“Investigation of Provision of Services to Students of Determination (as known in UAE) in Federal Higher Education Institutes in the UAE”

"التحقيق في تقديم الخدمات للطلاب ذوي الهمم في معاهد التعليم العالي الاتحادية في الإمارات العربية المتحدة"

by

FARHANA NADEEM

A thesis submitted in fulfilment
of the requirements for the degree of
DOCTOR OF PHILOSOPHY IN EDUCATION
at
The British University in Dubai

June 2020

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Professor Eman Gaad

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Excerpts from the book entitled, "Jacob's Journal -- My Journey Home" by Marla Murasko

"I experienced the disappointment, the anger, the joy, the overwhelming love for a child, and the fright of not knowing if I would be able to care for a child with special needs. I remember asking myself "why me", "why him?"

As I lay my head down on the pillow at night, exhausted from the day's events, I find myself saying thank you to God for blessing me with such an amazing child. As I look down at his peaceful face sleeping, I feel such an overwhelming feeling of love, joy and pride, and I find myself saying "I can't wait to wake and do it all again."

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ABSTRACT

The focus of this research is to present the challenges encountered by the Students of Determination (as known here in UAE)[1] and their current level of satisfaction in utilizing the provisions offered by the Federal University of the UAE, on its campuses in Dubai and Abu Dhabi. The study also shows the barriers encountered by the Faculty and the Specialists in the Accessibility Unit in providing the interventions needed by the Students of Determination.

The researcher used Bronfenbrenner's Bio-ecological framework and an explanatory sequential mixed method design for this research. The data collection was done between 2019 May and June 2020. Quantitative data were collected through surveys and qualitative data was gathered through semi-structured interviews.

The data was collected from Students of Determination themselves, Faculty members and Specialists of seven colleges of the Federal Higher Education University. Each campus has Student Accessibility Services Unit (SAS) offering support services to students with Specific Learning Disabilities, Visual Impairment, Hearing Impairment, Attention Deficit Hyperactive Disorder and Physical Impairment. In the analysis of quantitative data, t-test, was conducted to examine the differences between the mean score. Qualitative data from interviews and focus group was analyzed using thematic analysis.

From the findings of this research the following recommendations have been made. Training is needed for the Faculty to be equipped with strategies to cater to diverse needs. Students of Determination coming from government schools have a low level of English as the medium of instruction is Arabic. The Foundation Course is short to make the students proficient in accessing Higher Education courses in the English Language. The number of personnel in the Accessibility Unit needs to be increased. This study recognizes the need for clear Inclusive Education Policies in Higher Education to realize the goal of "*Education for All*". To improve the transition procedure from the Secondary to the Higher Education needs to be smooth. It is imperative for Students of Determination to be equipped with a positive self-concept, self-advocacy and social skills at the

[1] Internationally known as 'People with disabilities'. It is out of a more empathic and respectful stance of the UAE government that these persons are mandatorily referred to as 'People of Determination'.

secondary level. The findings of this research will be useful to the higher education institutes to improve the quality of inclusive practices.

"التحقيق في تقديم الخدمات للطلاب ذوي الهمم في معاهد التعليم العالي الاتحادية في الإمارات العربية المتحدة"

تركز هذه الدراسة على عرض التحديات التي يواجهها الطلاب ذوو الهمم ومستوى رضاهم الحالي في الاستفادة مما تقدمه الجامعة الاتحادية لدولة الإمارات العربية المتحدة ، في حرمها الجامعي في دبي وأبو ظبي. كما توضح الدراسة المعوقات التي واجهتها الكلية والمتخصص في وحدة الوصول في تقديم التدخلات التي يحتاجها طلاب التحديد.

استخدم الباحث الإطار الحيوي الإيكولوجي لشركة Bronfenbrenner وتصميمًا تتابعيًا مختلطًا متسلسلًا لهذا البحث. تم جمع البيانات بين مايو 2019 ويونيو 2020. تم جمع البيانات الكمية من خلال المسوحات وجمع البيانات النوعية من خلال المقابلات شبه المنظمة ومناقشات مجموعات التركيز.

تم جمع البيانات من طلاب التصميم وأعضاء هيئة التدريس والمتخصصين في سبع كليات من جامعة التعليم العالي الاتحادية. يحتوي كل حرم جامعي على وحدة خدمات متاحة للطلاب (SAS) التي تقدم خدمات الدعم للطلاب الذين يعانون من صعوبات تعلم محددة ، وضعف البصر ، وضعف السمع ، والضعف جسدي واضطراب الانتباه المفرط. في تحليل البيانات الكمية ، تم إجراء اختبار t لفحص الاختلافات بين متوسط الدرجة. تم تحليل البيانات النوعية من المقابلات ومجموعة التركيز باستخدام التحليل الموضوعي.

.من نتائج هذا البحث هي التوصيات التالية

هناك حاجة إلى تدريب الكلية لتزويدها بالاستراتيجيات لتلبية الاحتياجات المتنوعة.

الطلاب ذوي الهمم القادمين من المدارس الحكومية لديهم مستوى منخفض في اللغة الإنجليزية حيث أن لغة التدريس هي اللغة العربية.

الدورة التأسيسية قصيرة لجعل الطلاب بارعين في الوصول إلى دورات التعليم العالي في اللغة الإنجليزية.

يجب زيادة عدد الموظفين في وحدة إمكانية الوصول.

تدرك هذه الدراسة الحاجة إلى سياسات الدمج الواضحة في لتعليم العالي لتحقيق هدف "التعليم للجميع".

يجب أن تكون عملية الانتقال من التعليم الثانوي إلى التعليم العالي سلسة.

من الضروري أن يكون الطلاب ذوو الهمم مجهزين بمفهوم ذاتي إيجابي و دعم ذاتي ومهارات اجتماعية في المستوى الثانوي.

ستكون نتائج هذا البحث مفيدة لمعاهد التعليم العالي لتحسين جودة الممارسات الشاملة.

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ACRONYMS

AAC	Augmentative and alternative communication
ADA	Americans with Disabilities Act
ADEC	Abu Dhabi Education Council
APR	Annual Performance Report
AT	Assistive Technologies
CAA	Commission for Academic Accreditation
CERT	Center of Excellence for Applied Research and Training
CILs	Centers for Independent Living
CRIPA	Civil Rights Institutionalized Persons Act
CRPD	Convention on the Rights of Persons with Disabilities
DDLO	Unital Disability Liaison Officer
DDDM	Disability-Diversity (Dis) Connect Model
DDO	Disability Discrimination Ordinance
DDS	Dubai Disability Sustainable Goal
DEC	Dubai Education Council

DEP	Disability Education Policy
DIAC	Dubai International Academic City
DMU	De Montfort University
DRFT	Disability Rights Task Force
DSSLG	People of Determination Students Sector Leadership Group
EARN	Employer Assistance and Resource Network
ED	Education Department
EFA	Education for All
FAPE	Free Appropriate Education
FOTIM	Foundation of University Institutions of the Northern Metropolis
GAO	Government Accountability Office
GED	General Education Development
HAAD	Health Authority Abu Dhabi
HCT	Higher Colleges of Technology
HE	Higher Education
HEI	Higher Education Institution
HEP	Higher Education Provider

HKCEE Hong Kong Certificate of Education Examination

IDEA Individualized Disabilities Education Act

IEP Individualized Education Plans

ILPs Individualized Learning Plans

JAN Job Accommodation Network

JAWS Job Access With Speech

KHDA Knowledge Human Development Authority

LEA Local Education Agency

LEAD National Center on Leadership for the Employment and Economic Advancement of People with Disabilities

LLS Library and Learning Services

LRE Least Restrictive Environment

LTA Learning Teaching and Assessment

MIST Masdar Institute of Science and Technology

MOHEASR Ministry of Higher Education and Scientific Research

NCHIE National Committee of Higher Education

NCLB No Child Left Behind

NCSPES National Center for the Study of Postsecondary Education Supports

NCWD/Youth National Collaborative on Workforce and Disability for Youth

NSF: National Science Foundation

NSTTAC National Secondary Transitions Technical Assistance Center

NYIT New York Institute of Technology

OSEP Office Special Education Programs

PALS Peer Assisted Learning & Support

QAA Quality Assurance Agency

SEA State Education Agency

SENDA Special Educational Needs and Disability Act

SPLO Secondary Post Learning Option

SPP State Performance Plan

SSA Social Security Administration

STEM Science, Technology, Engineering, and Mathematics

STEP Student Transitional Educational Planning

SWID Students with Intellectual Disabilities

TVET Technical and Vocational Education and Training

UAE United Arab Emirates

UDL	Universal Design for Learning
UOWD	University of Wollongong, Dubai
WIOA	Workforce Innovation Opportunities Act
WRP	Workforce Recruitment Program
YTD	Youth Transition Related Demonstration

DEFINITION OF TERMS

Provision-The method is designed to provide custom support, usually using the Institute's expertise in Mainstream settings. (Merriam 2020)

Barrier - A barrier to learning is any obstacle that keeps people from learning effectively. (Webster New World College Dictionary)

Student Accessibility Unit - A support unit designed to help Students of Determination access university facilities or curriculum. The SAS team collaborates with students facing academic challenges to offer them advice and training for skills and academic development.

Specific Learning Disability- It is a disorder that affects a student's conceptual, auditory, communicative and mathematical abilities. Students with Specific Learning Disabilities may experience difficulties in reading, writing, or mathematics. (IDEA 2002).

Down syndrome - According to Cissik, 2012, Down syndrome affects 1 in 800 newborns. The majority of individuals with this type of condition have an additional duplicate of chromosome 21, which comes about within 47 chromosomes rather than standard 46. In another condition of Down syndrome (trisomy 21), a person having a portion of chromosome 21 found on other chromosomes or having a blend of cells with 46 and 47 chromosomes.

Hearing Impairment- "*An impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but is not included under the definition of 'deafness*''. If it is less than 90 decibels it is classified as a hearing impairment. (IDEA 2002)

Visual Impairment- "A*n impairment in vision that even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness*". (IDEA 2002)

Physical disability- A physical disorder restricts a person's physical or coordinated movement. Such people may have difficulties in accomplishing daily life functions.

Attention Deficit Hyperactive Disorder (ADHD) - ADHD includes difficulty concentrating and paying attention and difficulty controlling behavior and hyperactivity. (IDEA 2002)

Assistive Technology- Technology used by People of Determination to perform tasks that may be otherwise challenging. Examples of Assistive technologies include mobile devices such as walkers, wheelchairs, hardware, software to aid in accessing computers or other information devices. (Edyburn, 2000).

Accommodation: In inclusive education, it refers to providing access to students with diverse abilities and disabilities to general education. These are alterations in how a student access information. It provides pupil equal opportunity and access to learning to express what he/ she knows and can accomplish. (Gregg, 2012).

Modification: It refers to an alteration in the course content by reducing the course load to suit the abilities of specific students. These alterations allow a student to attend a meaningful and

productive school or university experience alongside other students in the classroom. The modification consists of changes to the curriculum concerning instructional, content, and learning outcomes. The learning goal is altered, as are the grading standards.

Simple random sampling: This is one of the best probability sampling techniques. Furthermore, it is efficient, time saving and is economical. It is a reliable method of obtaining information in cases where randomly selection is employed. It is equally probable for each member of the group to be chosen as a part of a sample. (Neuman, 2009).

Purposive sampling: In this method researchers criteria for selection of particular sample is for a particular purpose. Purposive samples are formed at the discretion of the researcher. The purpose of the study is to obtain a deeper understanding of a specific type of population. (Neuman, 2009).

Snowball sampling: Snowball sampling is a method that researchers use when obtaining cooperation from sample population becomes difficult. In such situation, using the snowball technique, researchers can track a few willing categories to interview and which can influence others to follow suit (Glesne and Peshkin, 1992).

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Universities are willing to participate in public forums regarding special needs. They provide administrative and academic services and social facilities to assist students in learning, research, participation and field training programs at different institutions around the country. 255
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CHAPTER 1: AN OVERVIEW

1.1 Introduction:

In the global effort to recognize equal opportunities for those with disabilities, much has been researched and written about inclusive education, and therefore, in principle, much has been achieved in eliminating discrimination against People with Disabilities. (Disability and Development Report, 2019). Nevertheless, society still does not fully recognize People with Disabilities as equals and they are not provided equal opportunities within society.

Perhaps this state of affairs stems from the common understanding of the term disability and its definition. Rather than regarding disability as a part of diversity and individual differences, People with Disabilities are still regarded as lacking abilities and having abnormalities. Thus, to fully provide equality for People with Disabilities, all-encompassing reform from definition to the practicalities of providing equal opportunities and services needs to happen (Sara Goering, 2015). Such reform must begin with empathy, lead to changes in attitude, so as to focus on a person's potential rather than inability and be transformative to the lives of individuals and communities.

The initial step towards inclusion was with the integration of special needs students in mainstream classes i.e. the education of the aforementioned group in the same setting as regular students. The debate about inclusion cannot stop at integration or merely occupying the same spaces but is concerned with the equity, wellbeing, dignity, autonomy, and quality contribution to society for all of its members and the acceptance of their varying attributes together with their ethnicity, language, gender, and socio-economic status. It is an acceptance of multiple, diverse and complex identities.

Nowhere is the need for reform required more than in education. Globally, inclusive education practice at the primary, secondary, and university levels has resulted in a more empathetic populace, as well as an increase in confidence and consequential achievement for those who once felt ignored, shunned, isolated, and stigmatized. (Elke Emmers, Dieter Baeyens and Katja Petry 2020). However, inclusivity in education has not gone far enough. (Ryan and Rottmann 2007).

Inclusion is concerned with offering adequate responses to the wide spectrum of learning needs in formal and non-formal educational settings, according to a UNESCO survey. Rather than being a side issue of how students can be incorporated into conventional education, inclusive education is a strategy for transforming educational structures and other learning environments to accommodate the diversity of students. Its goal is to help teachers and students feel at ease with diversity and see it as a source of challenge and enrichment to the learning atmosphere rather than a problem. (UNESCO, 2005).

The approach needs to address both the complexities as well as the practicalities of such a provision, and strong leadership needs to be in place to effect a complete implementation of policies, practices, and procedures that address the needs of all students. (Ashikali, Groeneveld and Kuipers, 2020).

