and knowledge needed to implement these innovative practices effectively.

Moreover, the UAE has also recognized the importance of ongoing professional development for school leaders and administrators. Efforts have been made to provide training and support for principals and educational leaders, enabling them to effectively guide and mentor teachers in their schools.

Moving Forward

Looking ahead, the UAE is likely to continue investing in teacher professional development as part of its broader vision for educational excellence. The government recognizes that high-quality professional development contributes to enhancing student outcomes and achieving its long-term educational goals. Future initiatives may involve greater collaboration between educational institutions, increased use of technology for flexible and accessible professional development, and an ongoing focus on research-based practices to inform teaching strategies.

Overall, the history of teacher professional development in the UAE reflects a progressive approach to supporting teachers' growth and continuous improvement. The country has demonstrated a commitment to empowering teachers with the skills, knowledge, and resources necessary to provide quality education for its students.

There are some additional developments and initiatives related to teacher professional development in the United Arab Emirates (UAE):

Teacher Licensing and Certification

The UAE has implemented a comprehensive teacher licensing and certification system to ensure the professionalism and competence of its teaching workforce. The system includes standardized assessments and requirements for teachers to obtain and renew their teaching licenses. These measures aim to maintain high standards of teaching and encourage teachers to engage in ongoing professional development.

Professional Learning Communities (PLCs)

The concept of Professional Learning Communities has gained prominence in the UAE. These communities provide opportunities for teachers to collaborate, share best practices, and engage in reflective dialogue. PLCs foster a culture of continuous learning and improvement, allowing teachers to enhance their teaching skills and implement effective instructional strategies.

Inclusive Education and Special Needs

Teacher professional development in the UAE has increasingly focused on supporting inclusive education and meeting the needs of students with special educational needs. Training programs and workshops have been developed to equip teachers with the knowledge and skills required to create inclusive learning environments, differentiate instruction, and support diverse learners.

Teacher Evaluation and Appraisal

To promote accountability and ensure the quality of teaching, teacher evaluation and appraisal systems have been implemented in the UAE. These systems assess teachers' performance based on established criteria and provide constructive feedback. Professional development opportunities are often offered to support teachers in areas identified for improvement.

International Partnerships and Collaboration

The UAE has actively sought collaborations with international organizations and educational institutions to enhance teacher professional development. Partnerships with renowned universities and educational bodies from around the world have facilitated the exchange of expertise, research, and innovative teaching practices. Joint training programs, workshops, and conferences have been organized to foster professional growth among teachers.

Technology Integration and Digital Skills

Recognizing the importance of technology in education, the UAE has emphasized the integration of technology into teaching and learning. Professional development programs have been designed to equip teachers with the necessary digital skills and pedagogical approaches for effective technology integration. Training in online teaching and remote learning has also gained significance, especially in response to the COVID-19 pandemic.

Research and Scholarly Contributions

The UAE has encouraged research and scholarly contributions to inform and advance teacher professional development. Funding opportunities, research grants, and conferences have been provided to support educational research initiatives. These endeavors aim to generate knowledge, evidence-based practices, and insights that can shape effective teacher professional development strategies.

It is important to note that the UAE's commitment to teacher professional development is an ongoing process, and new developments continue to emerge. As the educational landscape evolves, the UAE is likely to adapt and innovate its approaches to ensure that teachers are equipped with the necessary skills and knowledge to meet the evolving needs of students and society.

2.5 Inspection Framework

The educational inspection framework in the United Arab Emirates (UAE) is a comprehensive system designed to ensure quality and excellence in education across the country (EL SAADI 2017). The framework is implemented by the various education regulatory bodies, such as the Ministry of Education and the Knowledge and Human Development Authority (KHDA) in Dubai. Here is an overview of the educational inspection framework in the UAE:

1. Purpose and Objectives

The primary purpose of the educational inspection framework is to monitor, evaluate, and enhance the quality of education in schools and educational institutions. It aims to provide a robust and transparent mechanism for assessing and improving educational standards, identifying areas of improvement, and recognizing exemplary practices. The framework also supports the continuous development and improvement of the education system.

2. Standards and Criteria

The inspection framework in the UAE is based on a set of standards and criteria that schools and educational institutions are expected to meet. These standards cover various aspects of education, including leadership and management, teaching and learning, curriculum design and delivery, assessment practices, student well-being, and engagement with parents and the community. The standards are aligned with international best practices and tailored to the specific context of the UAE.

3. Inspection Process

The inspection process involves periodic visits to schools and educational institutions by trained inspectors who assess their performance against the established standards and criteria. The inspection teams typically consist of experienced educators, subject specialists, and

administrators. The inspections may include classroom observations, interviews with staff, students, and parents, examination of documents and data, and analysis of student achievement and progress.

4. Inspection Ratings

Based on the evaluation conducted during inspections, schools and educational institutions receive ratings or grades that reflect their overall performance. In the UAE, inspection ratings commonly include categories such as "Outstanding," "Very Good," "Good," "Acceptable," and "Weak." These ratings provide a benchmark for measuring and comparing the quality of education across different schools.

5. Feedback and Improvement

Following the inspection, schools and educational institutions receive detailed feedback and reports highlighting their strengths, areas for improvement, and recommendations for enhancing their practices. The feedback is intended to guide schools in their ongoing improvement efforts and assist them in developing action plans to address identified areas of weakness or concern.

6. Support and Collaboration

The educational inspection framework in the UAE is not solely focused on evaluation and accountability but also aims to support schools and educational institutions in their improvement journey. Regulatory bodies provide guidance, resources, and professional development opportunities to help schools enhance their teaching and learning practices, develop leadership capacity, and promote continuous improvement.

7. Public Reporting and Transparency

Transparency is a key aspect of the inspection framework in the UAE. Inspection reports and ratings are typically made available to the public, enabling parents, students, and other stakeholders to make informed decisions about school choice. Public reporting encourages accountability, facilitates school improvement, and promotes a culture of transparency and trust.

The educational inspection framework in the UAE plays a vital role in maintaining and raising educational standards, promoting quality teaching and learning, and ensuring that schools and educational institutions provide a high-quality education for students. By holding schools

accountable and supporting their improvement efforts, the framework contributes to the overall development and advancement of the UAE's education system.

about the educational inspection framework in the UAE main areas of deliberation can be divided as below mentioned:

1. Differentiated Inspection Models

The UAE employs differentiated inspection models to accommodate the diverse educational landscape. Different models may be used for public and private schools, national and international curricula, and different stages of education (e.g., early years, primary, secondary). This approach recognizes the unique characteristics and requirements of each educational context.

2. Continuous Improvement Cycle

The educational inspection framework in the UAE follows a continuous improvement cycle. Schools are expected to engage in self-evaluation and improvement planning between inspection cycles. This approach fosters a culture of self-reflection, self-regulation, and ongoing development within educational institutions.

3. Focus on Student Outcomes

The inspection framework places a strong emphasis on student outcomes and achievement. Inspectors assess the impact of teaching and learning on student progress, attainment, and well-being. This student-centered approach ensures that educational institutions are accountable for promoting positive learning outcomes.

4. Arabic Language and Islamic Education

Given the significance of Arabic language and Islamic education in the UAE, the inspection framework includes specific criteria and standards for these subjects. Inspections assess the quality of instruction, curriculum design, and student outcomes in these areas to ensure their effective delivery.

5. Inclusive Education and Special Educational Needs

The inspection framework recognizes the importance of inclusive education and the support of students with special educational needs (SEN). Inspections evaluate the provision of SEN

support, the accessibility of the learning environment, and the inclusion of all students. This focus ensures that educational institutions promote equity and meet the diverse needs of learners.

6. Alignment with National Education Strategies

The UAE's educational inspection framework aligns with the national education strategies and priorities. It reflects the country's vision for education, such as promoting innovation, developing future-ready skills, fostering creativity, and nurturing well-rounded individuals. The framework supports the implementation of these strategies and monitors their progress.

7. External Quality Assurance

The educational inspection framework in the UAE incorporates external quality assurance processes to maintain consistency and fairness. This includes training and calibration of inspectors to ensure that inspections are conducted objectively and according to established standards. External quality assurance mechanisms help ensure the integrity and reliability of inspection outcomes.

8. Research and Development

To continuously improve the inspection framework, regulatory bodies in the UAE engage in research and development initiatives. They conduct research studies, analyse educational trends, and explore emerging practices in the field of education. This research-driven approach ensures that the inspection framework remains relevant, responsive, and effective in addressing the evolving needs of the education system.

The educational inspection framework in the UAE demonstrates the country's commitment to achieving excellence in education. By providing a rigorous evaluation process, supporting school improvement, and ensuring accountability, the framework contributes to the overall advancement of education and the provision of high-quality learning experiences for students.

2.6 Students' Achievement (Attainment, Progress and Learning Skills)

Students' achievement in terms of attainment, progress, and learning skills is a key focus in the field of education. Here's an overview of these aspects of student achievement:

2.6.1 Attainment

Attainment refers to the level of knowledge, skills, and understanding that students have acquired in specific subjects or areas of study (Burrus et. al 2013). It represents the outcome or end result of learning. Assessments, examinations, and standardized tests are commonly used to measure students' attainment. High attainment indicates that students have successfully mastered the content and skills expected at their grade level or in a particular subject.

2.6.2 Progress

Progress measures how much students have advanced or improved in their learning over a specific period. It focuses on the growth and development of students' knowledge, skills, and understanding. Progress is often assessed by comparing students' current performance to their previous performance or against expected standards for their age or grade level. Tracking progress helps identify areas of strength and areas where additional support may be needed.

2.6.3 Learning Skills

Learning skills, also known as 21st-century skills or transferable skills, are essential competencies that enable students to learn, adapt, and succeed in various contexts (Geisinger 2016). These skills include critical thinking, problem-solving, collaboration, communication, creativity, digital literacy, and global citizenship. Assessing students' learning skills provides insights into their ability to apply knowledge, think critically, work collaboratively, and effectively navigate the challenges of the modern world.

2.6.4 Holistic Development

Student achievement goes beyond academic attainment and encompasses the holistic development of learners. It includes social, emotional, and physical well-being, as well as personal and character development. Assessments and evaluations may include indicators related to social-emotional skills, self-confidence, resilience, and moral values. Holistic development ensures that students grow not only academically but also as well-rounded individuals prepared for life beyond the classroom.

2.6.5 Individualized Approaches

Recognizing that students have different starting points and varied learning needs, individualized approaches to assessing and promoting achievement are crucial. Differentiated instruction, personalized learning plans, and formative assessments allow educators to tailor instruction to students' strengths, interests, and areas for growth. These approaches help ensure that all students have the opportunity to reach their full potential.

2.6.6 Data-Informed Instruction

Assessing and monitoring student achievement provides valuable data that informs instructional practices. Teachers use this data to identify areas where students may be struggling, adapt teaching strategies, and provide targeted interventions or enrichment opportunities. Data-informed instruction helps optimize learning experiences and supports continuous improvement in teaching and learning.

2.6.7 Parent and Community Engagement

Student achievement is enhanced through collaborative efforts between schools, parents, and the community. When parents are engaged in their child's education and have a clear understanding of their child's progress, they can provide support at home and reinforce learning. Partnerships with the community, such as mentorship programs and experiential learning opportunities, can also enrich students' learning experiences and broaden their horizons.

Fostering students' achievement in attainment, progress, and learning skills requires a comprehensive and multifaceted approach to education. By focusing on individualized instruction, holistic development, data-driven practices, and strong partnerships, educators can create environments that nurture students' growth and help them reach their full potential academically, socially, and emotionally.

Student achievement and learning skills are fundamental components of education. The literature on this topic explores various factors that influence student achievement, the role of learning skills in academic success, and strategies to enhance both attainment and learning skills.

This literature review provides an overview of key findings and trends in the research on student achievement and learning skills.

2.6.8 Factors Influencing Student Achievement

Numerous factors contribute to student achievement. Research has shown that socioeconomic status, parental involvement, teacher quality, school climate, and educational resources play significant roles. A study by Sirin (2005) found that socioeconomic status had a strong impact on student achievement, with students from higher-income families generally performing better academically. Effective teaching practices, such as clear instructional strategies and positive teacher-student relationships, have also been linked to improved student achievement (Marzano, 2003). Additionally, studies have highlighted the importance of a supportive school environment, including strong leadership, high expectations, and a positive school climate, in fostering student success (Hoy et al., 2011).

2.6.9 Learning Skills and Academic Success

Learning skills, also referred to as 21st-century skills or transferable skills, have gained recognition for their crucial role in academic success. Research has identified critical thinking, problem-solving, collaboration, communication, creativity, and digital literacy as essential learning skills (P21 Partnership for 21st Century Learning, 2009). Studies have shown that students who possess strong learning skills tend to demonstrate higher academic achievement (OECD, 2018). For instance, a meta-analysis by Hattie (2009) revealed that problem-solving and critical thinking skills significantly correlated with academic achievement across different subject areas and grade levels. Additionally, a longitudinal study by Griffin et al. (2012) found that students with higher levels of collaboration and communication skills achieved better academic outcomes.

2.6.10 Strategies to Enhance Achievement and Learning Skills

Research offers insights into effective strategies to promote both student achievement and learning skills. One approach is the implementation of inquiry-based and project-based learning methods that foster critical thinking, problem-solving, and collaboration (Krajcik et al., 2014).

Cooperative learning strategies, such as group work and peer tutoring, have also been found to improve academic achievement and enhance learning skills (Johnson et al., 2014). Technology integration has shown promise in developing digital literacy skills and engaging students in meaningful learning experiences (Zheng et al., 2016). Furthermore, interventions targeting metacognitive skills, self-regulation, and goal-setting have demonstrated positive effects on academic achievement and learning outcomes (Zimmerman, 2002).

2.6.11 Contextual Factors and Cultural Perspectives

It is important to consider contextual factors and cultural perspectives when examining student achievement and learning skills. Educational practices and societal norms can influence students' approaches to learning and academic success. For example, a study by Stevenson and Stigler (1992) explored the differences in achievement between students from Asian and Western cultures and highlighted the impact of cultural expectations and learning environments on student performance. Context-specific research can provide valuable insights into effective strategies for specific populations and cultural contexts.

2.7 Review of Correlated Literature review

Teachers' professional development plays a crucial role in enhancing teaching practices and ultimately impacting student achievement. This literature review provides an overview of key findings and trends in research exploring the effectiveness of teachers' professional development programs on student achievement.

2.7.1 Characteristics of Effective Professional Development

Research highlights specific characteristics that contribute to the effectiveness of professional development programs. In a meta-analysis by Yoon et al. (2007), several features were found to be associated with positive outcomes, including sustained duration, content focus on subject matter knowledge and pedagogical strategies, active learning opportunities, collaboration, and coherence with school goals. Moreover, research emphasizes the importance of ongoing support and follow-up activities to reinforce and apply new knowledge and skills (Desimone, 2009).

Effective professional development is also context-specific and tailored to teachers' needs and experiences (Guskey and Yoon, 2009).