Globally, research indicates that many educational institutions, especially those at the university level, have faced immense challenges in the implementation of inclusive policies. (Morina, Cortes and Melero, 2014). More importantly, the results indicate that such efforts at implementation need to be more comprehensive. Specifically, rather than implementing inclusive policies piecemeal, efforts need to be more cohesive and far-reaching and address all aspects of inclusivity and student needs, including, but not limited to cultivating a culture of inclusion,

modifying facilities, developing assistive technologies, making curriculum modifications, and providing specific training for Faculty (Janiga and Costenbader, 2002, Trammell, 2005).

Within the UAE, the challenges seen globally are even more evident because the move towards inclusive education, particularly at the higher education level, is still in its infancy. Although inclusion in education is compulsory in the UAE, many primary and secondary schools still struggle with implementing policies and practices that fully support children with disabilities. At the university level, provisions for Students of Determination (Students with Disabilities) are at a rudimentary, experimental stage (Gaad 2013). Many universities do not have fully developed policies for inclusion, nor do they have the resources or practices to support inclusion (Durham, 2004, Gilson, 2010). At best, some universities negotiate with individual students to effect teaching modifications or make exam concessions.

UAE is making progress towards inclusiveness across the education sector but at the higher education level only experimental, preliminary beginnings have been made. It is imperative that more research be done to ascertain the current state of implementation in higher education institutions, and as well to determine firm policies, practices, procedures and guidelines that need to be in place to support a comprehensive implementation of the equitable and holistic development of all individuals. Thus, the purpose of this study is to present the obstacles faced by the Students of Determination at a particular university and their current initial level of satisfaction in utilizing the provisions offered by the Federal University of the UAE, on its campuses in Dubai and Abu Dhabi. The study also shows the barriers encountered by the Faculty and the Specialists in the Accessibility Unit and hence the challenges in providing the interventions needed by the Students of Determination.

1.2 Definition of Disability:

In order to assess the present situation, we need to begin with a prevalent definition of disability, how it is perceived by those who have it, by society and by support groups, and those in the field of education. It is a universal human condition and is still generally regarded as a social drawback, a personal or social limitation, impairment, dysfunction, and abnormality, and hence it negatively reinforces the individual's own view of his person. This is due to cultural biases and emotional ignorance that continues to persist in communities. Another similar definition of the term "disabled person" was stated as "*any person unable to ensure by himself or herself, wholly or partly, the necessities of a normal individual and/or social life, as a result of a deficiency, either congenital or not, in his or her physical or mental capabilities*." The notion was disputed by People with Disability activists and academics. In the Convention for the Rights of People of Determination 2006, it was affirmed: *"Labeling affects people when it limits their options for action and changes their identity."* The Convention did not offer a specific definition of disability but recognized that disability is an evolving problem. (CRPD, 2008)

Educationists prefer to uphold the social model of disability. The humane approach to disability would be to regard these as 'diversities and individual differences. ICF (2001) defined it as "*the dynamic interaction between health conditions, environment and (resulting from) personal factors*."

A more pertinent and up to date definition of disability that has been adopted is: "*Disability is the result of an individual's interaction with society if barriers for participation for that person are not removed. It is not an attribute of the person.*" (Friend and Burseck 2002,

Mittler 2000). The latter definition empowers and encourages confidence as well as the spirit of striving. The UAE Law No. (2) of 2014 describes a People with Disabilities as "*A person suffering from a long-term physical, mental, or sensory deficiency or impairment that may hinder his full and effective participation in the society on an equal footing with others.*"

According to the International Classification of Functioning or ICF (2001), the categories of disability include various physical and mental impairments that can prevent or reduce a person's ability to carry out their daily activities. The broad categories include the following eight main types of disability, and these have further sub-categories.

Physical/Mobility

Spinal Cord Injuries

Head Injuries

Vision Impairment

Hearing Impairment

Learning/ Cognitive

Emotional

Invisible

The situation is complex for educators depending upon the level of the disability-minor, moderate or severe. Some of the provisions and barriers in education are common and similar across disabilities, like being provided with the following day's course sheets and materials in advance and being granted extra time for exams and social stigma. However, many areas in which provisions for a particular disability are distinctly different, and the barriers are similarly experienced differently.

For instance, visual impairment may be partial or total, and the devices needed for hearing impairment are distinctly different from those required for the former types. To adequately provide for the various types of disabilities is a daunting task and requires administrators and educators to know diverse disabilities.

WHO, in the year 2001, formulated the ICF (The International Classification of Functioning, Disability, and Health). Two important concepts that it deals with are performance and capacity. Performance refers to an individual's level of functioning / the ability to do daily activities and participation in life situations in the presence of a disability, in their actual environmental context, without any assistance (of other people, devices, or environmental modification). It sheds light on the limitations and restrictions placed on the person in that environment.

If a person with a particular health condition lives in an atmosphere marked by obstacles, their performance will be limited; however, if they live in a facilitating environment, their performance will be enhanced. According to WHO, the ICF uses a "biopsychosocial" approach that incorporates biological, human, and social perspectives on health to achieve a synthesis between success and ability. This is a step forward from the WHO's medical model of disability, which saw disability as solely a personal issue exacerbated by a medical condition (ICF Version 2.1a, Clinician Form. 2003).

1.3 The Meaning of Inclusion:

We also need to be clear at the outset about the meaning of the term ‘inclusion’. It is defined as a system of education for all in which there is no discrimination on the grounds of differences-*“social, physical, intellectual, emotional, racial, and linguistic”*, or other conditions

(Hodkinson, 2010). It is a system in which pedagogy, care, and assessment are delivered to engage students in learning that is meaningful, relevant, and accessible to all. Reform needs to be all-encompassing, beginning with empathy by all and leading to attitudinal changes by fostering the culture of 'inclusion' at all levels to help realize the potential of all students (Hodikinson, 2011). The emphasis in inclusive education is on holistic development- moral, spiritual, and academic, recognizing the strengths and weaknesses of individuals, providing equal opportunities for all, without bias regarding race, color, language, social class or ability (UNESCO, 2017) stressed on the need for optimum quality of social life and equal opportunities for academics and in employment.

In the text of the thesis the terms Students with disabilities, Student of Determination and Special Need Students refer to the same category of individuals and are appropriately used according to the context.

1.4 Pros and Cons and Areas of Improvement

On a practical note, aspirations of social justice are commendable but need awareness about the complexities involved in the realistic achievement of the goals of 'inclusive' education. This is due to the many variables that need to be attended to. It needs to be recognized that the phenomenon of 'disability' is not a singular one. It is a blanket term for multiple states needing multiple unique solutions on an individual level. The path to success is a long one and needs patient experimentation and sincere dedication on the part of all of the participants in the process, as well as the recognition of and the implementation of as many policies and services as possible that need to be provided, within the capacity of support groups.

There is also a dearth of statistical information about the number of Students with Disabilities at different levels of education, and about the follow-up information about their achievements, their transfer on to the next level and the state of employment. There needs to be a database with up-to-date statistical information to aid future practice.

Strong leadership is needed for policies to be improvised and implemented gradually and thoroughly. The literature reflects the immense challenges faced in the implementation of these policies, to the point that some have even expressed doubts about the ability of higher education institutions to deliver quality and fair educational opportunities for Students of Determination (Moriña, Cortés and Melero, 2013). The frustration expressed is understandable as the case studies that have been done reveal some positive but also negative data. What is often ignored is that improvement needs to be piecemeal, but on all fronts, be it in cultivating the culture of 'inclusion', developing assistive technologies, curriculum modifications and, specific training for Faculty and that success cannot be immediate, specifically in reference to the UAE. The movement is still in its experimental stages, and more so is this true at the Higher Education Level. However, that the problem is urgent, is borne out by the fact that each succeeding year sees a phenomenal rise in the number of Students of Determination worldwide (Hadjikakou, 2007). The number of People of Determination has risen to a billion on the international level, which makes up 15% of the world's population (WHO, 2018). Furthermore, Persons with Determination were less likely to complete Higher Education (Seidman, 2005), and obtaining and sustaining work has been a challenging task for them. (Lauer & Houtenville, 2017)

Possibly, a question that needs to be raised is whether the policies of 'inclusion' can be applied wholesale, right across the board for those with the severest disabilities, that do need specific attention and which in a regular setting might be difficult to achieve and may also affect

general progress. This is what has been partially referred to by (Calculator 2009) regarding students with grave intellectual disabilities and accompanying difficult behaviors, which may also cover communication problems. They require comparatively high levels of support from family, educators, related service providers, classmates, and others, to be efficiently included in general education classrooms, alongside meeting the needs of daily living and enjoying the finest possible quality of life. Those with the severest disabilities need to have in addition to general education tailored down versions of the curriculum to meet individual needs, and some of them will still need specific help in a special setting. This is a vulnerable group for which attitudinal reform should play a major role in preventing any discrimination. Since one of the biggest hurdles they face is the perceptions people hold regarding them, hence strong steps need to be taken in changing the perceptions people have with regards to such individuals of 'determination.'

To sum up, then the research provides qualitative and quantitative data about the practice of inclusion at the Higher Education Level in the selected institutions giving us an insight and a specimen of its practice at this level in the UAE.

1.5 The purpose of the Study

The purpose of this study is to assess the reality of the situation, to consider the challenges being faced, and through comparison with other institutions internationally, to recommend strategies which have worked elsewhere.

The research attempts to provide information about general efforts at a preliminary level made in the UAE towards making education inclusive at the Higher Education Level, through a survey of the provisions offered, and also the barriers faced, at the Federal University of the UAE (Dubai and Abu Dhabi campuses).

This study provides information about the aforementioned issues regarding policies adopted and ensuing practice. It provides clarity regarding the provisions, the Support System and the feedback from all the groups involved- Students of Determination, their peers, lecturers, the Support Team, etc., regarding the availability or the lack of accessibility, the presence or absence of reasonable accommodations or insufficient attention to the aforementioned, the challenges and barriers and provides information to help to review policies and practices and steps towards a fuller implementation of inclusive education.

There seems to be a gap at present between the close-knit environments of schools and the wider community at the university level, where the scope of academic needs is comparatively broader. This makes the transition for special needs students difficult and scary. These problems are mentioned, and solutions to these problems are also suggested. The study ends with recommendations for improved practice in university education.

1.6. Research Questions

The study was done in the seven colleges (departments) of a single Federal university in the UAE. The data were collected through interviews, observations, and questionnaires.

The following are the Research Questions that the study intended to answer;

1. What provisions are granted by the University in meeting the needs of Students of Determination?
2. What are the barriers encountered by the Students of Determination in using these provisions in the University?
3. What are the barriers encountered by the Faculty and Accessibility Staff in providing the provisions to the Students of Determination at the University?

4. What strategies can be recommended to improve the University's inclusive status?

Drawing on the oral and written responses of all stakeholders and my qualitative and quantitative analysis, the level of satisfaction of all participants is surmised as follows. This particular university provides some excellent services for the students of Determination, which is why most of them have applied to this university. The majority of the students indicated satisfaction with the services they received, as it was much better than what they had received at their school. However, some differences in satisfaction levels were apparent across disability categories. Most students with physical disabilities expressed higher satisfaction than the students with learning and/or visual disabilities. Although a significant number of students with physical disabilities were happy with the spacious buildings and indicated satisfaction with each physical accessibility area, they did complain about the extended distance between the auditorium and classrooms and the accessibility unit. Students with attention deficit disorder generally expressed satisfaction with the services and accommodations provided by the specialist and faculty. However, they were dissatisfied with the non-availability of separate writing facilities during exams, especially for those with a severe attention disorder. The students with visual impairment were satisfied with the understanding and cooperation from specialists, faculty, staff, lots of adaptive aids, and other resources, but were not satisfied with academic material provided, as the faculty was not able to provide them with content in braille format, which is easier to use for them.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews some of the extensive research that has been carried out in the field of 'inclusive' education; the detailed legislation formulated regarding it, the historical context to it, and the benefits that have accrued from the inclusive education model, where it has faltered and also provides some examples of good practice which can serve as guidelines for the future.

It needs to be reiterated here, as mentioned earlier in the introduction, that it is a recognized fact, proven by many research results, that exclusion or discrimination has a negative impact, not merely on the lives of individual people but also on the fabric of society. It is the breeding ground for regarding others as lesser individuals who then become targets of contempt and violence, and places barriers on sections of populations, preventing them from the realization of their full potential and their social elevation, as well as depriving them from empathy and humane feelings. As Beauuchamp points out,*"Those with power can overrule the interests of those who lack power*." (Beauchamp-Pryor, 2008) resulting *in "domination by powerful groups to market their own interests and thereby affect social policy"* (Albrecht and Levy, 1981). Some of the statistical studies prove the correctness of the aforementioned statement. Youth with disabilities are less likely to start higher education (63%) than their peers without disabilities (72%). They are also less likely to continue and take a longer time to finish their degrees once enrolled. These were similarly the conclusions of Zaft, Hart, and Zimbrich (2004). They stated that such students usually dropout and hence are disadvantaged in the job market. Less than 40% of young adults with ID (Intellectual Disabilities) got into higher education compared to 80% of those without disabilities. Enrolment and graduation rates are low for those with ID. People with ID who have

taken part in university education have improved post-school scores, have had more significant business levels, expanded wages, and broadened interpersonal relations than peers who didn't have higher education (Hart, 2006).

'Inclusion' cannot merely be judged by an increase in enrolment numbers, which is a fact truer about schools than it is about higher education institutions. It must involve across the board changes in conjunction with formulated legislation. Nevertheless, the number of postsecondary Students with Disabilities is on the rise (Horn, Peter, and Rooney, 2002). Enrolment is only the first step in the process of inclusion. Students with Disabilities continue to encounter various obstacles in gaining access to higher education courses (Hadjikakou and Hartas, 2008; Tinklin, Riddell, and Wilson, 2004). This is illustrated by the case studies done even in developed countries like the UK, the USA, and Canada. There is definitely an increase in enrolments at the higher education level which has led to successes for Students with Disabilities in the education and employment sector, improving their quality of life, yet this progress is not uniform on an international level.

2.2 Global Historical Context of Disability

In Western societies, since the Greco-Roman times, Disability Studies reveal a dark, gruesome past. From this situation, one can rightly deduce that in other places where ignorance abounds today, the inhumane practices described below, must be parallel or even worse.

Aristotle, (384-322BC) "*The Father of Western Philosophy*," wrote in Politics: "*As to the exposure and rearing of children, let there be a law that no deformed child shall live*." Plato advised to put them away "*in some mysterious unknown places*." Accordingly, People with Disabilities in those societies were killed or abandoned in the forests. (Goldberg and Lippmann,

1924) In the Roman People with Disabilities served as jesters, and this practice later appeared in Europe in the form of 'idiot cages' to amuse townspeople.

However, as time went on, religion brought in some gentleness towards disabled persons. When we look at the religious texts, we see that Jesus (6 BC-30 CE) was gentle and compassionate towards Persons with Disability and these were his teachings in the New Testament: "*For he who is least among you all is greatest.*"(Luke 9:46). The emphasis is on humility and kind demeanor. By the 4th century AD, with the spread of Christianity, humane practices were meted out to People with Disabilities, and they were not stigmatized. (Baker et al. 1953) In later times, however, People with Disabilities were regarded as subhuman, animal-like, and were confined to leper colonies and church shelters. They were thought to be a 'curse' and objects of 'shame' (Uppman, 1972, web. Stanford.ed/History of Leprosy) and had to ring a bell if they were out. Leprosy disappeared around 1100 CE and 1300 CE and the leper colonies were now used as institutions to house People with Disabilities. These colonies were known as the 'Cities of the Damned.' The majority of these residential homes had primary care or none, and inmates survived by begging. Today these kinds of institutions exist in remote parts in a few countries of the world.

During the Renaissance (1300-1600 CE), People of Determination were subjected to infanticide. In the infamous period of the Spanish Inquisition (1478-1834), they were drowned and burnt as they were stereotyped to be criminals and possessed with evil spirits.

Similarly, Martin Luther and John Calvin, who started the Protestant Movement in the 16th century, in opposition to Roman Catholicism, believed that People with Disabilities possessed evil spirits. Hence, they subjected them to physical and mental pain to exorcise them. (Thomas, 1957).

In the 1800s, frontal lobotomies were performed to cure behavioral problems, and the 'incurable' were locked up or chained to their beds or were euthanized. Those who ventured out

were fined. This happened even in the US as they did not have sufficient staff to look after the inmates (Chicago Municipal Code). People with Disabilities had to go through involuntary sterilization not to reproduce their 'evil habits' and 'destroy the gene pool.'

People with Disabilities were used as cheap labor in times of need as during the Industrial Revolution (1760-1840) and the two World Wars, when there was scarcity of factory hands, but they were kept segregated from others.

In 1798 Thomas Malthus, in his "*Essay on the Principles of Population,"* argued that population would outstrip food supply and, hence, stressed on the need to lower the birth rate by sexual restraint and identify '*defective*' people and eliminate them. Similarly, in the 19th-century, upholders of Social Darwinism against state aid to the indigent and People of Determination were regarded as '*unfit*' and that they would obstruct the process of *"natural selection of the best and the 'fittest.*" (Hobbs, 1973)

A similar sentiment was expressed in the early 20th century in England by John Huxley (2012), the Chairman of the Eugenics Society, when he wrote: "*Every defective is an extra body for the nation to feed and clothe but produce little or nothing in return*." After World War I, because of the injured and maimed soldiers returning home, Rehabilitation Centers were opened for the soldiers, and some employers took on People with Disabilities as workers.

In the late nineteenth century, Helen Keller (1880-1968) from America who was visually impaired and hearing impaired from the age of 19 months, with the help of her teacher Anne Sullivan, acquired the skills of reading, speaking and writing, and persevered to gain a Bachelor's degree from Radcliffe College in 1904. She was an author, political activist, and lecturer and acquired five languages. Champions like her gave hope to People with Disabilities and those who supported reforms for their cause.

During the Great Depression (1929-1939), faced with economic woes, the state of institutions for People of Determination worsened, and all those who were different were regarded with suspicion.

In Nazi Germany, due to economic fears during the Holocaust (1933-1945), many of the victims were People with Disabilities. Two hundred thousand of them were starved, gassed, and euthanized by lethal injection.

Before the 1960s in Europe, children with disabilities were still being separated from their parents. They were put in institutions, from where they could be used as guinea pigs by doctors and be subjected to sexual abuse. A Danish director visiting an institution in Falif in 1960 reported: "*In our country, we would not be allowed to treat cattle like that.*"

Voices were raised by intellectuals and social reformers, from time to time, against sub-human practices, but these were too few, and the general public had a culture of indifference. For instance, the French psychiatrist, Philippe Pinel (1745-1826) regarded People with Disabilities as diseased and not sinful. He removed the chains from their hospital beds and started a more humane system of custody and care for psychiatric patients; Dorothea Dix (1802-1887) a Superintendent of Army Nurses, passionately appealed for reforms in the conditions of People with Disabilities and as a result, the first mental hospitals were established in America; Edward Seguin (1812-1880) believed motor-sensory training and positive reinforcement modeling could help People of Determination. (Disability History Exhibit Panel Content)

The state of people with disabilities in the twentieth century was summarized by Rhonda Neuhaus, Cindy Smith and Molly Burgdorf on the American Bar Association web site. They wrote: "*the laws of the United States devalued persons with disabilities as society as a whole viewed such persons as a group of people to be pitied, ridiculed, rejected, and feared, or as objects*

of fascination. Persons with disabilities were seen as objects of charity or welfare or as needing to be subjected to medical treatment or cure."

As a consequence of activists' efforts in 1975, IDEA (Individual Disabilities Education Act) (Alquraini and Gut, 2012; Goodman et.al. and Kitta, 2011; Obiakor, Harris, 2012) was passed in the United States. It supported (LRE) or Least Restrictive Environment and (FAPE) Free Appropriate Education and Evaluation to be provided at no cost to People with Disabilities.

In 1980 CRIPA (Civil Rights of Institutionalized Persons Act) was passed to enforce the existing legislation, resulting from IDEA. (Alquraini and Gut, 2012; Goodman et.al. and Kitta, 2011; Obiakor, Harris, 2012) Still, it failed to do so, even eight years later, because no proper guidelines and conciliations were made out of court.

In 1984 the Voting Accessibility Act was passed. It granted voting rights to the People with Disabilities by providing accessibility for registration and voting aids for them. There was a concerted effort in 1990 by the Physically Impaired people to raise awareness and procure their fundamental rights. They took part in what is known as the *'Capitol Crawl'* They came with their crutches and wheelchairs and crawled up the 100 steps of the Capitol Building, chanting 'ADA (Americans with Disabilities Act) now' and *'Vote now*.' Those who supported them came out with signs and yelled encouragement. Jennifer Keelan, a second grader with cerebral palsy, videotaped, pulling herself up the steps with her bare hands and arms, shouting, *"I'll take all night if I have to."* (Esshaki and Tiffany, 2015)

The ADA was the first comprehensive legislation that declared discrimination against persons with disabilities illegal in employment and public services, imposed accessibility requirements and provided reasonable accommodations. Those who opposed it regarded it as an expensive headache and that it would not necessarily improve the lot of the People with

Disabilities. (Doherty Brian, 1995). George W. Bush passed the law. He declared, "*Let the shameful wall of exclusion finally come down tumbling*' and that the purpose of the law is to *'ensure that people with disabilities are given the primary needs for which they have worked hard- independence, freedom of choice, control of their lives, the opportunity to blend fully and equally with the rich mosaic of the American mainstream*." (White House, Office of the Press Secretary) This law was later amended in 2008 as ADAA to include a broader and more specific definition of disability. In 2015, improvements had been made in accessibilities, the built environment, and in understanding disabilities, but there were still disparities in employment opportunities, earned income, etc.

NCLB (No Child Left Behind) was promulgated in 2001 and passed into law in 2002. The emphasis of this law was on raising the levels of achievements of the students through standardized tests.

2.3 The Evolution of Global Legislation on Inclusive Education

The global reform movement in education in our present times began with the 1948 Article 26, resulting from the Convention on *"Everyone has the Right to Education*." Then in the 1960s, during the era of Civil Rights Movements, UNESCO held the Convention against Discrimination in Education.

To prohibit discrimination and provide equal opportunities, Article 13 of the International Convention on Economic, Social, and Cultural Rights 1966 comprehensively covered education rights. Section 1 stated the following;

"*The States Parties to the present Covenant perceive the privilege of everybody to the education system. They concur that knowledge will be coordinated to the full advancement of*

human character and the feeling of its nobility and will fortify the regard for human rights and significant opportunities. They further concur that training will empower all people to adequately take an interest in a free society, advance resistance and kinship among all countries for peace".

The 1975 UN Declaration of Rights of People with Disabilities followed the above convention. It recognized their unique needs and rights to medical care, welfare, rehabilitation, education, and vocational training. Disability Persons Recommendation 1983 (No.168) required implementation by States and periodic review of national policy.

The celebrated Salamanca Statement was formulated next in 1994 as a consequence of the Conference on Special Education with its emphasis on inclusion. It stated: "*Legislation should recognize the principle of equality of opportunity for children, youth and adults with disabilities in primary, secondary and university education, carried out in so far as possible in integrated settings*." Schools were to be "*institutions that include everybody, celebrate differences, support learning, and respond to individual needs."* (Salamanca Statement, 1994). The policy aimed to develop projects and encourage the exchange of good practices between countries, by ensuring the support of all stakeholders- the administration and teaching staff, organizations of people with disabilities, people with disability themselves, and their parents. The statement re-emphasized the need to do away with discrimination, to lead to the creation of welcoming communities. It provided a framework for international and national law and encouraged research on inclusion in education. To date, 177 countries out of 193 have ratified the CRPD, and therefore, the number of 'Students with Disabilities' has increased at the level of schools and at the Higher education level.

The World Education Forum in the year 2012, was held in Dakar, Senegal. It upheld the World Declaration on Education for All (EFA). The forum stressed the development of national action plans, monitoring targets, enhancing professionalism, forming partnerships to share good

practice, and identifying the existence of data gaps. Its findings stated that *'reality had fallen far short of the vision that had been forecast earlier*' and *'some progress has been achieved but has been uneven and far too slow'.*

Initially, because the venture is in an experimental stage integration proved challenging. (Lloyd 2002) Later The International Environment Convention on the Rights of Persons with Disabilities and its Optional Protocol implemented by the UN CRPD (2006) required the provision of available public facilities and services to reduce obstacles that might hamper equal participation in society. It established a legal framework for action. It called for the obligation to make '*reasonable*' accommodations and adaptations to educational establishments (UN Enable, Annex I, 2012). Over a hundred states that are signatories to the UN Convention were asked to devise positive and proactive strategies and to embark on balanced action to resolve inequity encountered by individuals and groups of students. The requirement for dynamic inclusion also mentioned taking steps to inspire participation of Students with Disabilities in public and social life. (Christ and Stodden, 2005, Lazarus et al., 2009).

The Work and Employment (2013) for the People with Disabilities Act called on all nations to ensure that People with Disabilities have equal right to employment. Many countries have established initiatives to promote inclusive Technical-Vocational Education and Training and have disability-specific laws.

The Accelerated Modalities of Action (SAMOA) Pathway (2014) called for consolidated measures for the promotion of international co-operation and investment in education, including support for transitions.

A significant gap still exists between the declared policy developments in numerous countries and the implementation of rules (Ramot, & Feldman, 2003) though according to (Christ

& Stodden, 2005; Raue & Lewis, 2011) in the last two decades competition has grown among institutions to invite this increasing population, hence causing institutions to offer more associated services and accommodations. From the mid-'90s, the numbers of Students with Disabilities has increased in Western universities, and with increased funding, more disability services were provided, and the quality improved, (Riddell.et.al.2005) but the worldwide economic recession hampered efforts by educational bodies to tackle legislation. (Christ & Stodden, 2005)

Member states of the UN signed the Agenda for Sustainable Development Goals (SDG's) in 2015, which aimed to improve the lives of the people of the earth comprehensively by 2030. It called for action by governments and people at the grassroots level. The SDGs would be monitored and reviewed against a set of global indicators that would be used to assess goals and targets annually through a Progress Report, which would be useful for regional follow up and review. SDG4 concerns equality in education and training at all levels and vocational training for the vulnerable. (World Education Forum 2015, Incheon Declaration)

In February 2017, UNESCO's analysis of Fact Sheet 40 confirmed that Students with Disabilities leave school before completing primary or secondary education. In December 2017, a survey was carried out in 19 countries, which showed gaps for People with Disabilities in Educational Attainment and Literacy, and the following year, the report was similar. It indicated gaps in implementing policies for the People with Disabilities as well as in monitoring and assessments.

In the First comprehensive UN Report on Disability and Development (2018), the Secretary-General, Antonio Guterres, said, "*The report shows that persons with disabilities are at a disadvantage, but also highlights the developing number of good practices that can make a progressively comprehensive and inclusive society*." An objective was set for 2020 to build the

accessibility of timely and reliable information, to gather disability data at the country level, and to invest in monitoring and evaluation. In May 2019, the annual report mentioned that the sustainable development goals set for 2030 are not yet advancing at the scale required (Male and Quentin Woden, 2018).

2. 4 A Brief Introduction to the UAE

The territory now known as the United Arab Emirates was earlier known as the 'Sheikhdoms of the Arab Gulf' and later as 'The Trucial States'. UAE is a new country that gained its independence in 1971 from the British. The Federation consisted of 6 emirates: Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain, and Fujairah. Ras-Al-Khaimah joined the Federation in 1972. It has a total land area of 83,600 km and a population of 9,825,695 according to the latest UN estimate for December 17, 2019 (published by Worldometers.info) of these, only 20% are Emiratis. (Gaad 2010, Inclusive Education in the Middle East) and 30% of its population is under the age of 25. From a pearl trading, fishing, herding, and farming people, the UAE has developed into a highly diversified economy with its oil-exports and with Dubai evolving into an international center for tourism, retail, and finance. 85% of the population lives in Abu Dhabi, Dubai, and Sharjah, the highest density being in Dubai. The largest emirate Abu Dhabi, comprising of 80% of the country's land area and holds the major oil and gas fields of the country. Healthcare and public education are free for Emiratis and accommodation, and financial support is provided for their unemployed, divorced mothers, underprivileged persons, as well as the persons with disabilities (Bradshaw, Tennant, and Lydiatt (2004) The country has a large expat population from diverse nations- India, Pakistan, Afghanistan, Bangladesh, Iran, Europe, America, Australia, and Philippines. (Gaad, 2006; Library of Congress, 2017) UAE is an '*education*' hub for the MENA

region with the Emirate of Dubai in the lead as a global city with multifaceted opportunities for investment and study along all spectrums. The education sector contributes over US$ 3 billion to the economy annually. (Altamont, 2016)

2.5: Historical Development of Education in the United Arab Emirates:

The earliest form of education in the UAE emanated from the mosques and consisted of teaching reading, writing, and Islamic teachings by religious teachers. (AlNaqbi, 2009) Towards the beginning of the 20th century, a shift to modern education began due to the growing awareness and economic prosperity. Local citizens, predominantly from the thriving pearl industry traders (AlNaqbi, 2009), took the lead in establishing the first schools in the Trucial States of Dubai and Sharjah in 1912. New schools towards the 1920s had to draw from the expertise available from the established education system of neighboring Arab nations in the form of the teaching faculty, the curriculum and were as well, financed by them. These schools were the earliest foundations of a secular and vocational education system (Ministry of Education UAE, 2013) Nevertheless, these early initiatives had a brief setback resulting from the dwindling pearl industry, which collapsed in the 1940s (Davidson, 2008).