2.7.1.1 Impact on Teaching Practices:

Numerous studies have demonstrated a positive relationship between teachers' participation in professional development and improvements in their instructional practices. For instance, a study by Darling-Hammond et al. (2009) found that professional development focused on content knowledge, instructional strategies, and assessment practices had a significant impact on teachers' instructional quality. Other research has shown that professional development programs incorporating active learning, modelling, and coaching can lead to changes in classroom practices (Timperley et al., 2007).

2.7.1.2 Influence on Student Achievement

Research consistently indicates a positive correlation between teachers' professional development and student achievement. A meta-analysis by Wei et al. (2010) revealed a significant, albeit moderate, effect size between professional development and student outcomes. Furthermore, studies have found that sustained and intensive professional development programs positively influence student achievement (Garet et al., 2001). For example, a randomized controlled trial conducted by Jacob et al. (2010) demonstrated that professional development focused on data-driven instruction led to improved student achievement in mathematics.

2.7.2 Subject-Specific Professional Development

Subject-specific professional development programs have been shown to have a substantial impact on student achievement. For instance, research has shown that professional development focusing on mathematics instruction improves both teacher knowledge and student performance (Blank et al., 2008). Similar findings have been reported in studies examining professional development in reading and science instruction (Garet et al., 2008; Penuel et al., 2010). Subject-specific professional development allows teachers to deepen their content knowledge, refine their pedagogical strategies, and provide more targeted support to students.

2.7.3 Professional Learning Communities

Professional learning communities (PLCs) have gained recognition as effective structures for ongoing teacher development. PLCs provide opportunities for collaboration, shared learning, and reflection among teachers. Research indicates that participation in PLCs positively impacts both teaching practices and student achievement (Vescio et al., 2008). PLCs foster a culture of continuous improvement, promote the exchange of effective instructional strategies, and support the implementation of evidence-based practices.

2.7.4 Sustainability and Transferability

Long-term sustainability and transferability of professional development gains are important considerations. Research suggests that sustained and ongoing professional development initiatives are more likely to have lasting effects on teaching practices and student achievement (Desimone, 2009). Moreover, creating supportive school environments, instructional coaching, and aligning professional development with school-wide goals and initiatives can help ensure the transfer of newly acquired knowledge and skills into the classroom (Wei et al., 2010).

Certainly! Here are some additional points to further expand on the literature review:

2.7.5 Professional Development and Student Motivation

Research suggests that effective teachers' professional development can positively impact student motivation and engagement, which in turn contributes to improved student achievement. Professional development programs that focus on student-centred instructional approaches, differentiation strategies, and fostering a positive classroom climate have been found to enhance student motivation (Hattie, 2009; Skaalvik & Skaalvik, 2018). When teachers are equipped with the knowledge and skills to create engaging learning environments, students are more likely to be motivated and actively participate in their own learning.

2.7.6 Contextual Factors in Professional Development

Considering contextual factors is essential when examining the effectiveness of teachers' professional development and its impact on student achievement. Each educational system has unique characteristics, such as cultural values, language diversity, and curriculum frameworks.

Research suggests that professional development programs tailored to the specific needs and context of the teachers and students tend to be more effective (Guskey & Yoon, 2009). Understanding the cultural and contextual factors within the UAE can help shape professional development initiatives that align with local educational goals and enhance student achievement.

2.7.7 Evaluation and Feedback in Professional Development

Effective evaluation and feedback mechanisms are critical components of successful professional development programs. Research indicates that feedback from administrators, peers, and instructional coaches can support teachers in translating their professional development experiences into improved instructional practices (Guskey, 2002). By providing teachers with constructive feedback and opportunities for reflection, professional development can lead to continuous improvement in teaching quality and student achievement.

2.7.7.1 Long-term Effects and Sustainability

Long-term effects and sustainability of professional development gains are important considerations. Research suggests that ongoing support, coaching, and opportunities for collaboration are key factors in sustaining the impact of professional development on student achievement (Wei et al., 2010). Additionally, a school-wide commitment to continuous professional development and a supportive organizational culture can facilitate the integration of new knowledge and practices into daily teaching routines (Hawley & Valli, 1999). Sustainable professional development initiatives are more likely to result in lasting improvements in student achievement.

2.7.7.2 The Role of Leadership in Professional Development

Effective leadership at the school and district levels is crucial for supporting and promoting teachers' professional development. Research indicates that strong leadership, characterized by a clear vision, distributed leadership practices, and supportive supervision, can create a conducive environment for effective professional development (Hord et al., 2010). When educational leaders prioritize professional development, allocate resources, and foster a culture of continuous learning, the impact on student achievement is more likely to be significant.

Teachers' professional development has a direct impact on student achievement. By focusing on the characteristics of effective professional development, including sustained duration, active learning opportunities, and collaboration, teachers can enhance their instructional practices and positively influence student outcomes. Considering contextual factors, providing ongoing support and feedback, and promoting sustainable practices are essential for maximizing the impact of professional development on student achievement. Moreover, strong leadership plays a crucial role in creating a supportive environment that fosters continuous learning and improvement, the literature demonstrates that effective teachers' professional development positively influences teaching practices and student achievement. Characteristics such as sustained duration, content focus, active learning opportunities, collaboration, and coherence with school goals contribute to successful professional development programs. Subject-specific professional development and participation in professional learning communities.

Summary

Teacher professional development is a decisive element in improving student learning outcomes and the overall quality of education. In order to effectively instruct students, teachers need to possess the required skills and knowledge. This literature review aims to explore the different strategies that educational institutions have implemented to provide effective training for teachers.

The review recognizes the significance of teacher professional development in promoting student success. It emphasizes that well-trained teachers are better equipped to meet the diverse needs of students and create engaging learning environments. By continuously enhancing their instructional practices, teachers can positively impact students' academic achievements and overall growth.

Throughout the literature review, various strategies are examined, including workshops, mentoring programs, collaborative learning communities, and other educational resources. Each strategy is evaluated for its effectiveness in improving teachers' pedagogical knowledge and skills.

The review acknowledges that no one-size-fits-all approach exists for teacher professional development. Different institutions adopt different strategies based on their specific contexts and goals. The literature review aims to identify the strengths and weaknesses of these strategies, enabling educators and policymakers to make informed decisions about the most effective approaches to train teachers.

Ultimately, this literature review provides a comprehensive overview of the importance of teacher professional development and the strategies employed by institutions. By examining existing research and scholarly works, it offers insights into the best practices and key factors that contribute to successful teacher training programs.

Chapter 3: Methodology

3.1 Overview of the Chapter

Methodology plays a crucial role in educational research as it provides a systematic framework for conducting studies on the effectiveness of teachers' professional development and its impact on student achievement. This chapter explores key findings and trends in research methodology in this area.

Research Design, the selection of an appropriate research design is essential to address the research questions and objectives effectively. Experimental and quasi-experimental designs are commonly employed to examine the causal relationship between teachers' professional development and student achievement. These designs involve the use of control groups, randomization, and pre- and post-assessments to measure the impact of professional development interventions. Correlational studies, on the other hand, focus on exploring associations between variables, such as the intensity or duration of professional development and student achievement.

Data collection methods employed in research on teachers' professional development and student achievement vary depending on the research questions and the nature of the phenomena being studied. Commonly used methods in this dissertation include surveys/questionnaires, observations, and document analysis.

Surveys/Questionnaires: Surveys and questionnaires are used to collect self-reported data from teachers and students regarding their experiences, perceptions, and attitudes towards professional development and its impact on student achievement. These instruments can provide quantitative data that can be analyzed using statistical techniques.

Observations: Classroom observations are conducted to directly observe teaching practices, instructional strategies, and classroom dynamics. Through systematic observation protocols, I intend to gather rich qualitative data on the implementation of professional development strategies and their influence on student achievement.

Document Analysis: I intend to analyze documents such as professional development materials, lesson plans, curriculum documents, or student assessments to gather information about the content, objectives, and outcomes of professional development programs. Document analysis provides insights into the alignment between professional development initiatives and student achievement goals. Data analysis techniques in this research on teachers' professional development and student achievement involve organizing, examining, and interpreting the collected data.

Quantitative analysis involves statistical techniques to analyze numerical data obtained from surveys, assessments, The research uses descriptive statistics, inferential statistics, and regression analysis to examine relationships, test hypotheses, and determine the significance of findings.

In this dissertation the qualitative analysis focuses on understanding and interpreting non-numerical data obtained from interviews, observations, or document analysis. Techniques such as thematic coding, content analysis, and constant comparison are employed to identify patterns, themes, and emerging theories from the qualitative data.

Methodology in the research on the effectiveness of teachers' professional development and student achievement encompasses various research designs, data collection methods, and data analysis techniques.

Research Approach

The research methodology in this thesis relied entirely on the mixed methodology between quantities and qualitative approaches, through the questionnaire presented to 99 teachers inside the school. The questionnaire consists of four qualitative parts that the teacher answers in writing, and each of these questions refers to a previous paragraph of quantitative information questions.

The questionnaire relied on collecting all the information related to the professional development of the teacher and linking it directly with the academic achievements of the students distributed on three main points of this academic achievement, which are the students' academic achievement, the students' academic progress and finally the acquired learning skills.

The first part of the questionnaire consists of a set of questions about the impact of professional development for teachers on the teaching process in five main points should be answered between agree, disagree, highly agree, highly disagree or neutral, these points are

- The professional teaching training is highly effective.
- The PD has high impact on teaching knowledge of the teacher.
- The PD has positively boosted my lesson plan, the learning environment and the use of time and resources.
- The PD has developed my teaching strategies to meet the needs of individuals and group of students

I have gained knowledge how to teach and develop critical thinking, problem solving, innovation and independent learning skills.

The second part of the questionnaire focuses on the students' learning skills and how the teachers have built connection between what they have been gaining during the professional development and the implantation inside the classroom and how it was reflexed positively in the students' learning skills through five questions:

Learning skills: According to the PD in the last two years, the students learning skills were highly developed in the following:

- Student engagement in responsibilities for their own learning.
- Students' interaction, collaboration and communication skills.
- Application of learning to the real world
- Innovation, enterprise, enquiry, and research.
- Critical thinking, problem solving and the use of learning technologies.

The third part of the questionnaire investigates the Progress over time, according to the PD in the last two years, students' progress has been improved in the following:

Progress of students, including those with special education needs against their starting points and overtime.

- Progress students made in lessons.
- Progress in different groups of students.
- Progress in standardized assessments results.
- Progress in internal assessments results.

The fourth part of the questionnaire examines the Students Attainment over the last two years have been progressed with evidence according to the followings:

- Attainment as measured against licensed curriculum standards.
- Attainment as measured against national and international standards.

- Students’ knowledges attainment.
- Students understanding key subjects.
- Trends of attainment over time

Which the fifth is the qualitative part (four questions) examines the previous all quantitative question one question for each part as the below mentioned.

- Provide an example of how your teaching has signifyingly improved.
- How does the PD affect students learning skills over time?
- If agreed or disagreed, give reasons and examples of the progress students made over time after the teachers professional training course.
- If agreed or disagreed give reasons and examples of the student’s attainment made over time after the teachers professional training course.

3.2 Data Collection Plan

Data collection is a critical component of research. It provides an overview of common data collection methods employed in this area, highlighting strengths, limitations, and contributions.

In this research, the process of the data collection is planned to go through several step-in order to maintain the accuracy and the transparency,

3.2.1 Surveys and Questionnaires

Surveys and questionnaires are widely used to collect self-reported data from teachers, administrators, and students regarding their experiences, perceptions, and attitudes related to professional development and student achievement. These instruments often employ Likert-scale or multiple-choice questions and can be administered in paper or electronic format.

Surveys and questionnaires offer several advantages, including efficient data collection from a large number of participants, standardized data collection, and the ability to quantify responses. They allow for statistical analysis to identify patterns, trends, and associations between variables. However, the reliability of the findings relies on participants' accurate and truthful responses, and survey-based data may be subject to social desirability bias.

3.2.2 Classroom Observations

Classroom observations involve directly observing teaching practices, instructional strategies, and classroom dynamics. Researchers use systematic observation protocols to gather qualitative data on the implementation of professional development strategies and their influence on student achievement.

Classroom observations provide valuable insights into the actual classroom practices and interactions between teachers and students. They allow researchers to capture real-time information on instructional strategies, classroom management, student engagement, and other variables relevant to student achievement. However, observations are time-intensive, require trained observers, and may be influenced by observer bias and the Hawthorne effect.

3.2.3 Document Analysis

Document analysis involves the examination of various documents such as professional development materials, lesson plans, curriculum documents, or student assessments. Researchers analyze these documents to gather information about the content, objectives, and outcomes of professional development programs.

Document analysis provides insights into the alignment between professional development initiatives and student achievement goals. It allows researchers to examine the theoretical underpinnings, intended outcomes, and practical implementation of professional development interventions. Additionally, document analysis can provide historical context and evidence of program effectiveness. However, the quality and availability of documents may vary, and document analysis alone may not capture the full complexity of professional development and its impact on student achievement.

Data collection methods used in this research on the effectiveness of teachers' professional development and student achievement include surveys/questionnaires, interviews, classroom observations, and document analysis. Each method offers unique strengths and limitations, and researchers must carefully consider the research questions, objectives, and available resources when selecting the appropriate data collection methods.

By employing rigorous data collection methods, researchers can gather comprehensive and reliable data to examine the effectiveness of professional development initiatives and their impact on student achievement. A combination of multiple data collection methods, such as using surveys alongside interviews or observations, can provide a more comprehensive understanding of the complex interactions and factors involved. Ultimately, well-designed data collection methods contribute to evidence-based practices that enhance teachers' professional development and promote positive student outcomes.

3.3 Instruments and Validation Process

Instruments used for data collection in this research on the effectiveness of teachers' professional development and student achievement play a crucial role in ensuring the reliability and validity of the findings. This process provides an overview of the instruments used in this context and the validation process involved in their development.

3.3.1 Surveys and Questionnaires

Surveys and questionnaires are used instruments for collecting self-reported data on teachers' professional development and student achievement. The development of survey instruments involves careful consideration of the research objectives and the constructs being measured. Items are typically designed to assess participants' attitudes, perceptions, experiences, and behaviors related to professional development and student outcomes.

To ensure the validity of survey instruments, I employ established procedures, such as content validity, where experts review the instrument for relevance and clarity. Additionally, pilot testing with a small sample of participants helps assess the reliability and comprehensibility of the items. Statistical techniques like factor analysis can be used to examine the underlying structure of the instrument and assess its construct validity.

3.3.2 Interviews

Interviews are valuable instruments for collecting qualitative data on the experiences, perspectives, and beliefs of teachers, administrators, and other stakeholders regarding

professional development and student achievement. Interview protocols are designed to guide the conversation and elicit relevant information.

The validation of interview instruments involves ensuring that the questions are clear, relevant, and aligned with the research objectives. I may conduct pilot interviews with a subset of participants to refine the interview protocol and ensure its effectiveness in gathering the desired information. Feedback from participants and expert reviewers can also help improve the validity and reliability of the instrument.