Towards the mid-20th century, the educational system was revived again, mainly due to the vision and support from the then Ruler of Kuwait, Sheikh Abdullah Salem Al Sabah, who established new schools and provided expatriates teachers and also curricula support (Davidson, 2008). As a result of his initiatives, the first modern public school was established in Sharjah in 1953 (MOE UAE, 2013; Ridge, 2013). Besides schools founded by Kuwait, other schools were also established by Bahrain, Egypt, India, Iran, Saudi Arabia, and Qatar, each maintaining their systems with academic support in the form of teaching staff and their local textbooks and curricula.

Education at this period was limited only to children from privileged backgrounds (Ridge, 2009). More than any of the other countries, Egypt continued to play a predominant role in the UAE education system in teaching staff, curricula, and advisory support (Bahgat, 1999, Brooks, Fuller, and Waters, 2012; Davidson, 2008; Suliman, 2000).

A national education system was established following the creation of the United Arab Emirates in 1971. The newly formed Ministry of Education was headed by His Excellency Sheikh Sultan Bin Mohammed Al Qasimi, the country's first Minister of Education. A unification process followed, bringing the 47 diverse schools that were run by different countries, under the umbrella of the Ministry of Education (Ridge,2009 and Suliman,2000), primary education was made mandatory (Ridge,2014) and to standardize the country's education system the first National Curriculum Project was launched in 1979 which was subsequently implemented in 1985 (Ridge 2009).

Developing the education system has been a matter of high priority for the UAE government, as evident from the substantial investments that have been made to meet the country's rapidly growing educational needs. To improve and address the needs in the higher education sector and to oversee the country's scientific research policies, the Ministry of higher education and Scientific Research (MOHESR) was established in 1992. Later for greater cooperation and synergy and to align the "thinking and culture" of schools and higher education institutions, Hussain bin Ibrahim Al Hammadi, the 10th Minister of Education combined MOHESR with the Ministry of Education (Pennington,2016)

2.6 The Legal Framework for Inclusive Education in the UAE and Provisions for Special Education

Initially, in the UAE, the Education of Special Needs students were managed under the Ministry of Social Affairs, in segregated Special Schools, and the rest were educated in mainstream schools managed by the Ministry of Education jurisdiction. The responsibility was shifted to the Ministry of Education in 1980, with the call for *'inclusive education.'* The same year UAE University was the first to offer Special Needs Teacher Training (Weber, 2012). Around 1990 there was a call for providing a less restrictive environment, which meant 'pull out' rooms in public schools. The Resource Rooms were used for this, and the teaching was by Special Education teachers. Pupils who showed no improvement were sent to the Special Education Centers. Bradshaw et al. (2009) reported that the majority of private schools did not permit admission for special needs students due to lack of funding and expertise in handling Special Needs Students. Those with mild and unnoticeable disabilities were admitted undetected or by willing principals.

The School for All Initiative, which was launched in 2013, was the first practical step to implement the 2006 International Law on the Rights of People. It provided six different possible settings along a range of most to the least restrictive environment- from mainstream classroom to Special Education Center. In the same year, Dubai launched the "*My Community-A City"* for Everyone Initiative aiming by it to be gradually a disability-friendly city by 2020. This resulted from advocacy by parents and concerned educators.

UAE signed the Convention on the Rights of Persons with Disabilities Federal Law No. 29 of 2006 in November of that year. This was the first law in the country that was promulgated for the protection the rights of People of Determination. Article 12 of the Constitution guarantees equal opportunities in education, vocational coaching, in regular classes or individual classes. (Weber, 2012)

In 2008 the National Project for Inclusion of People of Determination was embarked upon with the slogan *'Our Life is in Our Integration.*' It emphasized the provision of the proper environment and services for People of Determination, and expedited their practical access to an equitable life and education. The Unit of Special Education was established to further this purpose. Many People of Determination continued their education, graduated, and some even received their Doctorates. The project has expanded to cover all of the UAE, emphasizing the significance of the community's role in reaching heights of excellence. The total integration of People of Determination is what this project aims to achieve. In the academic year 2014-2015, public schools across the UAE implemented this project.

In 2005 ADEC (Abu Dhabi Education Council) and DEC (Dubai Education Council) were formed to play a supervisory role and assess progress. KHDA (Knowledge and Human Resources Development Authority) was founded the following year.

In the beginning of 2010 Strategic Plans for the betterment of all levels of education with specific emphasis on the Special Needs category were launched. The declared goal was to raise the standard of education to international levels. These plans were periodically reviewed. New School Model of Education was launched by Abu Dhabi Education Council for Abu Dhabi government schools. It is oriented towards a critical thinking approach in curriculum and is based on the New South Wales Model. In 2012 an e-learning platform was launched for government schools, and in the same year, KHDA launched the What Works Program.

Dubai Law No.2 of 2014 protects all the rights of People of Determination and gives them equal respect and protection from all inequitable practices, and from negligence. Non–adherence to the law was declared to be punishable. Strategic Plan 2021 was launched the same year, the stated priority goals of which were to move towards an innovative-based knowledge-producing

society geared to market socio-economic needs, improve rankings, and boost research. (Emirate of Abu Dhabi, Ministry of Education, Strategic Plan 2010-2020)

The Accreditation Policy for private schools required a minimum of '*good'* in overall performance and *'satisfactory*' in all assessments. KHDA stated in 2014 that the inspection reports would include judgment about a school's effectiveness regarding SEN provisions.

In 2015 Emirates Foundation for Schools was set up to manage the affairs of private schools, and by that time, a total of 283 schools had been transformed into smart schools. By 2014-2015 60% of Emiratis were in private schools. An initiative was proposed to develop subjects at Secondary level to match university requirements.

Strategic Plan 2017-2021 emphasized the importance of science and technology, aiming at a pioneering global society and the need for *'high quality and reliable data*.' The Dubai Disability Sustainable Goal (DDS) is to have comprehensive information on all areas of disability - impairments, restrictions on activities and participation by 2021 to have comprehensive and systematic documentation to produce comparable benchmarked evidence. Plans are being considered to introduce a four-stream system in schools: General Stream, Professional Stream, Advanced Stream, and Elite Stream.

2.7 The State of K-12 Programs in the UAE

The Education Sector has undergone phenomenal growth. In the 1950s, there were only a few schools with the essential infrastructure. In the 1960s with the discovery of oil, more schools were established, but the system remained unchanged until 1990. In 1971 the literacy rate was 54% for males and 31% for females, which has risen to 95% for both genders, according to

government statistics. 17.1 % of Federal spending in 2019 has been on education. For the age range, 6-18 years of education is mandatory and is free for Emiratis in public schools and universities. The education system is comprised of three cycles: Cycle 1 refers to Grades 1 to 5 (6 to 11 years), Cycle 2 refers to Grades 6 to 9 (12 to 15 years), whereas Cycle 3 refers to Grades 10 to 12 (16 to 18 years). Public, private, and international schools abound in the UAE now. 35% of international schools offer International Baccalaureate Programs. The number of curricula taught in these schools is more than 17. In 2015, 283 schools had been transformed into Smart schools, and the number of students from early childhood to university level reached the 1.1 million mark. Currently, the UAE has a total of 619 public and 643 private schools (Govt. data for 2019). Today schools and university campuses are equipped with state-of-the-art technologies. Besides, the curriculum has been revised with increased emphasis on life skills, creative design and thinking, entrepreneurship and health sciences, and teacher training has also improved. Robotics, Virtual Reality and Augmented Reality are soon going to be applications that will have an important role to play in future education, and learning is going to be personalized and project-based. (According to Gems Education) supervisory bodies were set up to monitor the progress of Education- Abu Dhabi Education Council (ADEC), The Dubai Education Council (DEC) in 2005, Knowledge and Human Development Authority (KHDA, 2006) and the Sharjah Private Education Authority. MOHESR (The Ministry of higher education and Scientific Research) was formed in 1976 (MOHESR, 2011), which licenses all of the private educational institutions in the UAE.

UAE President His Highness Sheikh Khalifa Bin Zayed Al Nahyan has given precedence to knowledge and education above all other policies. In his words, *"The greatest use that can be made of wealth is to invest it in creating generations of educated and trained people"* and Sheikh Mohammad bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of

Dubai stated, *"Providing high-quality education in math and science to all Arab students is integral to re-booting our civilizational development; E-learning is the fastest way to bridge the education gap in the Arab world*."

2.8 The State of higher education in the UAE

UAE has reached a milestone with regards to the opportunities it offers in higher education. It has a wide range of public and private universities, catering to the needs of diverse populations. Ninety-five percent of females and 80% of male students exiting the Secondary School system continue with Higher Studies at local universities or abroad.

Public universities and some private universities are accredited locally as well as internationally. Globally renowned universities have established their branches in the UAE, and it is a favored destination for students from the MENA region and the Indian sub-continent. Nationals are also encouraged to study abroad, as the government offers them scholarships to study in universities of Western countries. (MOHESR, 2010, UAE INTERACT 2009)

2.9 Special Education

Students of Determination used to be segregated and received their education in disability centers, which were managed by Ministry of Social Affairs. The centers offered support for different types of disabilities. Government centers offered UAE citizens services, while private centers catered for other nationalities (Alghawi, 2007). The lack of specialists and experienced trainers was a challenge facing the early centers. They additionally did not offer a perfect

educational atmosphere and were, in various instances, very far from the students' homes (Torreno, 2010).

Students of Determination in 1980 were catered to by the Ministry of Education. The first initiative for special education services was founded to assist students with learning difficulties. The pilot project, consisting of forty students in four special classes at existing mainstream schools. Even by 1985 there was still no official policy with reference to education of special need students in the mainstream schools. (Alghawi, 2007).

The Ministry of Education in the UAE declared Federal Law No (29) in 2006 Concerning the Rights of Persons with Disabilities (CRPD). All types of education institutions whether professional, adult or further education schools were now required to integrate Students of Determination. The decision was a result of intense lobbying by parents and the growing international movement towards inclusion. Federal Law No (29) aimed to give Students of Determination in the UAE equal educational opportunities and to provide *'reasonable'* accommodations (Alghawi, 2007). It also stated that Students of Determination should be provided with a suitable modified curriculum. Besides education, the law aimed to provide equality in all facilities and services - health, work, and social life-, for Students with Determination (Alshamsi, 2010). The emphasis on this approach is supported by Islamic law and the UAE's cultural heritage too.

The comprehensive education program was established by the government of Abu Dhabi for autistic children in collaboration with The New England Center, Massachusetts.

The number of People of Determination in the UAE is currently unknown (UAE National Bureau of Statistics, 2012). There are state-of-the-art private centers for SEN, but the trend in modern education is geared towards all students, at all levels receiving their education in

mainstream institutions of learning. The scope of Special Education provisions in the UAE has widened, and now special needs students can even participate in Special Olympics. Such grassroot level initiatives should help gear UAE towards a genuinely humane, empathetic, and inclusive society.

2.10 Provisions for Persons of Determination at the higher education level in the UAE:

The inclusive education movement seeks a complete overhauling of the traditional mode of education, and hence the task is truly formidable. Its evolution to become a comfortable norm in society is still going to take quite a lot time. The role played by the leadership of such a newly budding state, to enthusiastically uphold a beneficial movement, especially when it involves multiple phases, and requires a high level of concerted effort and patience, is highly commendable. The legal framework was laid by the passage of laws between 2006 and 2014 to foster a cultural change and to create an infrastructure to implement inclusivity practices. The laws sought to protect the rights of people of determination by banning discrimination, the use of derogatory terms etc., and the upholding the rights, honor and dignity of SWD's on an equitable level. *The Dubai Inclusive Policy* and the *Abu Dhabi Strategy for People of Determination* were the springboards to initiate inclusive practice. At the school level in the UAE, the inclusive education movement is still in its formative stage and in higher education sectors it exists only in a rudimentary form.

What we are witnessing hence is phased development- which is inevitably going to take time and display ups and downs in its evolutionary stage.

Dubai Law no (2014) upheld the dignity of people with special needs as equals and granted legal protection and redress against abuse. The traditional labeling used for categories of people with disabilities was banned and it was replaced with the term students of determination, thereby

granting equity, respect and dignity. The diverse learning potential of all students was recognized in policy.

The Emirates of Dubai and Abu Dhabi were instrumental in rolling out inclusive policies. *Dubai Inclusive Policy* is quite comprehensive and aims at a fully integrated, inclusive society by the year 2020 whereas the *Abu Dhabi Strategy for People of Determination* intends it by 2024. These policies were developed to support the UAE's commitment to the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

The general state of provisions for inclusion could be studied from 9 different perspectives:

1) Leadership Role of Administrators:

The leadership roles have to be accountable by enthusiastically upholding inclusive policies, by being well informed and actively engaged in the implementation of inclusive education through appropriate strategies and by supporting a welcoming, sustainable environment for all students, empowering all stakeholders and ensuring compliance with the requirements of the policies by establishing quality inclusive education standards. This needs to be developed. According to (Schuelka, Sherab & Nidup, 2018; Sherab, et al., 2015) 'often the most inclusive and high-quality schools are those that have school leaders who lead with vision, inclusive values, motivation, autonomy, and trust in school staff.' The same principle is applicable at the HE level.

2) Knowledge of Policies and Regulations and Implementation:

There is a marked difference between the declared policies of countries on inclusive education and their implementation. (Ramot, & Feldman,2003). In one international study the knowledge of over 200 faculty members at a private, four-year post-secondary institution was assessed. Almost half of respondents had little or no knowledge of federal laws regarding students

with disabilities (Vasek, 2005). Other studies support these findings (Burgstahler et al., 2000) and also highlight the lack of knowledge about legal responsibilities Rao and Gartin (2003), found that staff with previous experience teaching students with disabilities were more willing to accommodate students who required it.