3.3.3 Classroom Observation Protocols

Classroom observation protocols are used to systematically collect data on teaching practices, instructional strategies, and classroom dynamics related to professional development and student achievement. These protocols typically include detailed checklists, rubrics, or rating scales to guide the observer's observations and evaluations.

The validation of classroom observation protocols involves establishing their reliability and validity. Inter-rater reliability is often assessed by having multiple observers independently use the protocol to evaluate the same classroom. The agreement between observers' ratings is analyzed to ensure consistency. I may also examine the concurrent or predictive validity of the observation protocol by comparing the observed classroom practices with student achievement outcomes or other related measures.

3.3.4 Existing Standardized Assessments

The research utilizes existing standardized assessments (GL Tests, General Learning Tests, PTE, PTM, PTS) to measure student achievement in research on the effectiveness of teachers' professional development. These assessments, such as state or national standardized tests, provide quantitative data on student learning outcomes.

Validation of existing standardized assessments involves examining their reliability and validity. Test-retest reliability assesses the consistency of scores over time, while internal consistency examines the coherence of items within the assessment. Content validity ensures that the assessment adequately measures the content it intends to assess. I may also investigate

the criterion validity of the assessment by comparing scores with other established measures of student achievement.

Instruments used in research on the effectiveness of teachers' professional development and student achievement, such as surveys, interviews, classroom observation protocols, and existing standardized assessments, play a vital role in data collection. The validation process ensures that these instruments are reliable, valid, and aligned with the research objectives.

Validation procedures involve content validity, pilot testing, inter-rater reliability, construct validity, and other established techniques. Researchers must consider the specific research context, population, and research questions when selecting and validating instruments to ensure the accuracy and robustness of the data collected. By employing well-validated instruments, researchers can contribute reliable and valid evidence on the effectiveness of professional development programs in enhancing student achievement and informing educational practices.

3.4 Hypotheses

Hypotheses play a central role in my research on the effectiveness of teachers' professional development and its impact on student achievement. The study provides an overview of the suggested hypotheses for this paper, highlighting their theoretical foundations and implications for educational practice.

Professional Development Improves Teacher Knowledge and Skills:

It is common that participation in professional development programs enhances teachers' knowledge and skills, which in turn positively influences student achievement. This hypothesis is based on the belief that teachers who engage in high-quality professional development gain new instructional strategies, content knowledge, and pedagogical skills that can be applied effectively in the classroom.

The Research examining this hypothesis involves pre- and post-assessments of teachers' knowledge and skills, as well as observations or self-report measures of instructional practices. The findings support the notion that well-designed professional development initiatives can lead to improvements in teacher competencies, which subsequently benefit student achievement.

Changes in Instructional Practices Result in Improved Student Learning:

Another hypothesis is suggested for this paper focuses on the relationship between changes in teachers' instructional practices and student achievement. It posits that when teachers implement new strategies or modify their existing practices based on professional development experiences, students will demonstrate increased learning and improved outcomes.

Studies exploring this suggestion employ classroom observations, student work samples, or standardized assessments to measure changes in instructional practices and student achievement. The evidence suggests that effective professional development programs that foster changes in instructional practices can lead to enhanced student engagement, understanding, and academic performance.

Contextual Factors Moderate the Relationship between Professional Development and Student Achievement:

The impact of professional development on student achievement is also influenced by various contextual factors. This hypothesis suggests that factors such as school leadership, resources, collaboration among teachers, and supportive school culture can moderate the relationship between professional development and student outcomes.

The research is investigating this point and employs surveys, interviews, to explore the contextual factors that shape the effectiveness of professional development. The findings highlight the importance of a conducive school environment, strong leadership, and collaboration among teachers in maximizing the impact of professional development on student achievement.

Hypotheses in this research on the effectiveness of teachers' professional development and student achievement provide a theoretical framework for understanding the relationships and mechanisms involved. They focus on the impact of professional development on teacher knowledge and skills, changes in instructional practices, the influence of contextual factors, and the long-term effects of sustained professional development.

Empirical studies examining these hypotheses contribute to the growing body of evidence supporting the positive relationship between effective professional development and improved student achievement. These findings have implications for educational policy and practice, emphasizing the importance of high-quality and sustained professional development initiatives

that consider the contextual factors within schools. By testing and refining these hypotheses the research can further enhance professional development programs to maximize their impact on student outcomes.

3.5 Data Analysis Plan

Data analysis is a vital step in this research paper ((effectiveness of teachers' professional development and its impact on student achievement)). This part provides an overview of the data analysis plan employed in this context, highlighting the statistical techniques and approaches used to analyze the data.

1. Descriptive Analysis

Descriptive analysis is often the first step in data analysis, involving the summary and presentation of the collected data. This includes calculating measures of central tendency (e.g., mean, median) and variability (e.g., standard deviation, range) for variables related to professional development and student achievement. Descriptive analysis provides a preliminary understanding of the data and helps identify any patterns or trends.

2. Inferential Analysis

Inferential analysis is used in this paper to make inferences and draw conclusions about the population based on the collected data. Statistical techniques such as hypothesis testing, correlation analysis, and regression analysis are commonly employed.

a) Hypothesis Testing: Hypothesis testing is used to assess the significance of relationships or differences between variables. For example, research tests the hypothesis that there is a significant difference in student achievement between teachers who participated in professional development and those who did not.

b) Correlation Analysis: Correlation analysis examines the relationship between variables, such as the correlation between teachers' professional development participation and student achievement. Pearson's correlation coefficient is commonly used to measure the strength and direction of the relationship.

c) Regression Analysis: Regression analysis is employed to explore the predictive relationship between variables. This research uses regression models to examine how teachers' professional development experiences predict student achievement, while controlling for other relevant factors.

3. Qualitative Analysis

In addition to quantitative analysis, qualitative analysis techniques are used to complement the understanding of the effectiveness of teachers' professional development and student achievement. Qualitative data, such as interview transcripts or open-ended survey responses, can be analyzed using thematic analysis, content analysis, or grounded theory approaches. These techniques involve coding and categorizing data to identify common themes, patterns, and relationships, providing rich insights into participants' experiences and perspectives.

4. Mixed Methods Analysis

The study employs a mixed methods approach, combining quantitative and qualitative data analysis techniques. This allows for a more comprehensive understanding of the research topic by integrating both numerical data and contextual insights. Mixed methods analysis involves triangulation, where researchers compare and integrate findings from quantitative and qualitative data to gain a deeper understanding of the research questions.

The data analysis plan in this research on the effectiveness of teachers' professional development and student achievement involves a range of statistical techniques and approaches.

Descriptive analysis provides a summary of the collected data, while inferential analysis explores relationships, differences, and predictive factors. Qualitative analysis enhances the understanding of participants' experiences and perspectives, while mixed methods analysis integrates both quantitative and qualitative data.

By employing appropriate data analysis techniques, the research can draw meaningful conclusions about the effectiveness of professional development programs and their impact on student achievement. These findings inform educational policies and practices, supporting evidence-based decision-making and continuous improvement in teacher professional development to enhance student outcomes.

3.6 Ethical consideration

Ethical considerations are paramount in any research. They provide an overview of the ethical considerations addressed in this context, highlighting the principles and guidelines that guide ethical research practices.

3.6.1 Informed Consent

Obtaining informed consent is a fundamental ethical requirement in this research. The processes of the research ensure that participants, including teachers, administrators, and students, understand the purpose of the study, their rights, and the potential risks and benefits of their involvement. Informed consent involves providing clear and comprehensive information, allowing participants to make an autonomous decision about their participation. It is important to address any concerns or questions raised by participants before obtaining their consent.

3.6.2 Confidentiality and Anonymity

Maintaining confidentiality and anonymity is a key in protecting the privacy and confidentiality of participants. All personal information collected during the study is kept confidential and not disclosed to unauthorized individuals. Data is stored securely and only accessed by authorized personnel. Anonymity is maintained when reporting research findings, using pseudonyms or other techniques to protect participants' identities.

3.6.3 Minimizing Harm and Risks

In this paper I ensure to take measures to minimize potential harm and risks to participants. This includes conducting a thorough risk assessment to identify any potential physical, psychological, or social risks associated with the research. Adequate safeguards are implemented to protect participants' well-being. The research is mindful of power dynamics and ensure that participation is voluntary, without any coercive or undue influence.

3.6.4 Equity and Fairness

In this Ethical research practices require I ensure to promote equity and fairness in this study. This includes ensuring equal access and opportunities for participation among diverse groups of

teachers and students as well as the paper content is sensitive to potential power differentials and I ensure that the research process is respectful, inclusive, and non-discriminatory. Attention to cultural, linguistic, and social factors that may influence participants' experiences is highly taken in consideration.

3.6.5 Researcher Integrity

In these ethical research practices, I demand honesty, transparency, and integrity. I accurately represent the purpose, methods, and findings of this study. They are disclosing any potential conflicts of interest that may influence the research outcomes. Data collection and analysis are conducted objectively and without bias. I acknowledge and respect the contributions of participants and other stakeholders.

Ethical considerations are of utmost importance in this research it Informed consent, confidentiality, minimizing harm, promoting equity, maintaining researcher integrity, and obtaining all approval are crucial components of research practices.

3.6.6 Trustworthiness

Ensuring the trustworthiness of research is essential. In my paper I refer to the credibility, transferability, dependability, and confirmability of research findings. This part provides an overview of the key components that contribute to the trustworthiness of my research in this study, highlighting their significance in establishing the validity and reliability of the study.

3.6.7 Credibility:

Credibility is concerned with the trustworthiness of these research findings and their alignment with the reality being studied. The paper establishes credibility by employing rigorous data collection and analysis methods. This includes using multiple sources of data, employing triangulation techniques, and ensuring the use of valid and reliable measurement tools. The papers also consider the perspectives of various stakeholders, such as teachers, students, and administrators, to ensure a comprehensive understanding of the phenomenon under investigation.

3.6.8 Transferability:

Transferability refers to the extent to which research findings can be applied or generalized to other contexts or settings. In the context of this study, I provide sufficient contextual information about the study participants, intervention programs, and educational settings. This allows other researchers and practitioners to assess the applicability of the findings to their own contexts.

3.6.9 Dependability and Confirmability

Dependability relates to the stability and consistency of research findings over time and across different researchers. I clearly document the research processes, including data collection procedures, data analysis techniques, and any changes or modifications made during this study. This enables others to replicate the study and verify the findings. Transparent reporting of the research methods and procedures is crucial in establishing the dependability of the research.

Ensuring the trustworthiness of research is central in this paper. Credibility, transferability, dependability, and confirmability are key components that contribute to the trustworthiness of research findings. By employing rigorous data collection and analysis methods, providing sufficient contextual information, documenting the research process, and maintaining objectivity, researchers can enhance the trustworthiness of their research. This, in turn, contributes to the credibility and reliability of the findings, allowing them to be applied in educational practice, policy, and decision-making processes.

Chapter 4: Results, Analysis and Discussion

4.1 Overview of the Chapter

This chapter represents the survey results and the findings from the participants' interviews (school leaders). The analysis of quantitative data of the questionnaire starts with discussing the demographic information and measures the instrument's reliability.

Then, testing the hypotheses which figure out the correlations between the most needed professional training for teachers which is directly needed to improve students' achievement and whole school performance and the determinants that are claimed by the literature review on the other hand. Lastly is the qualitative approach of the study.

It concentrates on two themes. The first one collects the professional training for teacher's reflections on the relation between teaching modality and students' achievement (attainment, Progress and study skills the study aims to examine the most needed professional training for teachers which is directly needed to improve students' achievement and whole school performance). And the second one discusses the leadership support from leaders' and teachers' perspectives.

4.2 Qualitative Analysis

4.2.1 Demographic Information

The questionnaire was distributed to 107 participants through electronic link via emails and WhatsApp, which enables participants to enter the online survey page and answer the questionnaire. And returned 96 responses from teachers of the school, this number of participants meets the recommended sample size, which is 149, considering a 95% confidence level, 5% margin of error, and 0.5 sample proportion. **The analysis of the demographic data was as follows:**

Participants' gender: little more than a half (56%; 54) of the participants were Male, while (44%; 42) represented the Female gender, as indicated in figure (4-1). This is in line with the normal distribution of the study sample, which is teachers in secondary schools (Max: boys and girls).

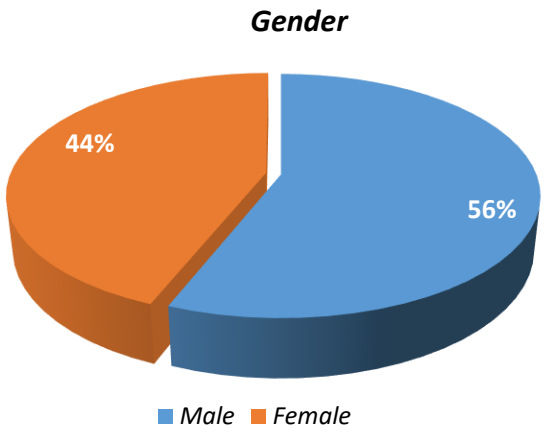

Figure 1: Questionnaire Participants' Gender

The age group of the participants figure (4-2) indicates that most of them (50.3%; 76) were aged 31 to 40 years, while (20.9%; 30) were 31 to 40, then (18.6%; 33) were aged 50 above, while (17.5%; 16) were aged 21 to 30 years. This is an indication of the existence of human cadres of teachers with high experience and competencies, since the majority age group is above average.

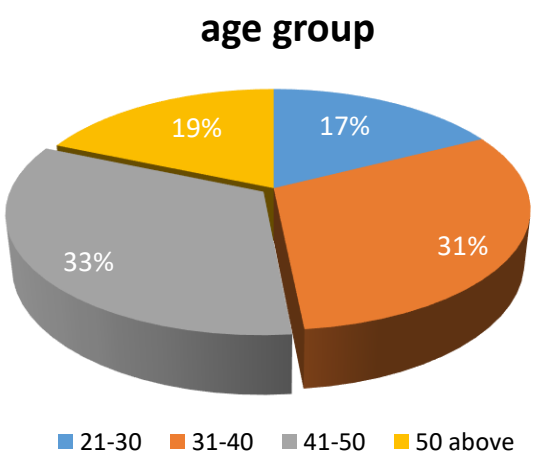

Figure 2: Questionnaire Participants' Age Group

Level of education: The participants had various educational levels, yet the large majority of them (64.2%; 61) were found to have a PG degree. Were found to have a bachelor's degree. In addition, UG degree were obtained by (24.2%; 23), while (11.6%; 11) had a PhD degree. This is an indication of the high educational level of teachers in the school.

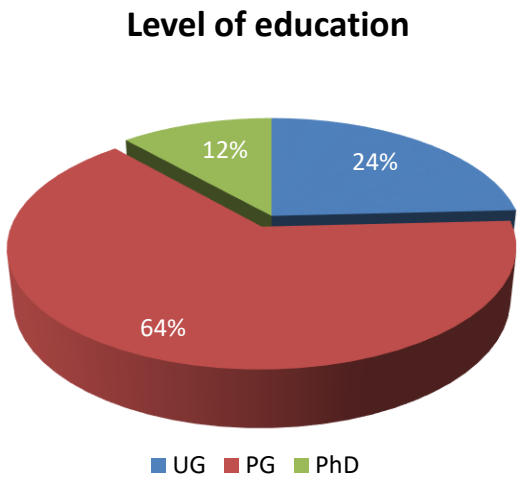

Figure 3: ***Participants' Educational Level***

Years of teaching profession: Regarding the participants teaching experience, the responses read that (21.6%; 21) spent from 1 to 5 years in the field, while (20.6%;20) spent from 6 to 10 years, and (20.6%;20) spent from 11 to 15 years,(18.6%; 18) spend from 26 Above, (8.2%; 8) spend from 16 to 20years, and lastly (10.3%; 10) spent from 21 to 25 years, And as it appears The teaching areas of the respondents expanded to cover all subjects at different levels.

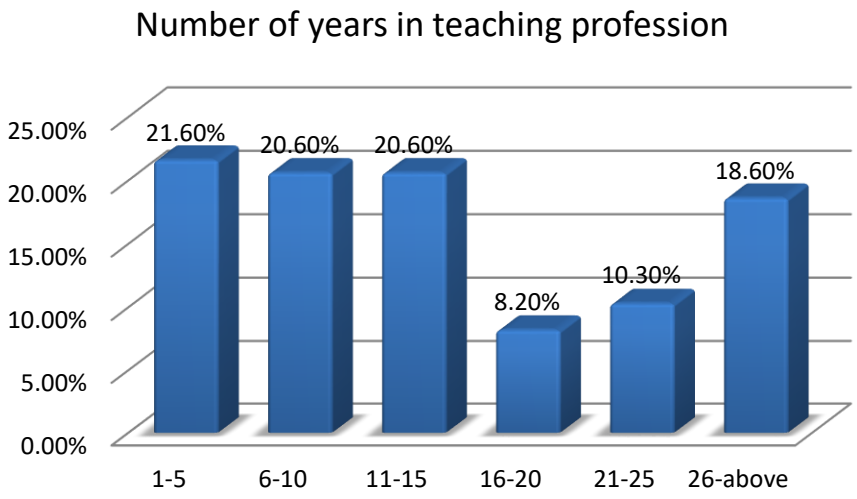

Figure 4: Participants' Years of teaching profession

Years of current school: Regarding the participants teaching experience in the current school, the responses read that (38.1%; 37) spent from 1 to 3 years in the current school, while (33%; 32) spent from 4 to 6 years, (9.3%; 9) spend from 7 to 10, and lastly (19.6%; 19) spent more than 10 years.

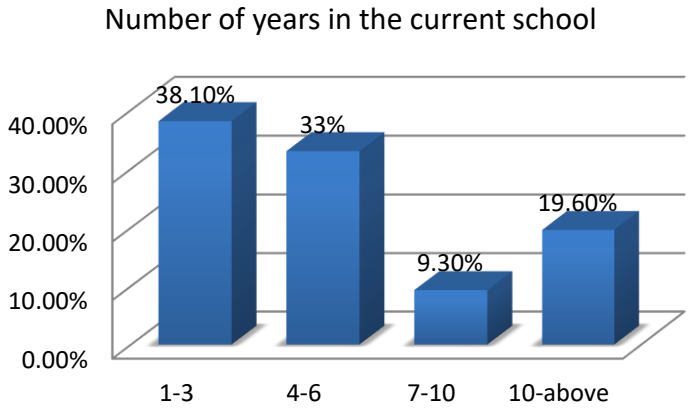

Figure 5: Participants' Years of current school

Years in leadership roles*:* Regarding the participants teaching in years in leadership roles, the responses read that (66.3%; 57) spent from 1 to 4 years in the in-leadership roles, while (18.6%; 16) spent from 5 to 8 years, while (9.3%; 8) spent from 9 to 12 years, (2.3%; 2) spend from 13 to 17, and lastly (3.5%;)193 spent from 10 Above years.

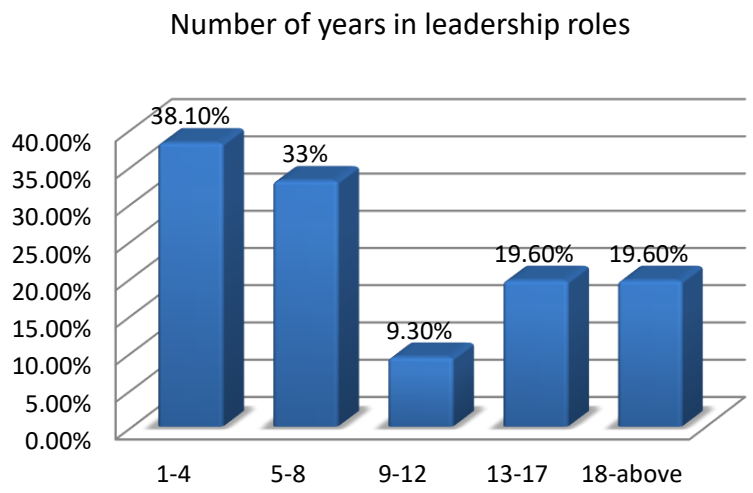

Figure 6: Participants' Years of current school

4.2.2 Testing Hypothesis

The study aims to answer research questions and to achieve these aims, the following hypotheses should be considered:

Hy (1): How much do teachers believe who engage in high-quality professional development gain new instructional strategies, content knowledge, and pedagogical skills that can be applied effectively in the classroom.

To answer this question, the frequencies analysis of the survey question “Did he PD develop my teaching strategies to meet the needs of individuals and group of students.?" returned that (55.8% n=53) Their answer was that they agree that there is a change in the teaching strategy, while (37.9%; n=36) Their response was that they strongly agree that there is a change in the teaching strategy to meet their educational needs, and only (6.3%, n=6) are Neutral. See figure (4-7).

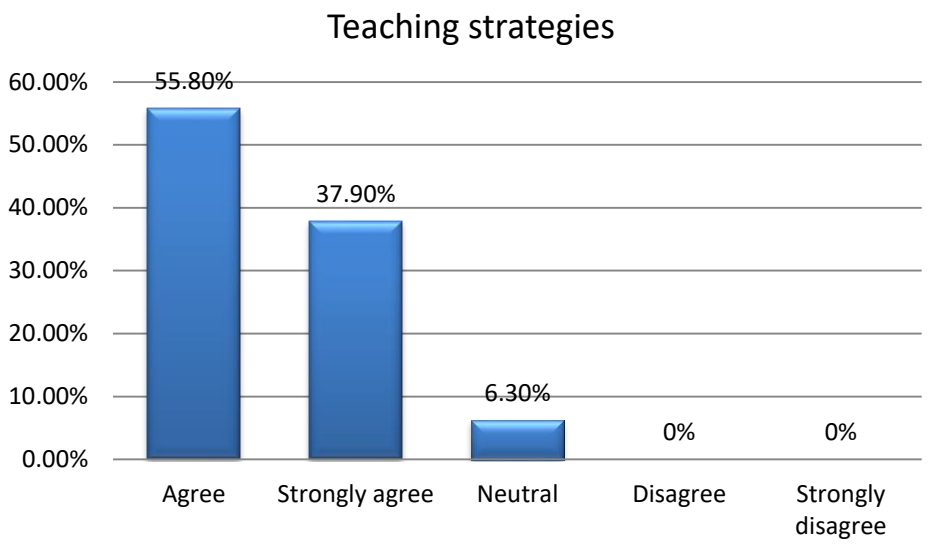

Figure 7: ***Teaching strategies***

Hy (2): How far do the findings support the notion that well-designed professional development initiatives can lead to improvements in teacher competencies, which subsequently benefit student achievement.

This question raised two hypotheses: the null hypothesis and the alternative one. The alternative hypothesis suggests that well-designed professional development initiatives can lead to improvements in teacher competencies, better than standard design development initiatives.

To answer this question, from the respondents' opinions, we found that good design is in the first place, as good design reflects the capabilities and skills of teachers and their professional development. In contrast to the traditional design, which is considered inflexible and reflects a weakness in teacher productivity. See tables (4-1).

Table 1 Correlation between standard design for professional development and Good design for professional development.

		Standard design	Good design
standard design	Pearson Correlation	1	**0.187
	Sig. (2-tailed)		0.000

	N	96	96
Good design	Pearson Correlation	**0.187	1
	Sig. (2-tailed)	0.000	
	N	96	96

**. Correlation is significant at the 0.01 level (2-tailed).

Hy (3): Are there relationship between changes in teachers' instructional practices and student achievement.

To answer this hypothesis, we will use the Pearson correlation coefficient. Which is based on the null theory and the alternative theory.

Alternative theory(H1): there relationship between changes in teachers' instructional practices and student achievement.

Zero theory(H0): No their relationship between changes in teachers' instructional practices and student achievement.

Table 2 Pearson correlation

hypothesis	Pearson correlation	)Sig.(
There is a statistically significant relationship at the level of significance ($a \leq 0.05$) between teachers' educational practices and students' achievement from teachers' point of view.	0.349*	0.000
* The correlation is statistically significant at the level of significance $a \leq 0.05$		

Table No. (1-4) shows that the correlation coefficient is 0.349, and the probability value (.Sig) is 0.00, which is less than the significance level ($a \leq 0.05$). This indicates that there is a large statistically significant relationship between the educational practices of teachers and students' achievement from the teachers' point of view. The researcher attributes this to the long experience and knowledge gained by teachers in the study sample.

4.3 Summary of the Quantitative Results

The study aims to show the impact and the effectiveness of conducting a professional development training for school middle leaders (SLTs) on the teachers and students' performance in schools the UAE.

Identify the relation between teachers' professional development and teacher performance and student achievement in private schools in the UAE. First, it identifies the Vocational training modalities currently used in the target schools. A descriptive analysis of the modalities proved that the majority of teachers Distinguished training strategies (55.8% n=53) agree, and (37.9%; n=36) strongly agree that professional training for teachers will It will enhance teachers' performance and student outcomes.

Then, the relations between these teachers' educational practices and students were tested. Pearson's correlation analysis indicates that that there is a large statistically significant relationship between the educational practices of teachers and students' achievement from the teachers' point of view. The researcher attributes this to the long experience and knowledge gained by teachers in the study sample.

To investigate the relationship between demographic data and the professional development of teachers, the gender of teachers and their level of performance were analysed, and a significant relationship appeared between the two, which means that female teachers have a similar level of job performance compared to male teachers in general, regardless of any other variable. In addition, the association test between professional development and other demographic information found that there is a statistically significant positive relationship between professional development, age groups, and years of experience.

The study examines the relationship between vocational training and two workers, and it is referred to in the theoretical background. These factors are the level of performance of the teachers, and the achievement of the students.

Correlation analysis proved that both workers are highly related to professional development, and it was found that the level of professional development of new teachers needs additional time to acquire professional knowledge, and failure to rectify this matter leads to an expected low level of performance.

4.4 Summary of the qualitative results and Triangulation of the two data

The qualitative side of the study focuses on exploring teachers' attitudes towards professional development and the ways in which teachers can raise the level of performance, by helping teachers to develop their professional performance with the aim of raising students' results in their academic achievement.

At this stage of the study, 12 different interviews were conducted with teachers in different disciplines in the same school. Seven teachers were interviewed to learn more about their concern about performance and how it relates to teachers and its impact on student grades. The participants' ages ranged from 32 to 53 years, with experience from 5 to 17 years in the educational field. 3 of them are female, and 4 are teachers. They use modern methods of teaching, and one of them still follows traditional lessons.

Chapter 5 Conclusion and Recommendations

5.1 Overview of the Chapter

Studying the effectiveness of teachers' professional development programs in relation to student achievement is decisive for improving educational practices and outcomes (Trust et. al 2017). This research focuses on understanding the impact of professional development on various aspects of student achievement, including academic attainment, progress, and the development of essential learning skills.

Through a comprehensive examination of the literature, it is evident that high-quality professional development positively influences teachers' instructional practices, leading to improved student outcomes. The research has shown that effective professional development programs incorporate evidence-based strategies, subject matter expertise, and collaborative learning communities.

The trustworthiness of research in this context relies on several key components. Credibility is established through rigorous data collection and analysis methods, while transferability is enhanced by providing contextual information. Dependability is achieved by documenting the research process, and confirmability is ensured by maintaining objectivity throughout the study.

The conclusion of research in this field involves summarizing the main findings, discussing their implications, and providing recommendations. The findings highlight the significant impact of professional development on student achievement and emphasize the importance of ongoing support and collaboration for teachers. The implications of the research contribute to educational practices and inform the design, implementation, and evaluation of professional development initiatives.

Practical recommendations include incorporating specific components or strategies into professional development programs, promoting collaboration among teachers, and aligning professional development with effective instructional practices. Additionally, recommendations for future research identify areas for further investigation, addressing gaps or limitations and proposing new research questions.

In summary, studying the effectiveness of teachers' professional development and its impact on student achievement is crucial for improving educational outcomes. This research provides valuable insights that inform educational practices, policies, and future research directions. By understanding the relationship between professional development and student achievement, educational stakeholders can work towards enhancing teacher growth and ultimately improving student success.

5.2 Discussion of key findings

The effectiveness of teachers' professional development programs in improving student achievement is a topic of great importance in the field of education. Through a comprehensive review of the literature, several key findings have emerged that shed light on the context of studying the effectiveness of teachers' professional development and its impact on student achievement.

5.2.1 Positive Influence on Instructional Practices

One of the key findings is that high-quality professional development programs have a positive influence on teachers' instructional practices (Desimone 2009). These programs provide teachers with opportunities to enhance their knowledge, skills, and pedagogical approaches, enabling them to implement effective teaching strategies in the classroom. As a result, students benefit from more engaging, personalized, and impactful instruction.

5.2.2 Improved Academic Attainment

The research consistently indicates that effective professional development programs contribute to improved academic attainment among students. By equipping teachers with the necessary tools and strategies, professional development enables them to address students' diverse learning needs, enhance their subject matter expertise, and utilize evidence-based instructional methods. Consequently, students achieve higher levels of academic success and proficiency in various subjects.

5.2.3 Enhanced Learning Progress

Another significant finding is that professional development positively influences students' learning progress. Teachers who engage in ongoing professional development are better equipped to monitor student progress, provide timely feedback, and tailor instruction to meet individual learning needs. This personalized approach to teaching fosters continuous growth and development among students, leading to improved learning outcomes and increased rates of progress.

5.2.4 Development of Essential Learning Skills

Professional development programs also play a vital role in fostering the development of essential learning skills among students. These skills encompass critical thinking, problem-solving, collaboration, communication, and creativity. Effective professional development initiatives equip teachers with strategies to integrate these skills into their instructional practices, creating an environment that nurtures the holistic development of students and prepares them for success in the 21st-century workforce.