3) Compulsory inclusive education element in the theory and practice of teaching and in in-service and on-going training:

The theory and practice of inclusive education should be a compulsory element in the educational qualifications of Faculty, made mandatory through federal policy. Faculty should have access to appropriate in-service and on-going training and support, be actively engaged in the use of inclusive instructional strategies- planning of lessons, classroom set-up and student groupings, proficient in the use of new technologies, delivering quality teaching, encouraging and supporting the active involvement and inclusion of every student – physically, academically, socially, emotionally and culturally. The universal design for learning must be applied in developing individual educational plans (IEP's), using flexible curricula pathways, formative assessments and learner-centered activities, engaging in coaching and co-teaching when required.

Vocational trainers, academic lecturers and other teaching staff need to possess the basic knowledge and experience of inclusive education principles and techniques. Accreditation processes for all education certificates need to be revised.

For recruitment, employment and retention policies, inclusive education knowledge and the capacity to demonstrate this in practice is to be given priority according to the Policy adopted in Dubai. There needs to be some common agreement among postsecondary institutions of what is to be a 'standard base service' in inclusive practice.

4) Acceptance of Students with Non apparent Disabilities and Catering for Them:

Often faculty, administrators and staff are hesitant to work with students with invisible disabilities and have premonitions about their aptitude to handle college studies. This factor would have to be looked into in the case of UAE as inclusion is still in its initial stages at the HE level and it is imperative that the above category be not discriminated against. Kranke. D, (2013)

5) The Role of Special Needs Centers:

The policies require special needs centers to act as local resource centers, to grant timely admission to students with the most complex learning difficulties, to help their transition into mainstream settings, to impart inclusive education and provide specialist advice, to students, their families and educators and support staff in mainstream settings.

6) The Role of the Accessibility Office:

The Dubai Policy required the setting up of an 'Accessibility Office' to provide support for SEND students. The Accessibility Officer and a properly trained and qualified Inclusion Support Team were to facilitate the enrolment of SEND students, provide support to staff in terms of needed curricular adaptations, teaching and learning modifications, provide assistive technologies and devices, collaborate in identifying and dealing with problems and challenges that emerge for students and encourage and support parent/family participation in the education process. Students of Determination have the right to be admitted to a preferred institution and those with 'invisible' disabilities need to be identified and supported.

7) The Accessibility of Premises and the Inclusive Education Improvement Plan:

The Policies stress the importance of the accessibility of premises in accordance with the accepted Universal Accessibility Code and the preparation of an Inclusive Education Improvement Plan is also mentioned which would specify how support to faculty and students would be delivered and improved over time. The plan is to be reviewed and up-dated at least once annually. Regular meetings are to be held to report, study, maintain and improve practice.

8) Support Services:

Support services are required to provide external support to individual students as requested by parents or guardians including rehabilitation and therapeutic services and to deal with social, emotional, behavioral and/or family situations (e.g., housing, food, health and mental health conditions) of students.

9) Monitoring and Evaluation Systems:

A plan to collaboratively maintain Monitoring and Evaluation systems (M&E), collect and analyze data, track student progress and share information on students experiencing SEND from birth to adulthood through post-secondary and vocational education and training across all relevant sectors is to be maintained. Maintaining accurate data and its analysis is important for reform. Specialized software in the present technological era should make this easy. Education practices and their outcomes need to be reported and regularly reviewed.

10) Linking higher education to Vocational Training:

Higher education institutions are to be linked to vocational training centers to support initiatives for the employment of students who experience SEND. They need to work in partnership with schools to develop vocational and alternative education pathways. Under-graduate level courses associated with inclusive education and related specialist services are to be provided. The aim is to have access to high quality, cost-effective, time-efficient and accredited, inclusive education training and development opportunities and work placement programs such as apprenticeships, training contracts, and supervised work programs in the private, public and voluntary sectors. A database would be developed to register public offices, private companies, institutes, voluntary associations, and other organizations whose activities are suitable for promoting meaningful work placements of students who experience SEND.

There would be collaboration with relevant bodies from higher education, technical and vocational education and training (TVET) and post-school employment sectors to provide reasonable accommodations, appropriate support and assistive devices based on the individual education plans.

This includes monitoring that students who experience SEND are employed based on their acquired skills and are paid competitive salaries.

Though inclusion is compulsory in the school set-up, it still needs to be well established, to prepare individuals of determination to meet the requirements of higher education. There is a gap between the two levels, which hinders progress at present, to the next level.

There is recognition at present of multiple barriers present in the system- negative societal attitudes, physical inaccessibility problems, inequity in the opportunities in education, for instance- absence of a comprehensive support system and the burden of exorbitant sums of money to pay

for disability related services which in turn affects the general standard and quality of life. The policies and procedures may be restrictive like limited employment opportunities, paucity of quality vocational education, training and rehab programs for pre and post work placement-concentrating on improvement of POD skills and readiness to transition to work as well as the absence of a comprehensive inclusive employment policy with reference to POD's. Similarly, there are barriers for participation in public life such as in the arts, in recreation, sports and volunteer work. *(Abu Dhabi Strategy)*

Reference has been made in research studies to the cultural bias and stigma that exists amongst people, though awareness campaigns and the reform movement itself has lessened these biases and parents in some instances have voiced support for inclusion. Some earlier studies on attitudes of teachers towards inclusion displayed negative sentiments (Al Zyoudi, Al Sartwai and Dodin, 2011; Al Ghazo and Gaad, 2004; Gaad, 2004b). The inclusion of children with intellectual and severe learning disabilities and behavioral disorders was vigorously opposed as (understandably) teachers with fewer years of experience felt inadequate, as they were not equipped with the appropriate training and strategies to meet the educational needs of these children. (Bradshaw, 2009; Gaad and Khan, 2007; Gaad, 2004a; Gaad, 2004b; Alghazo and Gaad, 2004; Alborno and Gaad, 2014).

Training and experience have led to improved attitudes amongst elementary school teachers, as making curricular modifications is more challenging for higher levels. The Knowledge and Human Development Authority (KHDA) was set up in 2006 to monitor private schools in Dubai. In 2010 MOE introduced the 'School for All Initiative" and simultaneously published the 'General Rules for the Provision of Special Education and Programs and Services' for public and

private schools and began training programs for members of staff. After 2014 the KHDA private school inspection reports included a judgment of a school's effectiveness of SEN provisions.

Initiatives like 'My Community' and 'A City for Everyone' were launched in 2013 to make Dubai disability friendly by 2020. At the Higher education level there is awareness at present about SWD's. Students in categories like those with visual impairment and those with mobility problems – can be seen in college corridors, and others with invisible disabilities i.e., intellectual disabilities may be present. Their presence helps in the awareness of the able bodied about humane feelings and empathy for others that are unlike them. Some universities do have Accessibility Rooms as well and in the newer universities efforts have been made to ensure physical accessibility but Inclusive policies are not mentioned or get only a minimal reference in most college handbooks.

The university system is sparse and needs modifications from all aspects. It is understandable that in the initial stages, it is inadequate, as massive changes are required. The level is itself more challenging, and its scope is broader. Also, policy needs to be followed in practice and it is not acceptable to merely be complacent with coming to terms with individual students for teaching accommodations and exam concessions.

2.11 The Inclusion Policy at the Sample Federal University:

The University has a policy in place to uphold the rights of Students of Determination. (See Appendix). It pledges to grant the SWD's equal and fair rights and hence has an open-door policy for them. It has an Accessibility Department (See Appendix for a complete description of its services), to assess special needs, organize pre-registration seminars; arrange meetings with parents and academic staff; monitor student progress; provide assistive devices services and support; provide services that meet physical, academic, and social needs, make reasonable

accommodations, and provide assistive device training and in their usage. It also obligates the preparation of an IEP or an Individual Education Plan for SWD's and for them to become independent learners and be able to complete their studies. At present, the University has a total of 232 SWD's.

2. 12 Examples of Inclusive Education in foreign universities

Some examples of Inclusive Practice at the HE level in foreign universities are given in following sections. They help us understand the concept of disability in the cultural contexts, its evolution through time - the gradual stages it went through in the chosen contexts; the state of the practice of inclusive education particularly at the HE level, the barriers faced and overcome, and the remaining challenges. The object of this exercise is to practically benefit from the lessons learned.

2.12.1 Evolution of the Policy and Practice of Inclusion in higher education in the UK

The information in this section is based on Karen Beauchamp-Pryor's (2012)'s work: "*Changes in the political and policy response towards disabled students in the British higher education system: a journey towards inclusion."*

In many western countries non-discriminatory practices have been introduced through governmental initiatives. Initiatives in educational policies and practices through modifications and adaptations have increased access of SWD's to higher education. Before the 1990s, disability in the UK was viewed as welfare and not as a 'rights' issue and students with Disabilities were often refused admission (Barnes 1991). The case study of the UK that is referred to below is for

the purpose of proving the role of clear policies and their enforcement, but that it is a process that is established foremost by fostering the culture of inclusion over time. Even the passage of laws cannot automatically ensure needs to be met. Practice is built on sifting through experience and experimentation. Change takes time and often is met with currents of resistance in the initial stages until experience helps in the embedding of the practice.

The facts and figures are from the OECD (Papers published 2003) in *Disability in higher education.* The case study included 90 universities, 60 colleges, and 499, technical or art colleges and is applicable for the time period 1991 to 2000. The study indicates a steady rise in the number of students with disabilities granted entry to HE courses over a period of time.

The British system of higher education aims to develop the potential of its populace to fulfill personal and professional needs, to improve the economy and help in building a prosperous nation and to further the horizons of knowledge, through research and scholarship. Undergraduate and postgraduate courses are offered by the universities and colleges in the UK. Undergraduate courses lead to Bachelor's degrees or Diplomas, and Postgraduate courses lead up to Master's degrees and Doctorates. Further education or work-related courses are provided for those not intending to continue with university studies. Since 1991, 57.5% of English universities developed their services for the blind; 68% did so for Students with Learning Disabilities; 60.5% for the deaf, 59.1% for the students with mobility problems and 57.1% catered for students with writing difficulties. As an initial step this was encouraging. But this was still a mere drop in the ocean as the statistics indicate. Between the years 1994 and 1996 there was a 2% increase in the number of disabled students entering higher education but this did not improve their experiences (higher education al Statistics Agency, 1998, Beauchamp-Pryor, 2008). The feeling of marginalization of Persons with Disability continued. *"For those with restricted mobility or sensory disabilities, the*

physical environment alone tells them they don't belong that they are deemed less than human that they are not wanted within the places that non-People with disability spend their lives- their homes, their schools and colleges, their workplaces and their leisure venues." (Morris, 1996).

The following are some of the general features of the change that took place:

•The shift from secondary to higher education was problematic, especially for those with learning disabilities.

• There is no precise information about the choice of courses that was made by SWD's. The selection of a course depends upon institutional accessibility which could have been a hindrance for mobility-impaired students.

•There was no needs assessment, this group was poorly prepared to advocate for themselves and access the next level.

•A large percentage of the students did not have access to the IPRC process mentioned in legislation-needs assessment and the preparation of IEP's. The disability statement for each student was a requirement. It was supposed to be *'concise, informative and developmental*'- stating general information about policies and procedures for SWD, the current provisions for accessibility and admissions, resources and support facilities (special assessment methods, arrangements for exam and placement support). (HEFCE, 1999).

• Studies showed a lack of support. SWD's struggling with their courses, and receiving lower marks.

•Most educational institutions had career services that partnered with the labor market. There is no specific data on SWD's and employment for this particular duration.

Statistics helps to indicate the efforts and success of career services and job placement and the role of it in improving the quality of life for the SWD's.

- The following are some of the facts and figures arrived at from the study for SWD's in the UK, for the academic year 2000/2001. The number of Students with Disabilities at the Secondary level was 724,700 or 18.5% of the total at that level (Unit of Education and Skills, 2001). Only 96,200 or 13.2% of them had an Individualized Educational Plan.

12.12.2 The Legal Framework:

UK legislation and policy from the 1990s to 2000 regarding inclusion provided the legal framework for the case studies. The background to these laws is also mentioned as are the priorities and objectives of subsequent laws and their impact on policies.

- The 1970 Education for Handicapped Children Act ratified the policy of inclusion by asserting the right of disabled children to an education.
- The Warnock Report of 1978 followed this Act. Its recommendations got translated into the Education Act of 1981. Disability classifications were eliminated, and new terminology, 'special educational needs', was created. Statements of special needs were required by law to be issued by local authorities to individual children.
- The Dearing and Garrick reports in the 1990's emphasized the need for widening enrollment opportunities for Students with Disabilities and those experiencing social disadvantage (Tinklin et al. 2004).
- The Disability Discrimination Act 1995 was a result of the pressure by politicians, academics and organizations of People with disabilities, (Union of the Physically Impaired

Against Segregation 1976; Finkelstein 1980; Oliver 1990, 1996). Disability was defined as "*a physical or mental impairment which has a considerable and long-term adverse consequence on a person's ability to conduct normal day to day activities*" (Unit for Education and Employment, 1995). This definition by the Conservative government of the time-shifted the focus from societal barriers that hindered the optimum development of the disabled. But as Rights Now argued, *"What a discrimination law should focus on is discrimination, not how disabled a person is, but how much they are discriminated against*."

- The Labor Government in 1997 set up the Disability Rights Task Force (DRFT), which championed the rights of People with Disabilities.
- Policy developments and initiatives (Tomlinson 1996; HEFCE/HEFCW 1999) (Reupert, and Wilkinson, J.) required institutions to have a disability statement and aid in the application/ registration and administration processes; re-think about pedagogical techniques and learning for a spectrum of learners with varying abilities; to allow for the provision of disability officer, and allocate an allowance fund for Students with Disabilities. The Quality Assurance Agency (QAA) was formed in 1999 to maintain academic quality and higher education standards. However, the guidelines were not legally binding. The Disability Discrimination Act only helped more people with disabilities to participate in higher education but failed to provide rights as the Committee of vice-Chancellors and Principals vehemently opposed the publication of disability statements, expressing future policy, provisions and plans.

Inclusion has been widely endorsed in recent times at the university level (Parker, 1998) but frequently practice has not followed suit, as mentioned by Goode, 2007; Riddell et al., 2005.

This is due to the absence of a central policy and a coordinating disability unit in numerous higher education institutions. A central coordination unit can help execute policies through concrete strategies for groups in universities (Holloway, 2001; Matshedisho, 2007). Inclusion can be elevated by the participation of Students with Disabilities in supervision and assessment and by the nature of support services (Ashcroft, Bigger, & Coates, 1996). The disabling factor is limited participation (Borland and James, 1999; Holloway, 2001).

Most universities remained ill-equipped to provide accommodations within a mainstream setting. By producing adults with educational and social disability, the special education system propagated the misguided assumption that People of Disability are somehow inadequate (Oliver, 1996). Tinklin, Riddell and Wilson discovered that help was offered primarily at an individual and not at university level (2004).

The Labor Government passed two significant laws- Special Educational Needs and Disability Act (SENDA) 2001, an extension of Part 1V of the Disability Discrimination Act, 1995- It granted legal protection to People with Disabilities. The Disability Discrimination Act, 2005 promoted equality. Henceforth it became unlawful to discriminate against disability, and institutions were legally required to have provisions for "*reasonable adjustments"*. Language is charged with meaning (Spender 1990; Roberts, Davies and Jupp, 1992). It conveyed contemporary ideology. Repeatedly at the meetings held, disability was mentioned in welfare terms of *"special needs*," *"special treatment*" and "*compensation*." The Disability Discrimination Act 2005 challenged this inequality. It upheld the social model for the disabled in the code of practice as referring to disability resulting from 'attitudinal and environmental barriers.' (Disability Rights Commission, 2005).

Disability was not regarded now as a "*personal problem*" stemming from an "*individual's disability'*. The implementation of the law happened only with the passage of the Single Equality Bill in April 2009, which called for equality on multiple levels, driven by an all-out strategy emanating from the Treaty of Amsterdam (European Union 1997). The people with disability were recognized in the Code of Practice to have been under-represented in positions of power to influence the government in its policies towards them (Disability Rights Commission 2005). Practice still lagged, and it was only by 2009 that examples of good practice emerged. The involvement of the disabled in regular organized groups and their invitations to like students to be part of University Disability Equality Committee helped towards active engagement.

The form for admission to higher education requires the disclosure of any disability to be specified from a list - dyslexia, sensory impairment, mobility problems, prolonged sickness etc. Students provisionally gain admission based on their application, but the final decision rests on the exam result. Some institutions may arrange to interview students. Students may not always have access to the admissions officer to discuss needs.

Lack of support was mentioned as a major problem. The quality of supports and services depends upon the assessment of needs. Some universities like the University of East London send a questionnaire that will then provide information to the disability unit regarding the number of enrollments, the type of disability, and the facilities to be provided by the university. Most institutions invite Students with Disabilities to contact them at the earliest and meet the faculty members, the registrar for student welfare, housing staff, and, if needed, medical center staff. They might also receive literature regarding skills for success and guidance in the form of the Handbook on Disability.

Dedicated staff is needed to widen participation. Staff training helps in partnerships with regional local and special interest conferences. Universities may provide training in various skills for instance time management, self-help skills and training trainers.

The Disability Coordinator has a central role to play and liaises with policymakers, staff, LEA's, and Students with Disabilities to get suitable provisions for them. Nearly all universities in the UK have a disability coordinator.

The support that Students with Disabilities receive depends on funding available from LEA. It may be on an institutional level whereby the university coordinates to provide the services or involves students engaging volunteers under the supervision of a university staff member. Several concerns were raised (Parker, 1999) regarding this. Students with Disabilities need assistance from auxiliary staff, for instance sign language interpreters, note-takers, and for a host of other functions. These facilities are lacking in some institutions and students are forced to recruit their own assistants. Unqualified persons might be hired, as qualified assistants are hesitant due to the method of payments. This can lead to students paying for what they can afford, rather than what they need.

For examination purposes the nature of the exams (length and format) needs to be matched to the student. Extra time or rest periods during exams might be required by such students. Adaptations have been introduced for examinations by all institutions. Special provisions might be made for end of year exams but no such provisions may be available for reviews through the year and sometimes the provisions do not match the needs of the student.

The architecture of old buildings makes accessibility difficult as in Central London. Some obstacles are due to lack of awareness and others are tied to finances: Students at the University of London complained about crowded classrooms and a crammed canteen, and poor access to

toilets or lifts. Students are generally satisfied with their learning support. However, some complaints were made about staff attitudes and criticisms were made about the mismatch of teaching strategies to student needs (Clode, 2000).

In the 2002 analysis of the higher education Statistics Agency revealed a link between disability and course of study: People with Disabilities were more likely to study liberal arts subjects and not subjects like Economics, Clinical Medicine, or Accountancy. An unwillingness to fund to step up disability provisions was noted.

Farmer et al. (2002) considered that the involvement of those with learning difficulties in universities must be at three levels: individual, institutional, and ideological. At the individual level, they must be offered counseling services and the curriculum should be adapted to their needs. Methods of instruction and other services need to be altered, example providing a sign language interpreter or Braille transcripts. On the organizational level, standard institutional practices need to be changed, staff needs to be trained, and the physical environment needs to be modified. On the ideological level, there is a need for discussion and debate about disability types and existing policies to push for equality of access for all. Awareness is created amongst the staff through written documentation to identify needs of SWD's, information about the disability service, facilities and various prospects of funding, classification of disabilities, their effect on learning and adaptive teaching methodologies. For instance, the University of Bradford has an information package with the above details and details of staff development programs. Some universities like Heriot-Watt in their induction course arrange disability workshops for new staff. A Post Graduate Certificate in Teaching and Learning is a requirement for new faculty at University of East London.

To step up, the integration of Students with Disabilities, universities are required to involve them in student unions, sports activities, etc.

An alternative to the conventional set up of university education is distance learning through the Open University. There are six organizations at present offering higher education courses in this manner. This arrangement is more flexible, cheaper, and suitable for those who wish to avail it.

The National Extension College has equal access for PWD and careers for UK residents. Students are given guidance and academic support before they join. Short courses to undergraduate and graduate courses and general courses and those leading up to specific careers are offered. Learning materials are provided in different formats. For these kinds of courses no prior qualification is needed unless the student wishes to do a postgraduate course. Students are helped to access funds.

The conclusions drawn from the above report about British universities are that an atmosphere for change has been initiated by global awareness and discussion, culminating in international legal policy that impacted national policies. It is recognized that change is often a process, arrived at through long-time commitment. Inclusion is an ongoing process which needs continual effort and striving. (Booth & Ainscow 2011). It requires an ongoing monitoring of progress and evaluation of the outcomes to inform planning and future practice. The evolution of inclusive practices in education from its initiation at the HE level in the British context and its dominant features during the period of study; the knowledge of barriers that served to exclude, and those enterprises that helped to incorporate are indicators for future practice. As the nature of the exercise depends on the people who manage it, it will always mirror the aims, aspirations, the strivings or the lack of it and the capabilities of those who manage it.

2.12.3 The Practice of Inclusive Education in the University of Hong Kong

In the study *'Barriers are impacting Students of Determination at a Hong Kong University'* done by Christie L. Gilson, Moravian College Stacy K. Dymond, University of Illinois at Urbana-Champaign, *(Journal of Postsecondary Education and Disability)* 25(2), 103 - 118- data was gathered using observations and semi-structured interviews from six students with disabilities and university staff. The Disability Discrimination Ordinance (DDO) was enacted in 1996 in Hong Kong. It upheld equality of opportunities at the university level (Nunan, George, and Mc Causland, 2000).

Disability is defined by the DDO in medical terms but mental illnesses are not included. At the post-secondary level students with physical impairments are more favorably regarded over those with mental or intellectual disability conditions (Tam & Watkins, 1995). The barriers found were in the personal characteristics of the SWD's, the physical and social environments, the support systems and in the methods of teaching and evaluation.

Students wishing to continue into higher education are required to succeed in the Hong Kong Certificate of Education Examination (HKCEE). Tests are in eight subject areas, and for a passing grade, students must qualify at least in five out of the eight subjects (Wong and Seeshing, 2004). Competition is fierce. However, it is uncommon for Students with Learning Disabilities to sit for college entrance examinations.

The unusually high cost of AT (Assistive Technologies) is a barrier for Students with Disabilities (Tam, Mak, Chow, Wong, and Kam, 2003) and, this in turn, influences academic success rates.

The students that were interviewed did not appear to have strong advocacy skills. This affects the kind of accommodation students get at a university and may consequently lead to the inability to secure accommodations in the job market. The reluctance to disclose disabilities, the faculty's non awareness of non-apparent disabilities may disadvantage students in terms of accommodation.

Hong Kong is a hilly island, prone to mudslides, and is challenging for physical access. The university is located on a " *steep hill, and with different platforms*" The outside noise was disruptive. No proper support was provided for the visually impaired in rainy, windy, or otherwise unfavorable weather.

Several services that DS offices are supposed to provide commonly were not available like sign language interpreters. The Disability Discrimination Ordinance Code of Educational Practice requires adequate academic resources, services, and provisions for the disabled. (Equal Opportunities Commission). Wheelchair users are directed to alternative universities due to difficult terrain.

Procuring funds from the university's financial aid office for purchase of computer hardware did not seem timely, leaving some to personally purchase items they could ill afford to buy, which can mean added stress.

The researcher queried the staff about adequate personnel support, and daily time spent to provide services for the disabled, and their answers indicated poor support. One of the staff confided about the challenge the instructors felt about dealing with students with more pronounced disabilities and their preference for those with comparatively milder disabilities. Faculty needed training to properly accommodate students with any type and level of disability, and this is not a

situation unique to this university (Kroeger and Schuck, 1993; Lancaster et al., 2001; Myers, 1994).

Evans, Asssadi, and Herriott (2005) stated that significant contact of the faculty with those with disabilities and those without, helps to raise their level of awareness regarding disability issues. The accommodations provided were fewer than what is typically available in a Western university (Lancaster et al., 2001; Leyser et al., 1998). Disabled students struggled to keep up with others in this context.

The non-availability of courses on topics relevant to the disabled, sparse events on disability awareness, and limited efforts for advocacy by the students with disabilities were issues that needed to be resolved. There is need for a broader audience to be made aware of attitudinal barriers to disability and to be trained in this particular field in higher education circles.

Study was confined to a small number of students and the range of disability types represented was narrow. The selection was not random; hence one cannot draw general conclusions from it. Most of these barriers are categorized as institutional barriers (Gorard et al. 2006, Thomas et al. 2002 and Fuller et al. 2004)

This study reveals an example of inclusive education at the HE level in a very rudimentary stage in which the readiness and the enthusiasm to usher in the changes was not there. There is no mention of any awareness campaigns for faculty and those with disabilities. The study was not conducted over an extended period of time and hence does not show the evolution of the practice. It is a mere lip-service to inclusion as cultural awareness, which is an important factor for the development of the practice, was absent. The entry exam itself appears to be tough and exclusionary for the SWD's. The faculty shied away from disabilities that were severe and did not 'prefer' to deal with them. The students did not disclose their disabilities, and as they had no

training in advocacy skills, they suffered academically and would subsequently have faced the same barrier in the job market. Some disability types, i.e., mental illnesses and learning disabilities, were not even recognized. Looking at disability from the medical viewpoint is discouraged as it has historically led to corporate interests and does not regard those with disabilities as a diverse and equal category but as deficient.

There is no evidence of faculty training nor were curriculum modifications and even needed adaptations scarce- like not providing sign language interpreters and adapting the method of teaching to suit particular disabilities. The noisy atmosphere would not have been conducive to learning. Possibly due to hassles with funding, delivery of assistive technology equipment was delayed, and if the students had to purchase it themselves- this was an added burden.

The Support services were poorly organized, inadequate time was given to those with disabilities. Because of the topography in which the university was located and insufficient support, the university was not suitable for those with mobility and vision impairments. Hence this was a specimen of a poor example of inclusion.

2.12.4 Inclusive Education in the University in Northern Ireland

A qualitative research study was undertaken in Northern Ireland between 2009 and 2012 as part of the Uni4U project, which involved 13 in-depth studies aimed at understanding barriers faced by Students with Disabilities. It was noted that though participation had improved, the comments of the students and the examination of the situations lead to the realization of three types of common barriers and prompted recommendations regarding them:

- Communication networks to encourage dialogue between all concerned parties including the students and their decisions to be given importance.

- Staff training particularly in mental health issues.
- The need for a movement removed from individual *"reasonable adjustments"* to inclusion right across the board.

The framework for this study was the five barriers to inclusion pointed out by Tinklin and Hall (1999), which unfolded other barriers. These were: "*the physical environment, access to information, entrance to higher education, assumptions of normality, and levels of awareness."* These are institutional barriers. (Gorard et al., 2006). Thomas et al. (2002) and Fuller et al. (2004) came to a similar conclusion. Harrison et al (2009) reported that *"the physical environment could be one area that has become sufficiently regularized,"* but this was cited as a rudimentary and straightforward obstacle that none should have to face at that particular point in time.

As to the lack of information –the provision of it is a requirement that forms the basis of good advice and support and eases the SWD's journey in inclusion as well as improving the expertise of all stakeholders and ensuring improved services. The study led to the recommendation to develop Key information Sets, providing information about university courses, sixteen of these were recognized, and there was emphasis on the early, timely availability of data, for students and their parents for making informed choices.

The legislation for inclusion has been in place since the passage of The Disability Discrimination Act 1995 and has since undergone further refinements. The 1995 Act called for making '*reasonable adjustments*' to remove barriers to inclusion. Section 75 of the Northern Ireland Act 1998 made the promotion of the equality of opportunity a legal obligation for all students. The Equality Commission was to mainstream equality of opportunity in all public institutions. For this purpose, they were required to produce equality schemes that were to be ratified by the Equality Commission. In line with the Disability Discrimination Order 2006, the

universities were required to prepare and present Disability Action Plans. The research under consideration was carried out in 2 universities for the period 2009 to 2012 by which time one would expect practices based on all the other laws preceding to have been established. The research findings were, however, contrary to this.

The students that were interviewed had a wide variety of disabilities. Though some of them had high achievements at the school level, they could not maintain that level, as there was no recognition of problems like depression and isolation that they faced, although in some cases, help was sought.