5.2.5 Importance of Continuous Support and Collaboration

A recurring theme in the literature is the significance of continuous support and collaboration in maximizing the effectiveness of professional development programs. Teachers benefit from ongoing mentoring, coaching, and opportunities for reflection and collaboration with colleagues. Such support structures not only deepen their understanding and implementation of new instructional practices but also foster a sense of professional growth and efficacy.

Overall, the key findings highlight the positive impact of teachers' professional development on student achievement. Effective professional development programs have been shown to enhance instructional practices, improve academic attainment, facilitate learning progress, and promote the development of essential learning skills. The findings emphasize the importance of continuous support and collaboration in maximizing the effectiveness of professional development initiatives.

By understanding these key findings, educational stakeholders can make informed decisions when designing and implementing professional development programs. They can prioritize evidence-based strategies, provide ongoing support to teachers, and create collaborative learning communities that foster continuous growth and improvement. Ultimately, this contributes to improved student achievement and prepares students for success in an ever-changing world.

5.2.6 Long-Term Impact

Research suggests that the impact of teachers' professional development on student achievement extends beyond immediate outcomes (Patton, Parker & Tannehill 2015). Long-term studies have shown that sustained engagement in high-quality professional development programs leads to significant and lasting improvements in student achievement. This emphasizes the importance of continuous professional development and the need for ongoing support to sustain the gains made in student learning.

5.2.7 Differentiated Instruction

Effective professional development programs emphasize the importance of differentiated instruction, which involves tailoring teaching strategies and content to meet the diverse needs of students. Research has found that teachers who receive training in differentiated instruction through professional development are better equipped to address individual student strengths, interests, and learning styles. This personalized approach to teaching results in increased student engagement, motivation, and academic success.

5.2.8 Impact on Disadvantaged Students

Professional development programs that specifically target the needs of disadvantaged students have shown promising results. Research indicates that focused professional development interventions in schools with a high proportion of economically disadvantaged students can help bridge the achievement gap. By equipping teachers with strategies to address the unique challenges faced by disadvantaged students, such programs can improve academic outcomes and contribute to more equitable education.

5.2.9 Teacher Collaboration and Peer Learning

The literature emphasizes the importance of teacher collaboration and peer learning in the effectiveness of professional development. Programs that promote collaborative learning communities and provide opportunities for teachers to share knowledge, exchange ideas, and engage in reflective discussions have been found to have a positive impact on student achievement. Collaborative professional development initiatives foster a culture of continuous learning, support innovation, and enhance instructional practices.

5.2.10 Consideration of Context

Effective professional development programs take into account the specific context and needs of teachers and students. The literature highlights the importance of aligning professional development initiatives with the local educational context, curriculum frameworks, and cultural factors. By considering contextual factors, such as language diversity, cultural sensitivity, and local priorities, professional development programs can be more responsive and relevant, leading to improved student achievement.

In conclusion, the key findings demonstrate the positive impact of teachers' professional development on student achievement (Desimone 2009). These findings highlight the importance of effective instructional practices, improved academic attainment, enhanced learning progress, and the development of essential skills. They emphasize the need for continuous support, collaboration, and differentiated instruction to maximize the effectiveness of professional development programs. Additionally, the findings underscore the importance of considering the context and addressing the needs of disadvantaged students. By incorporating these findings into educational practice and policy, stakeholders can strive to improve student achievement and foster a culture of lifelong learning.

5.3 Recommendations

Based on the research conducted on the effectiveness of teachers' professional development and student achievement, the following recommendations are put forth to inform educational practice, policy, and future research:

1. Invest in High-Quality Professional Development

Educational stakeholders should prioritize the investment in high-quality professional development programs for teachers. These programs should be evidence-based, subject-specific, and provide teachers with the necessary knowledge, skills, and strategies to enhance their instructional practices. Adequate resources should be allocated to ensure ongoing professional development opportunities that align with the latest research and best practices.

2. Foster Collaborative Learning Communities

Promote the establishment of collaborative learning communities among teachers. Encourage opportunities for peer collaboration, mentoring, and sharing of effective instructional practices. By fostering a culture of collaboration, teachers can learn from each other, exchange ideas, and collectively enhance their teaching approaches, ultimately benefiting student achievement.

3. Provide Ongoing Support and Mentoring

Recognize the importance of ongoing support and mentoring for teachers engaged in professional development. Implement structures that provide continuous support to teachers as they implement new strategies and instructional practices. This can include coaching, mentoring, and regular feedback from instructional leaders or experienced educators who can provide guidance and assist in the implementation of new approaches.

4. Differentiate Professional Development

Acknowledge the diverse needs and contexts of teachers and students and provide differentiated professional development opportunities. Recognize that teachers have varying levels of expertise and experience, and tailor professional development programs accordingly. Address the specific needs of disadvantaged students and schools by offering targeted professional development interventions that address the unique challenges they face.

5. Align Professional Development with Research and Curriculum

Ensure that professional development programs align with current research and best practices in education. Emphasize the alignment of professional development with the curriculum frameworks and learning objectives of the educational system. Professional development should

be designed to support teachers in implementing evidence-based instructional strategies that are aligned with the specific needs of their students.

6. Evaluate and Monitor the Impact

Incorporate evaluation and monitoring processes to assess the impact of professional development on student achievement. Establish mechanisms for collecting data on student outcomes, teacher effectiveness, and the implementation of learned strategies. Regularly assess the effectiveness of professional development programs to ensure they are achieving the desired outcomes and make necessary adjustments based on feedback and evidence.

7. Promote a Culture of Lifelong Learning

Encourage a culture of lifelong learning among teachers by emphasizing the importance of continuous professional development throughout their careers. Provide incentives and recognition for teachers who engage in ongoing professional growth and create opportunities for them to pursue advanced certifications and degrees. Foster a supportive environment that values and prioritizes professional learning.

8. Foster Collaboration Between Researchers and Practitioners

Promote collaboration between researchers and practitioners to bridge the gap between research and practice. Encourage dialogue and partnerships between researchers, policymakers, and educators to ensure that research findings are translated into effective professional development programs. Foster a two-way exchange of knowledge and expertise to inform research priorities and educational practice.

By implementing these recommendations, stakeholders can enhance the effectiveness of teachers' professional development programs and, in turn, positively impact student achievement. These recommendations emphasize the importance of evidence-based practices, collaboration, ongoing support, and the alignment of professional development with student needs and educational objectives.

5.4 Implications

Studying the effectiveness of teachers' professional development and its impact on student achievement carries significant implications for educational practice, policy, and research.

1. Targeted Investment in Professional Development

The findings highlight the importance of targeted investment in high-quality professional development programs. Educational policymakers and administrators should prioritize allocating resources to support the ongoing professional growth of teachers. This includes providing funding, time, and opportunities for teachers to engage in relevant and research-based professional development activities.

2. Customization and Differentiation

Professional development programs should be tailored to the specific needs of teachers and students. Recognizing the diverse contexts and individual requirements, customization and differentiation strategies should be employed to address the varying instructional needs and challenges faced by teachers. This includes considering the needs of disadvantaged students and providing targeted support to address the achievement gap.

3. Collaboration and Knowledge Sharing

Encouraging collaboration among teachers is essential. Professional development programs should create opportunities for teachers to collaborate, share experiences, and exchange effective instructional practices. By fostering a culture of collaboration, educators can learn from each other, enhance their teaching strategies, and collectively improve student achievement.

4. Continuous Support and Mentoring

Sustained support and mentoring play a crucial role in the effectiveness of professional development. Educational institutions should establish structures to provide ongoing support to teachers, including coaching, mentoring, and feedback mechanisms. These support systems can assist teachers in implementing newly acquired knowledge and skills, as well as provide guidance and assistance throughout the professional development process.

5. Integration of Research and Practice

There is a need for stronger collaboration between researchers and practitioners to bridge the gap between research and practice. Educational policymakers, researchers, and practitioners should work together to ensure that research findings inform the design and implementation of professional development programs. This integration helps ensure that programs are evidence-based, aligned with current research, and responsive to the needs of teachers and students.

6. Monitoring and Evaluation

Regular monitoring and evaluation of professional development programs are vital to determine their impact on student achievement. Educational institutions should establish mechanisms to collect and analyze data on student outcomes, teacher effectiveness, and program implementation. By conducting rigorous evaluations, policymakers and administrators can make informed decisions about the effectiveness of professional development initiatives and identify areas for improvement.

7. Holistic Approach to Student Achievement

Professional development programs should adopt a holistic approach to student achievement, considering not only academic outcomes but also the development of essential skills, such as critical thinking, creativity, problem-solving, and social-emotional competencies. This broader perspective acknowledges the importance of nurturing well-rounded students who are prepared for success in an ever-changing world.

By considering these implications, educational stakeholders can enhance the effectiveness of professional development programs and promote improved student achievement. It requires a collaborative effort among policymakers, administrators, educators, and researchers to implement evidence-based practices, provide ongoing support, and create a culture of continuous learning and development.

5.5 Limitations

While studying the effectiveness of teachers' professional development and student achievement is a valuable area of research, it is important to acknowledge certain limitations that may arise in this context. These limitations impact the generalizability and interpretation of findings. Some found limitations include:

1. Generalizability

The findings of studies conducted on the effectiveness of teachers' professional development and student achievement may be limited in their generalizability. Many studies are conducted in specific educational settings, such as individual schools or districts, and may not be representative of broader populations. The characteristics of teachers, students, and contextual factors may vary across different regions or educational systems, which can limit the applicability of findings to other contexts.

2. Self-Selection Bias

Many studies rely on voluntary participation from teachers in professional development programs. This introduces a potential self-selection bias, as teachers who choose to participate may already be more motivated or interested in professional growth. The results may not be representative of all teachers or may overestimate the impact of professional development on student achievement.

3. Methodological Limitations

Different research methodologies employed in studying the effectiveness of professional development and student achievement may have inherent limitations. For example, self-report surveys or teacher reflections may be subject to recall bias or social desirability bias. Similarly, relying solely on standardized test scores as a measure of student achievement may not capture the full range of learning outcomes or overlook other important factors contributing to student success.

4. Lack of Longitudinal Studies

Many studies examining the effectiveness of professional development and student achievement are conducted over relatively short periods, limiting the ability to assess long-term impacts. Longitudinal studies that follow teachers and students over an extended period are needed to understand the sustained effects of professional development on student achievement. Such studies are often resource-intensive and challenging to conduct.

5. Causality and Multiple Influences

Establishing a direct causal link between teachers' professional development and student achievement can be complex. Numerous factors influence student achievement, including school leadership, curriculum, family background, and socioeconomic status. Isolating the impact of professional development from these other factors presents challenges, and it is difficult to attribute changes in student achievement solely to professional development efforts.

6. Limited Outcome Measures

The focus on traditional measures of student achievement, such as test scores, may overlook other important aspects of learning and student development. While test scores provide quantifiable data, they do not capture the full range of skills, attitudes, and dispositions that contribute to student success. It is important to consider a broader set of outcome measures, such as critical thinking, problem-solving, creativity, and social-emotional skills.

7. Resource Constraints

Implementing high-quality professional development programs requires substantial resources, including financial investment, time, and expertise. Limited resources in some educational settings may restrict the availability or quality of professional development opportunities for teachers, which can impact the overall effectiveness and reach of these programs.

It is important for researchers, policymakers, and practitioners to be aware of these limitations when interpreting and applying the findings of studies on the effectiveness of teachers' professional development and student achievement. Addressing these limitations can help strengthen future research and enhance the design and implementation of professional development programs to maximize their impact on student learning outcomes.

5.6 Scope for further study

While considerable this research which has been conducted on the effectiveness of teachers' professional development and its impact on student achievement, there are several areas that offer opportunities for further study:

1. Long-Term Effects

Further investigation is needed to understand the long-term effects of teachers' professional development on student achievement. Longitudinal studies that follow teachers and students over an extended period can provide valuable insights into the sustained impact of professional development on student outcomes. Examining the lasting effects beyond immediate implementation can help inform the design of long-term professional development interventions.

2. Contextual Factors

Exploring the influence of contextual factors on the effectiveness of professional development programs is an area that requires more attention. Factors such as school culture, leadership, community support, and resource allocation may interact with professional development efforts and impact student achievement. Future research should delve deeper into how these contextual factors influence the implementation and outcomes of professional development initiatives.

3. Differentiated Approaches

Further investigation is needed to determine the most effective strategies for differentiating professional development to meet the diverse needs of teachers and students. Research can explore how to tailor professional development programs to specific subject areas, grade levels, and student populations. Understanding the optimal approaches for customization and differentiation can enhance the impact of professional development on student achievement.

4. Teacher Collaboration and Networks

Examining the role of teacher collaboration and professional networks in professional development and student achievement is an area that warrants further study. Research can focus on understanding how collaborative structures and networks contribute to knowledge sharing, implementation fidelity, and improved student outcomes. Exploring the characteristics of effective collaboration and networks can inform the design and implementation of collaborative professional development models.

5. Impact on Specific Student Subgroups

Further investigation is needed to understand the differential impact of professional development on specific student subgroups. Research should explore how professional development interventions affect students from diverse backgrounds, including those with

different socioeconomic status, English language learners, and students with special educational needs. This research can help identify effective strategies for narrowing achievement gaps and promoting equitable outcomes.

6. Integration of Technology

Given the increasing prevalence of technology in education, there is a need to investigate the effectiveness of technology-enhanced professional development programs. Research can explore how technology can support and enhance professional development activities, facilitate knowledge sharing, and improve student achievement. Investigating the impact of blended learning, online platforms, and virtual communities of practice can provide valuable insights for future professional development initiatives.

7. Teacher Leadership and Capacity Building

Further study is needed to explore the role of teacher leadership and capacity building in professional development and student achievement. Research can investigate how empowering teachers as instructional leaders, mentors, or coaches impacts their own professional growth and the achievement of their students. Understanding the mechanisms through which teacher leadership contributes to improved student outcomes can inform strategies for building teacher capacity.

8. Comparative Studies

Comparative studies across different educational systems or countries can provide valuable insights into the effectiveness of professional development programs. Comparing the impact of different approaches, policies, or contextual factors on teacher development and student achievement can help identify promising practices and inform policy decisions.

By addressing these areas of further study, researchers can expand our understanding of the effectiveness of teachers' professional development and its impact on student achievement. This knowledge can inform the design of evidence-based interventions, guide educational policies, and contribute to continuous improvement in teaching and learning practices.

5.7 Concluding note

The framework of studying the effectiveness of teachers' professional development and its impact on student achievement is of significant importance in the field of education. Through extensive research and literature review, it becomes evident that high-quality professional development programs have the potential to positively influence teachers' instructional practices, which in turn can enhance student learning outcomes.

The studies reviewed in this research shed light on various aspects related to professional development, including the research approach, data collection, instruments and validation process, hypotheses, data analysis plan, ethical considerations, and limitations. The findings consistently emphasize the need for targeted investment, customization, collaboration, continuous support, integration of research and practice, and holistic approaches to student achievement.

Moreover, the literature review highlights the mixed approach of research, which combines quantitative and qualitative methods, providing a more comprehensive understanding of the complexities involved in studying the effectiveness of professional development and student achievement. This mixed approach allows researchers to capture both numerical data and rich insights from teachers and students, enabling a deeper analysis of the phenomenon under investigation.

While the research conducted in this area has provided valuable insights, it is essential to acknowledge the limitations and challenges that exist. Factors such as generalizability, self-selection bias, methodological limitations, lack of longitudinal studies, and multiple influences on student achievement can influence the interpretation and application of findings. These limitations call for continued research efforts to address these gaps and strengthen the evidence base.

Moving forward, there are several implications and opportunities for further study that have been identified. These include investigating the long-term effects of professional development, exploring the influence of contextual factors, examining differentiated approaches, studying the role of teacher collaboration and networks, considering the impact on specific student

subgroups, exploring the integration of technology, focusing on teacher leadership and capacity building, and conducting comparative studies across educational systems.

By embracing these implications and conducting further research in these areas, educators, policymakers, and researchers can collectively contribute to enhancing the effectiveness of professional development programs and improving student achievement. This requires a collaborative effort, informed decision-making, and ongoing reflection and adaptation of practices to meet the evolving needs of teachers and students.

In conclusion, studying the effectiveness of teachers' professional development and student achievement is a critical endeavor with far-reaching implications for educational practice and policy. It is an ever-evolving field of research that holds the potential to shape the future of teaching and learning. By continuing to explore, evaluate, and refine our understanding, we can foster an educational ecosystem that empowers teachers, nurtures student growth, and ultimately enhances the quality of education for all.

In summary, the context of studying the effectiveness of teachers' professional development and student achievement is a multifaceted and dynamic field of research. It emphasizes the importance of evidence-based practice, continuous improvement, collaboration, sustainability, and policy considerations. By embracing these principles and engaging in further research, the educational community can enhance teaching practices, elevate student achievement, and foster a culture of lifelong learning for educators and students alike.

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Appendices

Consent letter

Dear teacher,

I am a postgraduate student undertaking MA at The British University in Dubai and I am conducting research for my master thesis. Here is a brief introduction to my thesis:

Conducting a continuous professional development for School Middle Leaders at Abu Dhabi high schools and it is effectiveness on students' achievement (attainment, Progress and study skills

The study aims to examine the most needed professional training for teachers which is directly needed to improve students' achievement and whole school performance

The studies consulted a few schools located in UAE to be consulted about the kind of professional development they are implementing. both quantitative and qualitative approaches.

The Main research question is why middle leaders in Abu Dhabi schools should go under a continuous professional development training.

The middle leaders' teachers in schools should go under a unique and ongoing Professional development training in key areas where they are most effective on students' academic achievement and reflexes a realistic image of the school academic performance.

In away the necessity of school middle leaders t

develops their academic regular academic skills and to renew their knowledge to fit for the current academic challenges.

The study should be used according to framework and policies implemented in UAE only.

The study could be developed wider in the middle east area for some countries with some similarities in the policies and the educational framework.

The research suggests that teachers should continue the professional development in a year-long as meetings and interviews will be held with the middle leaders, teachers and school

Please complete the form at the bottom of this letter and return it to the researcher. If you would like to receive more information about the study, please contact me at 21001675@student.buid.ac.ae

Thank you,

Name of the student: Hamada Alfaqawi

Email: 21001675@student.buid.ac.ae

Program: Master of educational leadership and policy

Supervisor Name : Dr. Solomon A David

Email: Solomon.david@buid.ac.ae

The British University in Dubai.

---

demographic details

Gender

Age 21-30 / 31-40 / 41-50 / 50 above

Nationality

Level of education (UG, PG, PhD)

Number of years in teaching profession

Number of years in the current school

Number of years in leadership roles

Part one: Teachers teaching and learning

Please indicate Agree or disagree for the following questions:

Effectiveness of PD on teaching	Agree	Disagree	neutral	Strongly agree	Strongly disagree
1- The professional teaching training is highly effective.					
2- The PD has high impact on teaching knowledge of the teacher.					
3- The PD has positively boosted my lesson plan, the learning environment and the use of time and resources.					
4- The PD has developed my teaching strategies to meet the needs of individuals and group of students					
5- I have gained knowledge how to teach and develop critical thinking, problem solving, innovation and independent learning skills.					

Part two: students learning skills

Learning skills: According to the PD in the last two years, the students learning skills were highly developed in the following:	Agree	Disagree	neutral	Strongly agree	Strongly disagree

1- Student engagement in responsibilities for their own learning.					
2- Students' interaction, collaboration and communication skills.					
3- Application of learning to the real world					
4- Innovation, enterprise, enquiry, and research.					
5- Critical thinking, problem solving and the use of learning technologies.					

Part three: Students progress over time:

Progress over time, according to the PD in the last two years, students progress has been improved in the following:	Agree	Disagree	neutral	Strongly agree	Strongly disagree
1- Progress of students, including those with special education needs against their starting points and over time.					
2- Progress students made in lessons.					
3- Progress in different group of students.					
4- Progress in standardized assessments results.					
5- Progress in internal assessments results.					

Part four: Students attainment over time:

Students Attainment over the last two years have been progressed with evidences according to the followings:	Agree	Disagree	neutral	Strongly agree	Strongly disagree
1- Attainment as measured against licensed curriculum standards.					
2- Attainment as measured against national and international standards.					
3- Students' knowledges attainment.					
4- Students understanding of key subjects.					
5- Trends of attainment over time					

Part five: in a brief

1- Provide and example of how your teaching has signifyingly improved
……
……
……
……
……
……
……
……

2- How does the PD affected students learning skills over time?
……
……

……
……
……
……
……
……..

3- If agreed or disagreed, give reasons and examples of the progress students made over time after the teachers professional training course

……
……
……
……
……
……
……
……..

4- If agreed or disagreed give reasons and examples of the student's attainment made over time after the teachers professional training course

……
……
……
……
……
……
……
……

End of the survey

Sample of PD workshop

What were the most important issues discussed during the workshop?

Factors that contribute to real success in Inclusive Education.*

The presence, participation and achievement of all students.*
The UAE philosophy and vision for special education. *
***Factors that influence teacher's attitudes.**
***Characteristics of a student with a learning disability.**
***The meaning of Specific Learning Disability(SLD)**
ordersnostic and Statistical Manual of Mental DisDiag*
Examples of activities to improve phonemic awareness*

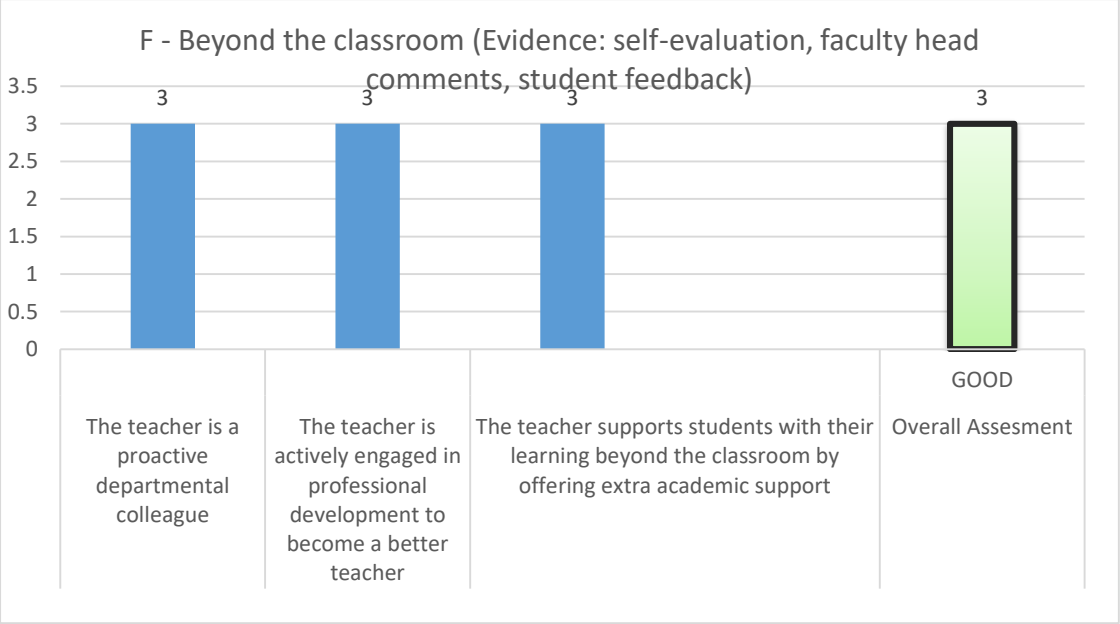
Here are some photos (screen shots) taken from the workshop.

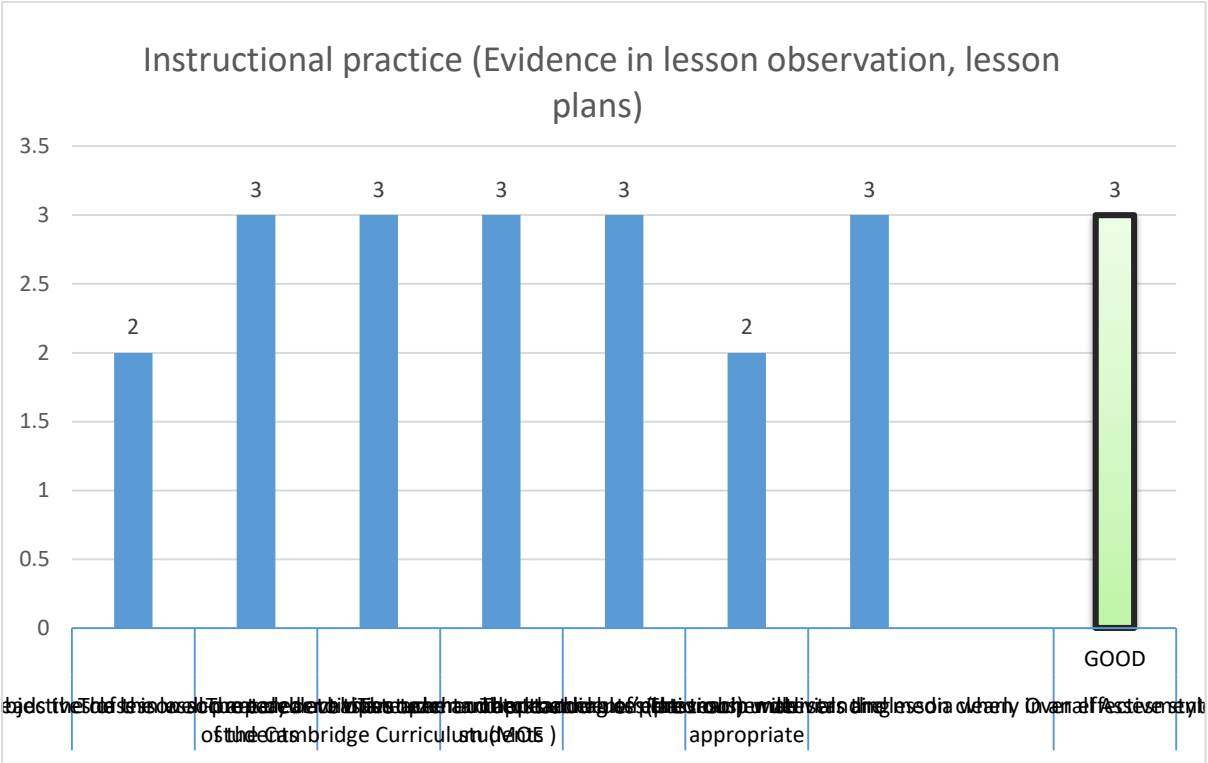
2023

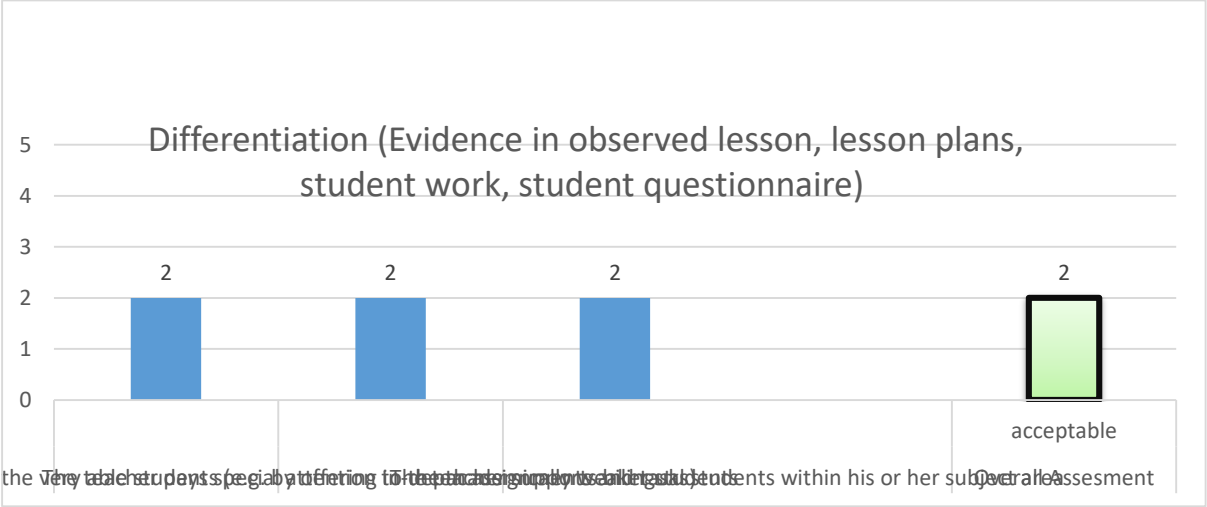
Professional development training plan for the second term 2023

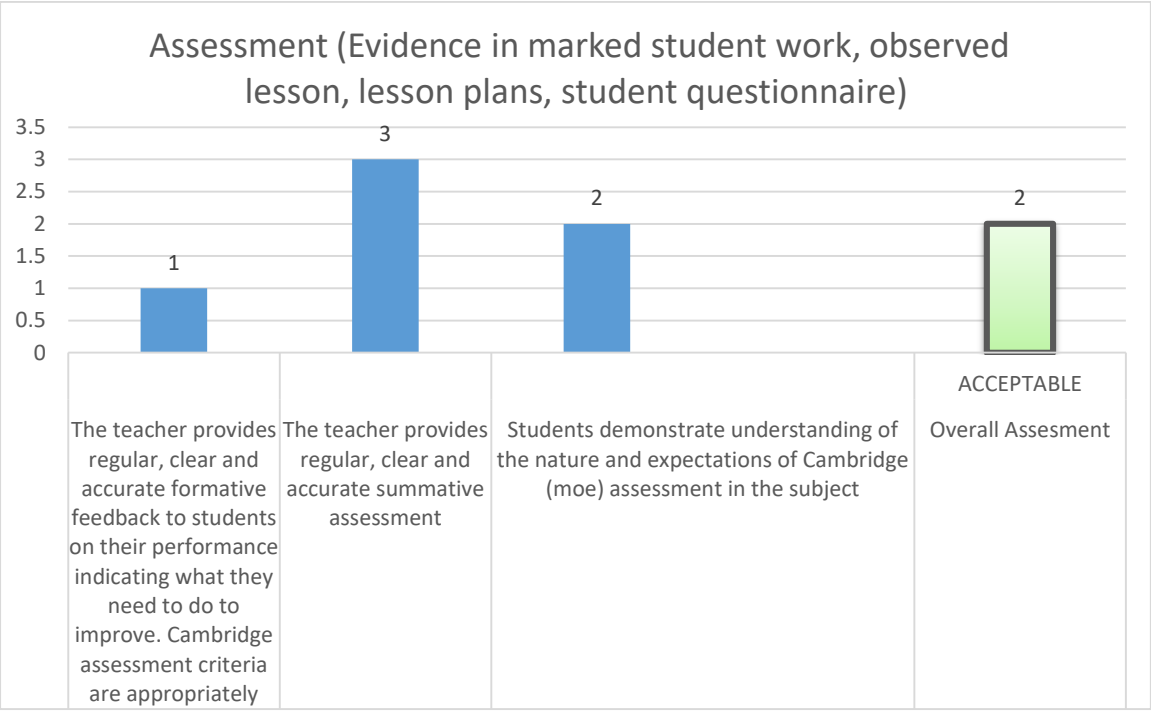
المهارات المكتسبة acquired skills	تاريخ الورشة course date	اسم الورشة workshop	اسم المعلم teachers name