There were issues with transition from secondary to higher education level due to lack of coordination and collaboration between the two levels, perhaps due to school staff's confidentiality preferences and by the students themselves. Preparation for transition needs to begin at the school level some years before graduation, to help Students with Disabilities cultivate positive traits for life, realize their interests and capabilities, their strengths and weaknesses, their career goals and for them to be acquainted with the courses and other services available in campuses through arranged visits and talks before admission. The recommendations were made for information to be disseminated by the career teachers in schools and the Special Needs Coordinators for the target group. (Department of Education 2001) Experts could be brought in to encourage the SWD's. Also, there needs to be more dissemination of information about disability services through websites and presentations at schools that could be accessed before joining the university.

Communication was a significant barrier between school, university, support staff, parents, and students. In the case of first-generation entrants (Thomas and Quinn, 2007) to universities, their parents/guardians need to be empowered with information to be able to encourage and advise their wards.

Statements of disability were a legal requirement at the school level, and liaison between schools and universities which should be routinely done before admissions, was not there. For SWD's to have equitable access and to manage a smooth transition into university, it was imperative before the beginning of term, for the information about their disabilities to be disclosed to support staff and Faculty, but with the assurance of confidentiality for better access to services.

In some cases, the students did not confide about their disability for fear of being stigmatized, rejection of admission and later of employment.

On admission to the university, the Transition Coordinator needs to provide all the necessary information to make the students feel comfortable. Students could have access to information in orientation sessions and support must begin at the earliest possible for timely planning by the students. The responsibility of the Support team is to provide timely support and interventions. It was exasperating in the case of those who needed to ask Support staff /Faculty for accommodations but were not heeded.

Most of the students were isolated, which reveals the poor quality of their lives, and some even were on the point of harming themselves. Others simply discontinued their studies, and some who thought of leaving were threatened with being not accepted, once they exited. Limiting counseling sessions to 6 was counterproductive for those with anxiety, depression, and other mental disorders.

The basis of the study was on the social model of disability. The systematic barriers that prevent participation were identified as arising from a society refusing to consider individual variations between people. The model is defined as the limitation of action brought about by a contemporary social organization that takes practically zero account of individuals with physical

impairments and rejects them from the most essential of social activities (Union of the Physically Impaired Against Segregation 1976)

Some of the students were discriminated against by the preconceived notions that others had about their disability. Hence, they were excluded from support, like the student with cerebral palsy who *'was not expected to pass well'* and another one who was labeled as '*lazy*'. In the case of some students, the university may refuse to bend the rules to provide a requested accommodation, as in the case of the student suffering from epilepsy needed to have a carer stay with her. One of the universities she contacted did not permit her to have her privacy. The assistant was supposed to share her room but was not allowed to be in an adjacent room as per her request.

Needs Assessments might be conducted on admission to the university. The provisions might not be made accordingly, as was the case with P-45, who suffered from anxiety and depression and requested to be provided with lecture notes before the commencement of the class and be allowed to record the lesson. The latter was refused on the basis that the lecturer did not know how to use the equipment.

Sometimes there can be delays in being granted the accommodations. For some, it might be that their diagnosis has not been established at the time of admission. The study "*provided examples of where the current provision is not adequate or no provision is being made, with students having to employ their coping mechanisms to proceed with their studies*."

In the making of policies, the voice of the students should be heard. There is a need to implement the full and complete introduction of inclusive post-secondary programs.

University staff need encouragement to improve their expertise in inclusive education through training and development programs.

Diverse methods of assessment need to be introduced to match students' varying needs as courses are sometimes chosen based on the expected types of evaluations, as reported by Fuller et al. (2004). He noticed the preference for little written work and examinations and a preference for practical work. This can lead to greater satisfaction, as mentioned in the study by Water field and West (2008), higher grades, and fewer requests for 'reasonable adjustments' by students. The stiffest resistance to assessments is by Faculty members as it involves more planning and time for evaluation.

Solutions need to be found for students with mobility problems. Easy access provided by a university can be a reason for a student to join that university. A taxi or bus service could be provided as was done for the student in the study, and a support assistant was arranged to carry and to collect his books from the library. Doors could be equipped with push-pad openers; curb cuts could be made in appropriate locations and classrooms and toilets made accessible for wheelchairs.

This case study reveals the mismatch between the legal requirements of inclusion and the actual situation on the ground. Enrollment of SWD's improved, and Physical barriers was attended to, but, true inclusion was not established from all other aspects. Though equality of opportunity had been made mandatory by Section 75 of the Northern Ireland Act of 1998 in practice, stigmatization, social exclusion, and indifference from major stakeholders furthered the miserable plight of the SWD's. Disability Action Plans were required from all Irish universities by the Disability Discrimination Act 2006, and policy did not translate into action. Hence there was no proper Needs Assessment, and counseling was limited.

Some of the students had been high achievers at the Secondary level. Lack of coordination, collaboration, and co-operation by all the stakeholders and the absence of empathy by some,

worsened the mental state of the SWD's, increased the dropout rate, and narrowed their chances of equitable success. Another key factor that resulted from lack of coordination was the non-availability of timely data to make informed choices.

There were significant problems with the Transition from Secondary to HE level due to a lack of communication and coordination. The preparation for Transition has to begin much earlier at the level of the school where students should be trained in life and time management skills. No visits, talks, or events were arranged before the beginning of the term, which could have been informative and helpful in easing the Transition, nor is any orientation mentioned at the beginning of term, which could have aided the Support team providing timely interventions.

First-generation entrants to university suffered particularly as parents/guardians did not have the culture and the proper information about inclusion. In the case of disabilities like visual impairment, lecture notes were requested and not provided before the commencement of classes which caused additional anxiety and depression. The study led to the recommendation of Key information sets that provided information about the courses offered by the two universities in the study. It was rightly emphasized as a result of the study that the SWD's should be involved in the decision-making process.

It was rightly emphasized as a result of the study that the SWD's should be involved in the decision-making process. For inclusion to succeed, the central reform that must happen is mandatory faculty training and ongoing development programs, curriculum reform to suit diverse needs, and flexible assessment methods.

2.13 An Unusual Case Study of Inclusion:

South Africa is a signatory to the UN's CRPD, but to date the inclusion in higher education of Persons with Disabilities, in this country, faces multiple problems (Strnadova, Hájková

and Květoňová 2015). This state of affairs initially and primarily stems from the historical context of discrimination which this country continues to suffer from, even in the post-apartheid era. The consequences of it, for instance, are evident from the estimated figures of learners with disabilities, of school-going age that were out of school, 88 for 2015, which suggest that at least 600,000 that is about 70 to 90 percent of children with disabilities.85-87 Gustafsson, This is an indicator of what to expect at the subsequent levels. To confuse matters additionally, there is no consensus regarding the definition of disability, and hence there are no reliable statistics regarding students with disabilities in SAHE. (Howell, 2006) (Gustafsson) The medical model is followed and there are no comprehensive facilities for the students with disabilities.

The sections below deal with the significant factors for the slow and poor inclusive practices in education in South Africa. These factors can be broadly categorized as Socio-Economic, Mismatch between Policies and their Implementation, Attitudinal Barriers and the State of Teacher Training and Teaching Methodology and deficient Support Systems. One of the studies of inclusion at HE level referenced below is based on the experiences of students during the period between 1994-2017- the post-apartheid era (Mutanga, 2017) which is fairly recent times. Myriad problems surfaced- attitudinal, structural and organizational. Mutanga and Walker; (2015) argued that the obstruction for people with disabilities arises from multiple intersecting factors, i.e. personal, environmental, financial, cultural, social and political.

2.14 Socio Economic Factors-Consequences of the Continued Presence of Discrimination:

The South African Education system continues to bear the brunt of its legacy of the pre-apartheid era. Engelbrecht (2006) stated that 'racially entrenched attitudes and the institutionalization of discriminatory practices led to extreme disparities in education delivery.'

While education was compulsory for whites, it was not so for all other ethnicities (Asmal & James, 2001). The funding and support services for disabled black students were almost non-existent. (Department of Education, 2001; Lomofsky & Lazarus, 2001). During apartheid, black South Africans were given "Bantu Education." This was a system with minimal math and science and prepared the students for unskilled work (Asmal & James, 2001). In the era of apartheid, students with disabilities were not catered for. More than 80 per cent of them were not in mainstream schools (DOE 2001). It was upheld that students with disabilities could only receive education under the care of the medical professionals in 'special schools.' Segregation was rampant and black classrooms were crowded with double the number of students than white schools (Lomofsky & Lazarus, 2001). The effects of this are to be witnessed even in the Cape Town area, which is the most affluent region, due to division along racial lines. The Southern and East African Regions of South Africa, which are disadvantaged areas, still experience the lowest educational achievements. Funding for education in underprivileged areas is sparse, and hence the institutions in those areas are poorly resourced. The funding by the South African Department of Education to the provincial education departments is inadequate. The infrastructure needed to support learners with visual and physical challenges - the extra costs for assistants and transport are poorly managed or non-existent in underprivileged areas.

Disability is not prioritized by most higher education institutions (Tugli et al. 2013; Ohajunwa, McKenzie, Hardy and Lorenzo 2014) and the political will on the part of the government is lacking (Matshedisho 2007b). There is no national policy regarding inclusion at the university level.

There were marked differences in the provisions for black students with disabilities (Engelbrecht, Nel and Tlale 2013). Many of the '*special schools*' for black Students with

Disabilities were not well- resourced compared to those for white students with disabilities (Naicker 2005). Students with Disabilities were discriminated against even in mainstream classes by being pulled out for special sessions. (Howell and Lazarus 2003; Swart, 2011). This system barred Students with Disabilities from entry into higher education.

Students with Disabilities are a very minor segment of the total student population in SAHE (South African higher education (FOTIM 2011). The researchers used the capabilities model framework, pioneered by Amartya Sen (1999) ***Sen*** *A. Economics and Health. Princeton University Press ;* 2000 and developed by Martha Nussbaum (2011) to attempt a holistic grasp of the specific complex problems faced by students with disabilities in this study. Disability with reference to this framework results from deprivation of opportunities and choices for a person with impairment and the absence of freedom to choose to do what he or she considers worthwhile (Mitra 2006)

Remnants of discrimination still persist. There are even uptil the time of this study separate institutions for blacks and whites, and hence those that do make it up to higher education from the under privileged class are generally unaware of the culture of inclusion in education and hence are stigmatized.

Disability in this system is not located in the individual but in a limiting societal, economic, political (and educational) system and culture that fails to meet the needs of these individuals (McEwan & Butler, 2007).

2.15 Difficulties in the Implementation of Policies:

Though the South African Constitution and Bill of Rights (Act No 108 of 1996) guaranteed equal access to education for all and the Education Policy Act (No 27 of 1996) has clauses for providing

all learners with quality educational opportunities by reforming amongst other variables - attitudes, teaching methodology, and curricula, there is ambiguity regarding policy wording about goals. The policies lack clarity regarding roles and responsibility for implementation, resulting in poor collaboration and cooperation. The means to achieve this are also unclear. More than 6 White Papers on Inclusive Education Policies failed to bring about reform. It is normal, though, for reforms to go through a period of experimentation and to take time to be established in a final acceptable form. Some progress was undoubtedly made by these plans and policies, but it was piecemeal, with old features persisting. The shortcomings in existing policies also included the absence of follow-up on certain policy recommendations and an absence of consensus about definitions of disability. The situation shows improvements at present through funding, follow-up, and collaboration but still leaves much to be desired.

2.16 Teacher Training and Teaching Methodology:

A foremost requirement for the success of inclusive education is enthusiasm and positive attitudes of the teaching faculties towards inclusive education, the adequate training of staff in the theory and practice of inclusive education, coupled with sufficient support. While the provision for the theory of inclusion is provided, no effort has been made to supplement this with practical steps. Teaching staff generally have very negative attitudes towards catering for inclusion. (Frankel, Gold & Ajodhia-Andrews, 2010) (Bornman and Rose (2010:7). Gustafsson To complicate matters, teachers in South Africa were trained to teach general education or special education. Hence, attitudes regarding the separate education of learners with disabilities have become strongly embedded in the South African teaching culture (Ntombela, 2011). Many teachers do not

hence have the necessary skills to teach learners with disabilities as the needs of such learners are beyond the basic services available in typical general education classes as most South African teachers are over 50 years of age (Armstrong, 2009) and have been in the service for a long period. Hence it is difficult to make them used to new ways of teaching. Support services are also a necessary component of successful inclusive education, either missing, insufficient,, or poorly provided. In Gauteng, the richest and most resourced province of South Africa, it was revealed that most learners with disabilities received specialized support services either "seldom" or "never" (Nel, Müller & Rheeders, 2011:49). (Lomofsky & Lazarus, 2001).

2.17 Attitudinal barriers:

Learning may be impeded by an individual's negative character traits, parental attitudes, and the stigma suffered from teachers and other learners. Education

perceived as not beneficial due to socio-economic constraints resulting from disadvantaged backgrounds. A person may prefer to search for a job instead. Extra costs for assistants and transport that students with disabilities have to pay may be burdensome. In a study at three South African universities, Crous (2004) found 63% of disabled students hesitant to disclose their disability to faculty. This was because of the absence of communication between the students. Students with disabilities should be assisted through a support network made up of family, friends, and trainers. When students do not disclose their disabilities, they are disadvantaged as they do not get the needed support. Roux and Burnett thought that the students at the higher education level should be equipped with self-advocacy skills to request reasonable accommodations and needed services.

Students with disabilities are faced with attitudinal problems from peers and staff, (Howell 2005, Losinsky et al. 2003; Engelbretch and De Beer 2014; Mutanga and Walker 2015) with inadequate provisions from understaffed and poorly coordinated support systems, with barriers related to unmodified academic curricula, inadequate teaching and learning support, poor library services and the paucity of materials in accessible formats. The bulk of library services was handled by a single librarian which made it was problematic for accessibility. The pace of transformation in higher education is extremely slow. It is imperative to involve academic staff in decisions involving suppor (Matshedisho 2007)

FOTIM (2012) carried out a research study across fifteen universities. The major findings were:

- Inclusion of Students with Disabilities in higher education was dependent on their type of schooling and family background i.e., financial status, race and prior exposure.

- There were marked differences in the provisions and functions of the Disability Units across higher education institutions. The larger Disability Units provided most services whereas the smaller ones had provisions only for students with visual or mobility problems. Disability units need to be active and not reactive in order to best serve the interests of those they are set up to support.

- Not all disability types are catered to. A uniform system of disability classification is needed. The medical model of disability is most prevalent.

- The attitudes of the academic staff towards students varied between positive, negative and mixed reactions.