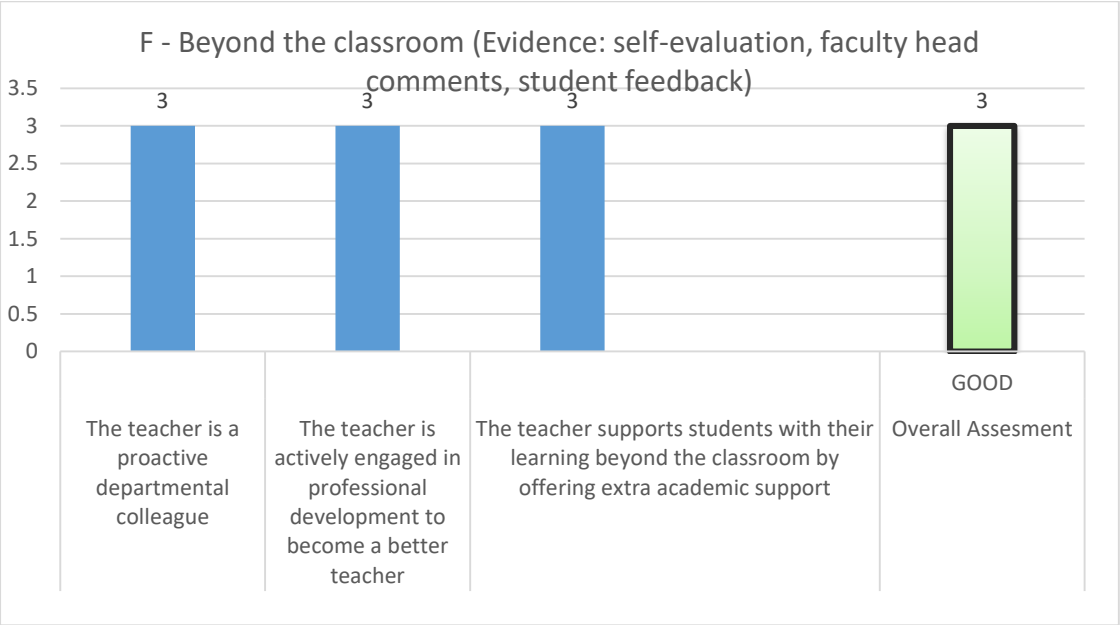
Some figures of teachers' evaluation forms analysis in science department



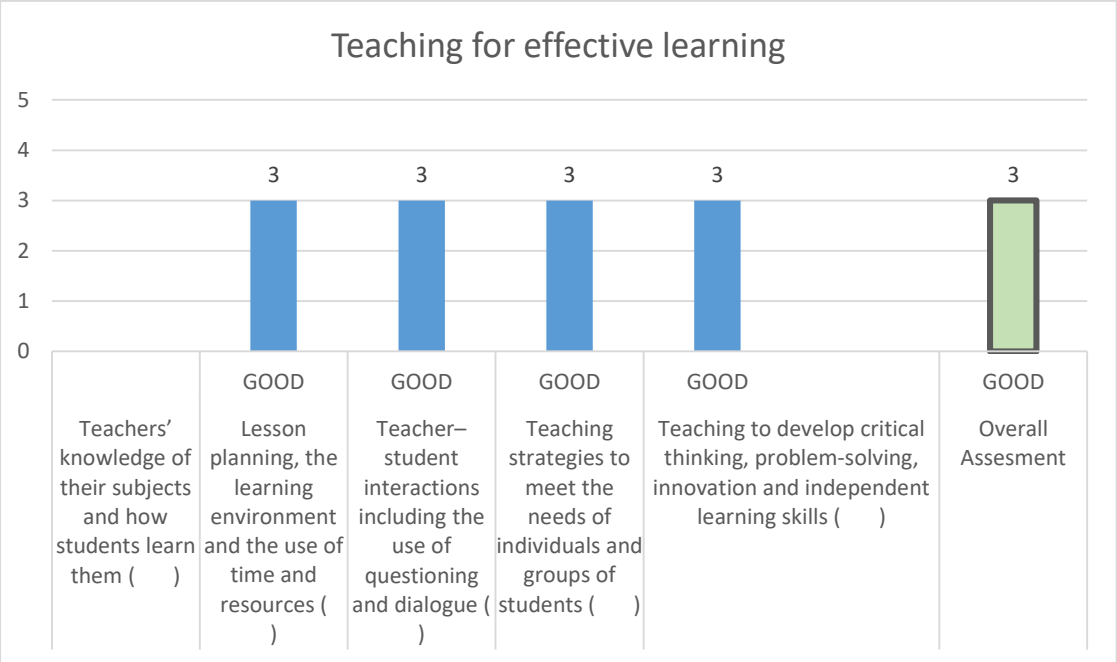

Instructional practice (Evidence in lesson observation, lesson plans)
3.5
3
2.5
2
1.5
1
0.5
0
2
3
3
3
3
2
3
3
GOOD
of the Cambridge Curriculum (MOE)
appropriate

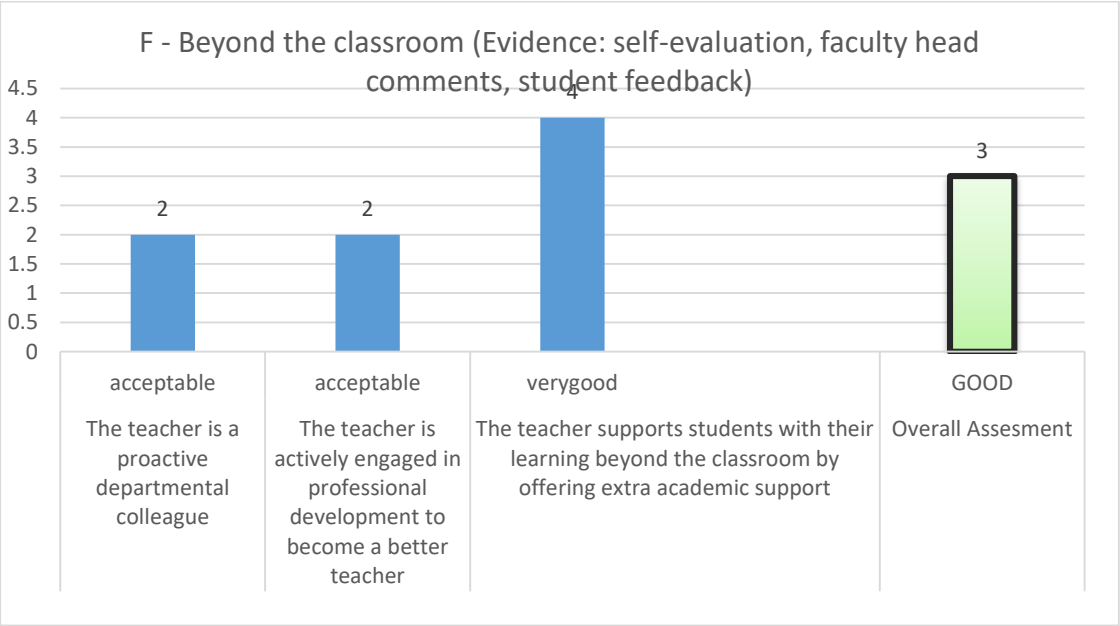

Differentiation (Evidence in observed lesson, lesson plans, student work, student questionnaire)
5
4
3
2
1
0
2
2
2
2
acceptable

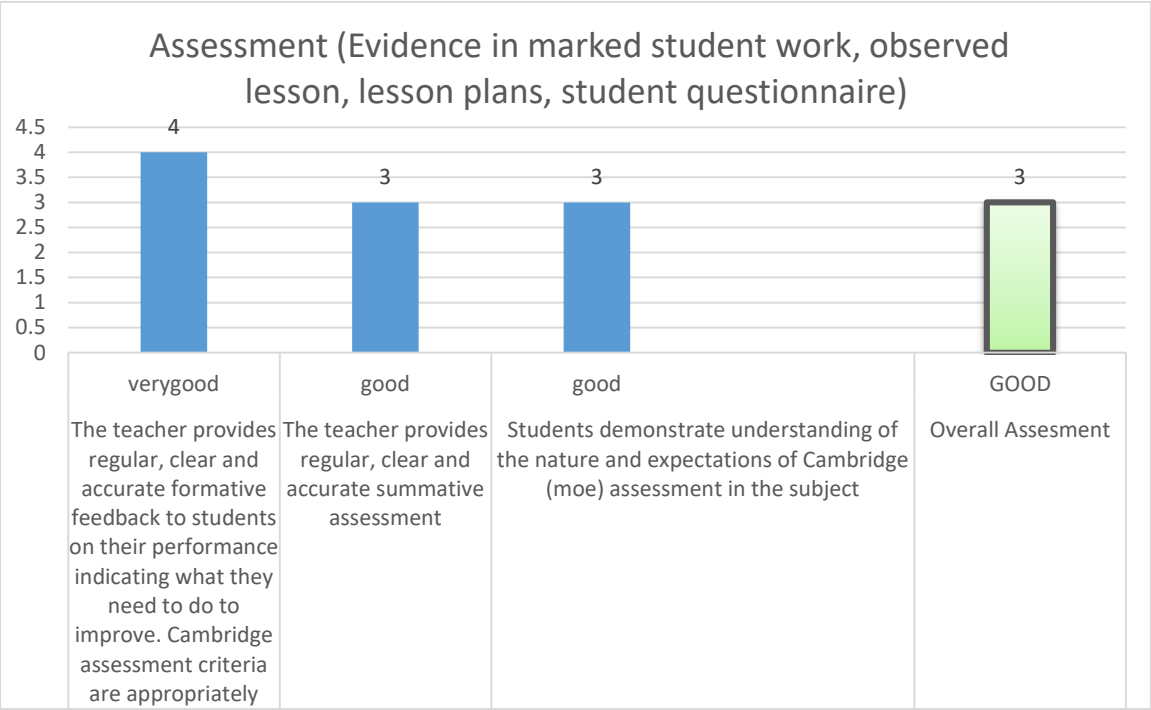


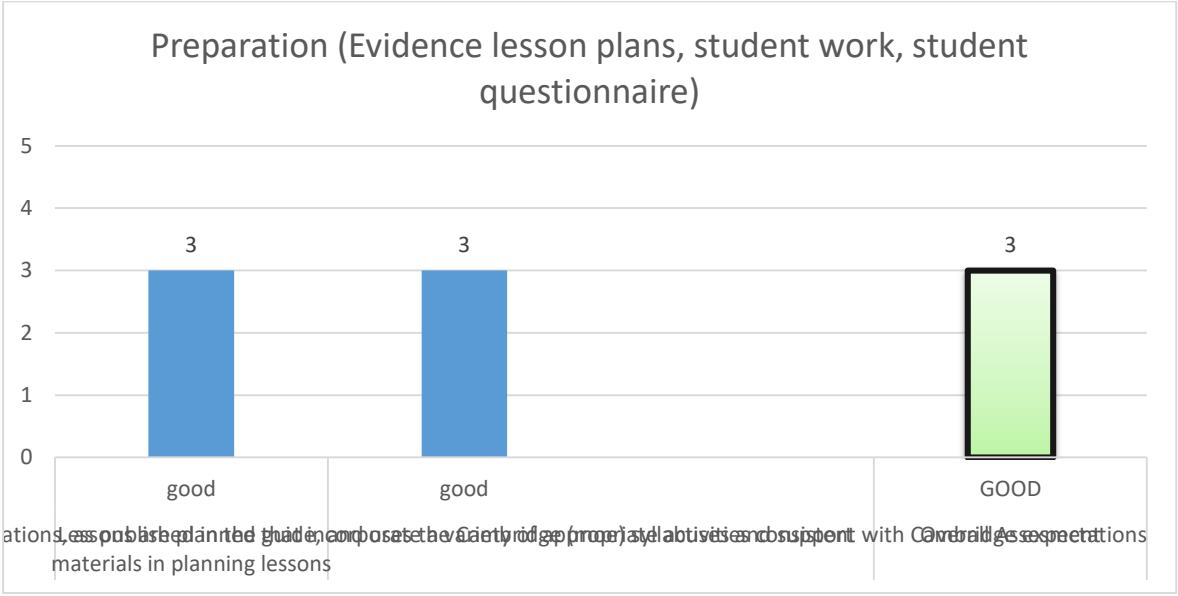


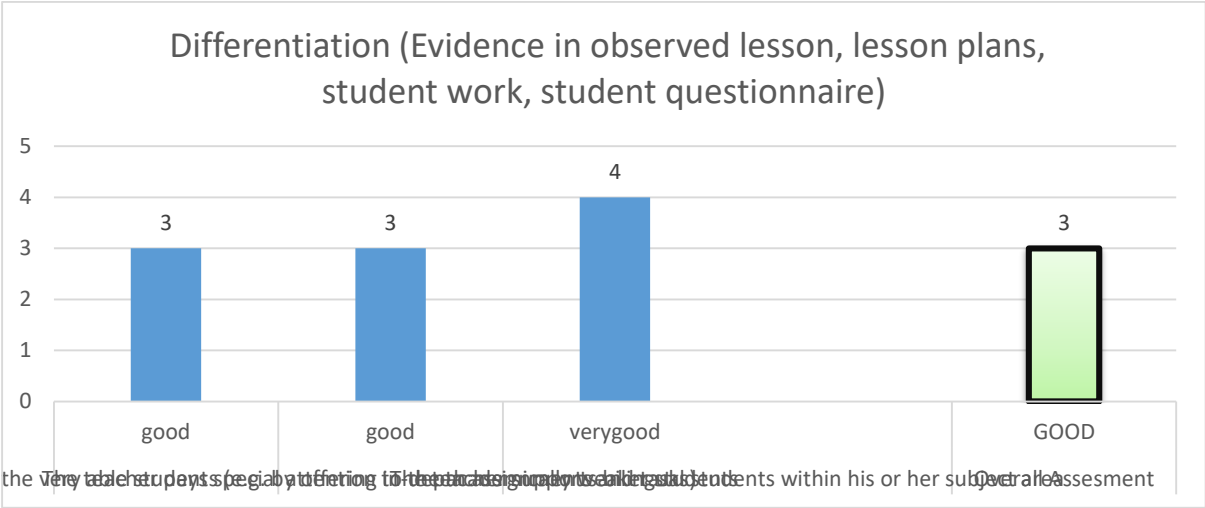
Some figures of teachers' evaluation forms analysis in Math department

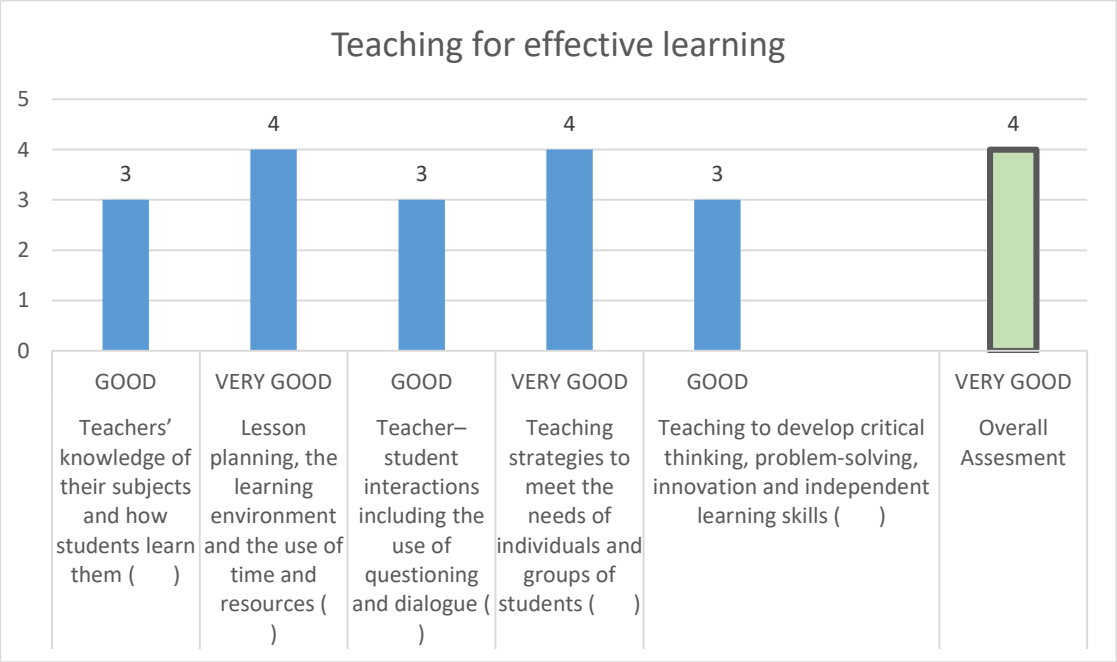

Teaching for effective learning
5
4
3
2
1
0
3
3
3
3
3
GOOD
GOOD
GOOD
GOOD
GOOD
Teachers' knowledge of their subjects and how students learn them ( )
Lesson planning, the learning environment and the use of time and resources ( )
Teacher–student interactions including the use of questioning and dialogue ( )
Teaching strategies to meet the needs of individuals and groups of students ( )
Teaching to develop critical thinking, problem-solving, innovation and independent learning skills ( )
Overall Assesment

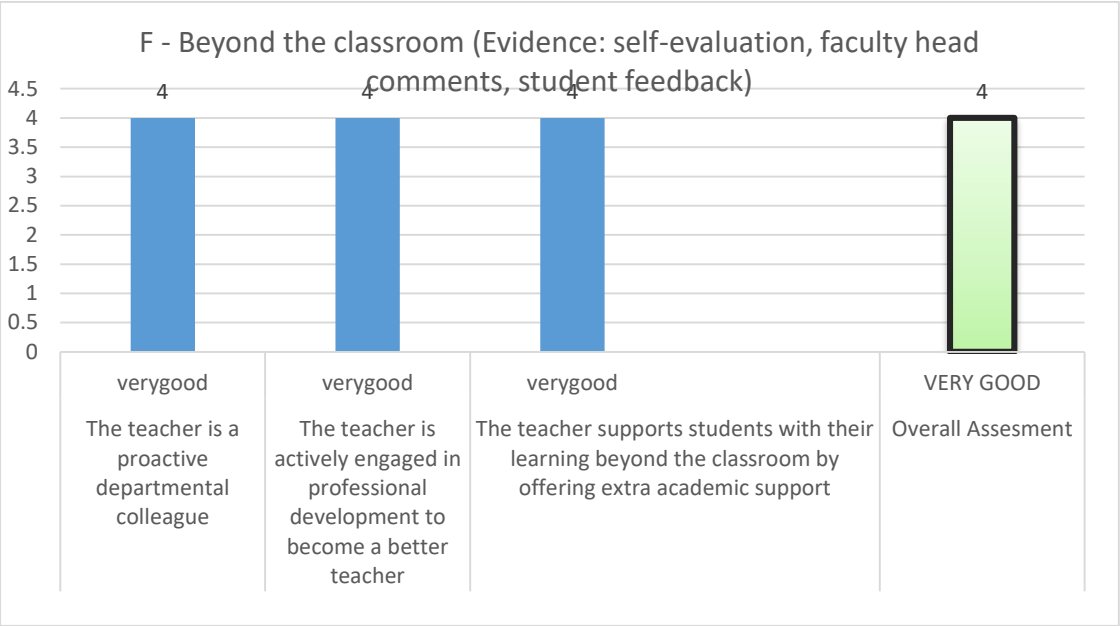

F - Beyond the classroom (Evidence: self-evaluation, faculty head comments, student feedback)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
2
2
4
3
acceptable
acceptable
verygood
GOOD
The teacher is a proactive departmental colleague
The teacher is actively engaged in professional development to become a better teacher
The teacher supports students with their learning beyond the classroom by offering extra academic support
Overall Assesment


Assessment (Evidence in marked student work, observed lesson, lesson plans, student questionnaire)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
4
3
3
3
verygood
good
good
GOOD
The teacher provides regular, clear and accurate formative feedback to students on their performance indicating what they need to do to improve. Cambridge assessment criteria are appropriately
The teacher provides regular, clear and accurate summative assessment
Students demonstrate understanding of the nature and expectations of Cambridge (moe) assessment in the subject
Overall Assesment


Preparation (Evidence lesson plans, student work, student questionnaire)
5
4
3
2
1
0
3
3
3
good
good
GOOD
materials in planning lessons


Differentiation (Evidence in observed lesson, lesson plans, student work, student questionnaire)
5
4
3
2
1
0
3
3
4
3
good
good
verygood
GOOD
the
students within his or her subject
Overall Assesment


Teaching for effective learning
5
4
3
2
1
0
3
4
3
4
3
4
GOOD
Teachers' knowledge of their subjects and how students learn them ( )
VERY GOOD
Lesson planning, the learning environment and the use of time and resources ( )
GOOD
Teacher–student interactions including the use of questioning and dialogue ( )
VERY GOOD
Teaching strategies to meet the needs of individuals and groups of students ( )
GOOD
Teaching to develop critical thinking, problem-solving, innovation and independent learning skills ( )
VERY GOOD
Overall Assesment



Analysis form per department to evaluate areas of strengths and areas of improvement during the PDT

قالب تحليل SWOT

Subject:
Name of Coordinator:

Strength القوة أشياء تقوم بها مدرستك بشكل جيد. جوانب الخدمة التي يتقنها الآباء والتلاميذ بشكل خاص. الخصائص و / أو الأنشطة الفريدة من نوعها في مدرستك. مزايا العمل في أو باستخدام مدرستك.	**Weakness** الضعف المجالات التي يمكن للمدرسة أن تعمل بها بشكل أكثر فعالية أو أشياء يمكن القيام بها بشكل أفضل في المدرسة. أشياء تفتقر إليها المدرسة من أجل التحسين .
• معظم المعلمات في رياض الأطفال والمرحلة الابتدائية بدأن في تغيير ممارساتهن التي أصبحت تتوافق مع التوقعات. • أصبحت دروس غالبية المعلمين تتجه أكثر فأكثر نحو الطالب كمحور العملية التعليمية • الأمثلة على التخطيط الدرسي الفعال اكثر وضوحاً عند بعض المعلمين • Teachers (most) in the KG and the Primary Stage are beginning to change their practice in line with expectations. • Some teachers are moving towards a more student-centred approach. • Examples of effective lesson planning are present among some teachers.	• لا يزال التخطيط الدرسي غير فعال عند بعض المعلمين – على القيادة الوسطى مراجعة خطط الدروس مع المعلمين قبل إعطاء الدروس. • لا يزال التدريس يعتمد إلى حد ما على الكتاب المدرسي ولا تزال الفرص لتقديم تعلم محوره الطالب محدودةإلى حد ما. • Lesson Planning does not seem to be effective with some teachers – middle leaders must review the lesson plans before lesson. • Teaching is to some reliant on the textbook and opportunities for student centered learning somewhat limited.
Opportunities الفرص الأوقات والظروف والأوضاع، والموارد، والمواقف، والعوامل الخارجية، والناس وما إلى ذلك مما يساعد المدرسة على تفعيل استخدام و الاستفادة من تحسين خدماتها.	**Threats** التهديدات العوامل الخارجية التي يمكن أن يكون لها تأثير على الحد من المدرسة و جودة خدماتها الآن أو في المستقبل.

Classroom observation

Date _____

Subject Title: _____

Term: _____

Name of Teacher: _____

Academic year: _____

Number of all students ( ) Number of Ss meeting Curriculum expectations ( ) below ( ) above ( )

A	**Overall learning environment created by the teacher** (Evidence in lesson observation)					
		1	2	3	4	Comments
1.	The teacher creates a safe and pleasant learning environment					
2.	The teacher clearly respects the students and listens to the voice of the learner					
3.	The overall atmosphere in class is positive and encouraging					
4.	The teacher has an open and approachable relationship with students					

B	**Instructional practice** (Evidence in lesson observation, lesson plans)					
		1	2	3	4	Comments
5.	The teacher leads the class in well-prepared activities					
6.	The objectives of the lesson are clear to the teacher and to the students					
7.	The lesson accurately develops student understanding of part of the Cambridge Curriculum (MOE)					
8.	The teacher has an open and approachable relationship with students					
9.	The teacher checks students' (previous) understanding					
10.	The teacher uses classroom materials and media when appropriate					
11.	The teacher delivers the lesson clearly in an effective style					

1

C	**Differentiation** (Evidence in observed lesson, lesson plans, student work, student questionnaire)					
		1	2	3	4	Comments
12.	The teacher pays special attention to the very able students (e.g. by offering in-depth assignments and tasks)					
13.	The teacher pays special attention to the academically weaker students					
14.	The teacher supports bilingual students within his or her subject area					

D	**Preparation** (Evidence lesson plans, student work, student questionnaire)					
		1	2	3	4	Comments
15.	The teacher is aware of Cambridge (moe) expectations, as published in the guide, and uses the Cambridge (moe) syllabuses and support materials in planning lessons					
16.	Lessons are planned that incorporate a variety of appropriate activities consistent with Cambridge expectations					

E	**Assessment** (Evidence in marked student work, observed lesson, lesson plans, student questionnaire)					
		1	2	3	4	Comments
17.	The teacher provides regular, clear and accurate formative feedback to students on their performance indicating what they need to do to improve. Cambridge assessment criteria are appropriately used					
18.	The teacher provides regular, clear and accurate summative assessment					
19.	Students demonstrate understanding of the nature and expectations of Cambridge (moe) assessment in the subject					

F	**Beyond the classroom** (Evidence: self-evaluation, faculty head comments, student feedback)					
		1	2	3	4	Comments
20.	The teacher is a proactive departmental colleague					
21.	The teacher is actively engaged in professional development to become a better teacher					
22.	The teacher supports students with their learning beyond the classroom by offering extra academic support					

2

Areas of strengths

Areas of improvements

Teacher signature:

Quality assurance department:

Head of department signature:

School vice principal:

School Principal:

3

Timing	Sources	Procedure	Implemented by	Goals	Competencies planned to be developed
January **HOD 11-1** **HOD13-1** **HOD 18-1**	Professional regulations and guidelines followed in the UAE	panel discussion development session	vice president Science coordinator Academic coordinator	-Introducing professional standards and regulations for teachers - Professional dealings with students, teachers and parents	values and responsibilities
January **HOD 12-1** **HOD13-1** **HOD 18-1**	Cambridge curriculum Past paper Platform /save my exam Xtream paper	panel discussion development session	vice president - Science coordinator Academic coordinator	- Knowledge of curriculum standards and teaching methods - Knowledge of students and learning methods	knowledge

January-February HOD/16-1 HOD/19-1 HOD/30-1 HOD/10-2 HOD/23-2	Teaching and learning strategies	panel discussion development session Class visits Exchange shares	vice president - science coordinator- Science teachers Academic coordinator	-Develop teaching practices using all available resources - Developing students' higher-order thinking skills Developing assessment competencies and skills	practices

Gmail

Hamada Alfaqawi <21001675@student.buid.ac.ae>

FW: Ethics form of Hamada for approval

Solomon Arulraj David <solomon.david@buid.ac.ae> Mon, Mar 27 at 4:14 PM
To: Hamada Alfaqawi <21001675@student.buid.ac.ae>

Hi Hamada

Your ethics form is approved.

Update me once the expert review on your instruments are done. And then, I will approve your data collection.

All the best

Solomon David

From: Dr. Godwin Francis [mailto:godwin.francis@buid.ac.ae]
Sent: Monday, March 27, 2023 10:16 AM
To: Solomon Arulraj David <solomon.david@buid.ac.ae>
Subject: Re: Ethics form of Hamada for approval

Dear Dr Solomon

Ethics application submitted has been approved by the Dean.

Regards

Godwin

On Sat, Mar 25, 2023 at 12:20 PM Solomon Arulraj David <solomon.david@buid.ac.ae> wrote:

> Hi Godwin
>
> Find attached the low risk ethics form of Hamada for approval.
>
> I am supervising him and this form therefore needs a review and approval from the dean.
>
> Best regards

Dr Solomon Arulraj David, M.A., M.Ed., MBA., PhD

Associate Professor of Education

T: +971 42791462

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PO Box: 345015, Dubai, UAE

Official BUiD Logo 1

Affiliate Lecturer, School of Education, University of Glasgow, UK

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Best Regards

Dr. Godwin Francis

Senior Faculty Administrator

Student Services Team

Marketing, Admissions and Student Services (MASS) Department

The British University in Dubai

1st & 2nd Floors, Blocks 10 & 11

Dubai International Academic City (DIAC)

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