• Insufficient resources may lead to understaffing of the disability unit and delayed delivery of student material (FOTIM 2011, Howell 2005, and Matshedisho 2007a; Naidoo 2010; Sukhraj-Ely 2008; Tugli et al. 2013) (Naidoo 2010)

• Best practice does not necessarily depend on the superior financial capability though the latter is an important contributory factor for provision of adequate services (Howell 2005). This is evident from the example of some small black university colleges. Perhaps the contributory factor in this case is in the motivation to do better, the organizational structure and a spirit of cooperation and co-ordination. Magogwa (2008) in his study at the University of Witwatersrand attributed the high achievement level of the deaf students to the institutional emphasis on deaf education and the provision of interpreting services. (Howell 2005).

This case study is unusual in that South Africa is regarded as a developed country with a developed infra-structure yet has plenty of social and economic problems due to the embedded historical racial discrimination and resulting problems of social injustice.

2.18 An Example of Best Practices in Inclusion from the UK

The case study stated below is one of three that were undertaken as a result of the collaboration of members of the Disability Students Sector Leadership Group (DSSLG), which was presided by Professor Geoff Layer, Chancellor of the University of Wolverhampton. The group constituted of a range of senior leaders and experts from the higher education sector. The Unit supports the group for Education, Universities UK, Guild HE, and the Association of Colleges. The study is in a Report published by DSSLG in Inclusive Teaching and Learning in higher education as a means to achieve excellence (published January 2017). The group aims to

"support all higher education providers in expanding their inclusive teaching and learning practice to draw on the significant work already being undertaken across the sector" and to guide on pathways to good practice. The report mentions that the document should interest "*Vice-Chancellors, Principals, Senior higher education Providers (HEP's), Boards of Governors, and Senior Officers in each HEP*."

De Montfort University DEP (Disability Education Policy) was a two-year program. The board comprised of representatives from the university and the De Montfort Student Union. A member of the Executive Board was the Senior Responsible Officer for the program.

Key Program Outputs Policy: DMU evolved a new *"Teaching and Learning; Student Disability Policy.*" The procedures centered on educating to suit the needs of students with disabilities in compliance with the Equality Act. The policy highlights the university's expectations regarding anticipatory actions and reasonable individual adjustments.

Simultaneously, a fast-track Disability Aid Appeals Process was launched. Reasonable adjustment is well defined across DMU.

Universal Design for Learning (UDL) acknowledges the principle for variability learning and is considered to be part of good teaching practice. UDL gives multi-modular opportunities to represent, engage and express.

In planning for the 2016/17 cycle, the following were significant outputs:

- An audit of all programs/modules and endorsement documents about Learning, Teaching, and Assessment (LTA) approaches. In case the UDL principles were not adhered to then, programs modules were needed to be modified.
- The prerequisites of the Professional Statutory Regulations body was reviewed and any barriers to UDL standards were investigated and modes of overcoming them.

- DMU Replay (lecture capture) policy was initiated for all staff to capture content for levels of higher education for the year 2016-17 and this would be further extended for the year 2018-19.

Disability Support:

- The demand for support was tracked, and inclusive practices were to be followed at all levels of planning. Resources were allocated for Support, Library and Learning Services (LLS)
- The commonly used assistive technology was made accessible through Library and Learning Services and through yearly audit. The utility of the product had to be guaranteed.
- The creation of Assistive Technology Officer Post was made to organize person to person online resources, as a supported measure to promote the use of technology.
- Lists of reading materials were made accessible through the Accessible Formats Service and through the recruitment of additional staff.
- *"Ask and Collect*" service was created to help disabled students to easily access resources (CDs, books and handouts) from library. Students could make online request for materials which would be granted within 4-hour period.

Accommodation:

A 'quiet' specific living environment was set up for students with Autism or other similar disabilities.

Marketing and Communications:

- Wide coverage of disability and UDL in prospectuses.
- The significance of disclosure of a disability stressed by email to all in the pre-application stage.
- The addition of an additional section to Open Day booking forms for identification of specific needs.

It was encouraged to duplicate the practices undertaken by the three universities in the project across other universities in the UK. It was also realized that to truly introduce and embed inclusion across a University it must meet the following requirements:

- Leadership from the top.
- The importance of a holistic culture change.
- The engagement of this ideology right across all spheres of the university.
- The need for the practical realization of resourcing and project planning.
- Embedding practice for successful results and the understanding that change occurs through time.
- A realization that change is through a lengthy procedure of continued commitment.
- Supportive measures for the engagement of staff.
- Maintain standards and make reasonable adjustments.

The lessons to take from the above example are the need for committed leadership, sincere collaboration, motivation, and perseverance at all levels-administration, faculty, and Support staff, mandatory professional development, the entrenching of UDL principles with its multi-modular

approach, adequate adaptations, attention to organizational detail, boosting resources and continual and timely monitoring through maintaining a database for inclusion to be successful. Inclusive education should be more vigorously targeted through marketing campaigns and events to raise general awareness about it.

International views gained from research studies from experiences of Students with Disabilities prove to be beneficial. Multiple studies have been conducted in many countries, such as South Africa (University of South Africa, 2009), the United States, China (Norvilitis, Sun, and Zhang, 2010), Denhart, 2008; Dowrick, Getzel, and Briel, 2004; Graf, Whelley, and Jones, 2004), the United Kingdom (Baron et al., 1996; Borland & James, 1999; Fuller, Bradley, and Healey, 2004; Fuller, Healey, et al., 2004; Holloway, 2001; higher education Academy, 2006; Jacklin et al., 2007; Riddell et al., 2005), and other European countries (Poussu-Oli, 1999; Shevlin et al., 2004).

2.19 Barriers and facilitators to Inclusion in higher education for Students with Disabilities in General

Colleges are regarded as discriminatory from the perspective of access and in granting encouragement to prospective Students with Disabilities (Basel, 2002). Academically students perform better in general education classes and this helps to foster communication skills.

Though the merits of the principle of inclusion have been universally recognized in education, it has not yet been successfully implemented worldwide. This is because it involves many stakeholders- SWD's, parents, educators, support groups, Accessibility Unit staff, and counselors. Legislation alone cannot implement the change. Reform needs a holistic approach involving the entire community, requires a culture change, the attitudes of tolerance and

acceptance of all, a robust administrative leadership and commitment to provide the drive for change, relentless perseverance in effort for Faculty members and support staff, immaculate details in organization and a system of continual monitoring and scrupulously managing data.

Regarding some campuses, legislation has not eased physical accessibility nor are their programs inclusive and in some institution of HE attitudes remain unchanged, causing formidable challenges for Students with Disabilities in comparison to their able bodied peers (Gilson, 2010a; Kroeger and Schuck, 1993; Gilson, Dymond, Chadsey, and Hsu, 2007; Gilson and Dymond, 2011; Durham Webster, 2004; Henderson, 2001). This is further emphasized by DeFur, Getzel, and Trossi (1996) in their statement that "*the presence of a disability cuts the likelihood of earning a degree".* A few SWD's may take longer to graduate as they might choose a lighter course load and fewer credits at a time in comparison with full time students (Jorgensen et al., 2005). This is proven by a study spread over 12 years at a college in Quebec, Canada. (Wessel et al., 2009).

These and other studies show some success rate with SWD's and are indicators of barriers and facilitators. Hence, it is beneficial to explore the common denominators between them to guide future practice of inclusion in higher education.

Below are examples of a familiar pattern of specific barriers and facilitators, emerging from research journals, regarding the practice of inclusion in universities in multiple countries. There are inevitably stories of SWD's successes, then of those who might be inhibited from furthering their education and do not join, and others who drop out. All these situations need to be studied to find standard features- to guide best practice and discover the nature of best remedial interventions. Broadly categorized factors inhibiting or promoting inclusion are related either to the individual or to the social environment. Many studies that have been done on inclusion deal with multiple sub-factors arising from the two named above. Another way in which the sub-factors

are referred to is attitudinal, structural, and institutional or organizational barriers. However, the two categories are inter-related and have overlap, hence it is challenging to deal with them in complete isolation.

Personal Factors:

These factors are of utmost importance and have to do with the individual's strengths and weaknesses, the attitude to the disability, self-knowledge, confidence, self-worth, self-determination and motivation, the independence to make choices, perseverance, social involvement and the outlook on life in general. It was concluded from several studies that positive attitudes in these characteristics are required by all individuals, including SWD's, to succeed.

In the analysis of (Dowrick, Getzel and Briel, 2004) Students with Disabilities require several self-determination skills such as "*self-awareness (including self-assessment); self-advocacy (recognizing and acting upon one's right) self-efficacy (the belief that the person can perform an identified task); decision-making; and independence (initiating tasks and adjusting goals).*" Ward (1988) defined self-determination as *"the attitudes which lead people to define (set) goals for themselves and the ability to take the initiative to achieve those goals*." This would include identifying the essential intermediate steps and efforts to overcome or minimize the barriers. Gerber, Ginsberg and Reiff (1992) had similar conclusions, i.e., self- determination skills such as control over their lives and surroundings, persistence, adaptability to the environment and social networks facilitated success. The respondents with the above characteristics were confident that they would succeed.

In a study conducted by Mott (2004) in which he collected data from 8 students (physical interviews with four and email interviews with the other 4), the respondents listed: study skills,

note-taking, time and stress management, classroom tips in being comfortable, acceptance of a disability as reasons for success. Belch (2005) stated that self-determination, feeling of direction, and having a place are connected with the retention of Students with Disabilities. For instance, sentiments of not belonging to a site may repress Students with Disabilities from revealing and requesting facilities and accommodations (Burgstahler and Doe, 2004; Getzel and McManus, 2005)

In research on motivation, it was realized that the objectives that people seek and the importance placed on activities to materialize particular goals influences the future direction and quality of output, both in academic achievement and social goals. (Covington, 2000).

The family, and specifically the mother plays a crucial role in helping the child to cultivate a positive self-image. Pity and control are damaging while wise counseling and cultivating autonomy help the growth of fuller personalities. The family's normal acceptance of disabilities and positive nurturing of strong character traits can have a lifelong impact. Then the broader community, of which the educational institutions are a part of, must similarly reciprocate ready acceptance to make inclusion a success. This coincides with research done by Feistein & Symons (1999) as the most powerful indicator of the academic achievement of students with disabilities and is also corroborated in a study by Turner, and Heffer (2005).

Non-disclosure of the disability disadvantages SWD's. Some of them face failure, learn from their mistake and develop self-advocacy skills (Getzel and Thoma, 2008).

Cultivating a friendly outlook, meetings with faculty members and open discussions about needs and problems and participation in group activities helped Students with Disabilities to achieve positive outcomes (Corrigan & Matthews, 2003) and made them aware that disclosure improved the behavior of others towards them and would enhance their learning. (Olney &

Brockelman, 2003). According to Braithwaite (1991), the four factors that determine the disclosure of disability are:

1. Relationship with others.
2. Will disclosure benefit me?
3. The attitudes of the able-bodied towards them.
4. The individual perception of his or her own disability.

In the qualitative and quantitative research done by Jacklin, Robinson, and Harris (2007) the universities role in the identification, and awareness of disabilities and their proactive response improved the learning and social experiences of the SWD's.

Martvan Dinther, FilipDochy and MienSegers (2017) published the study "*Factors affecting student's self-efficacy in higher education.* She noted, *Self-efficacy appears to be an important variable because it affects student's motivation and learning".*

A qualitative research by Thompson-Ebanks, Valerie (2014) investigated individual factors of Students with Invisible Disabilities (SWIDs) for their voluntary dropout from a mid-western state college, after completing 60 or more college credits, which represent half of the academic requirements for the completion of a degree. To collect information for this research, in-depth, semi-structured interviews were conducted with the five participants, ex-students with invisible disabilities. 'Retention' is used in this study as an institutional measure of being able to manage to keep a student on the roles, from entry into college through to graduation. Persistence is regarded as a student measure of being able to make it through the graduation. Examining national US statistics revealed that 44% of all withdrawals happen after the second year (Bowen, Chingos, and McPherson, 2009). This fact was upheld by Stuart (2008). He detailed that, in over

ten years approximately 350 students left the University of New Mexico every year, after effective completion of 98 credits or more.

The three personal factors given by all of the five participants in the above study were: their disability, feeling inadequate and financial problems. Accommodations were provided when the students disclosed their disability, but the SWID's had only provided partial information, so faculty and their peers attitude discomforted them. The students themselves were uncomfortable and embarrassed as they had internalized stigma about their disabilities and did not advocate for all the needed accommodations due to the usual perceived negative attitude of faculty and peers towards disabilities in general. Such internalization leads to decreased self-efficacy and self–advocacy. (Dipeolu et al. 2002; Stage and Milne, 1996). Research clearly supports the idea that bias in the environment impacts confidence and sentiments of adequacy, especially over a lengthy period of time and feeds into negative self-appraisal (Dipeolu et al., 2002).

In the absence of needed accommodations, the feelings of inadequacy to meet the expectations of all lead to resorting to a cycle of self-blame and feelings of failure, and this finally resulted in their being dropouts.

Dorwick et al., 2005 and Wegner, 2008 advocated that SWIDs need to master self-determination and advocacy skills to focus, to sharpen memory skills and to avoid changing moods.

The legal right to equal access in higher education needs to be embedded in the psyche of Students with Disabilities, to empower them to request needed accommodations and support, and to make them hence be equal with non-disabled students. They should be taught problem-solving skills to be able to do better at academics. It is imperative that these skills be introduced to SWD’s

most favorably in their secondary school years, but if not then, then at the time of college orientations.

Two of the students joined smaller colleges where they felt less inhibited and completed their studies there. One of them said, "*I surmise I felt substandard just with having a learning disability, so I dreaded that others thought about my mental inability, they may feel that I am worthless and incapable of earning a college degree*." The student's feelings of inadequacy were due to discrimination faced by her from a faculty member which consequently resulted in negative feelings for the university. Another student's inability to achieve the academic standards set by his parents led him to discontinue studies. It is imperative that parents realize the strengths and weaknesses of their ward and be sympathetic about these. Additional work needs to be done on access, friendliness of services and accommodations (Dowrick, Anderson, Heyer, and Acosta, 2005 and Wegner, 2008). Better provisions for websites and online resources for all students might improve the lot of all.

The conclusions from this study are that parents need to be encouraged to be knowledgeable about their ward's strengths and weaknesses and be supportive. To foster inclusive friendly campus communities is a responsibility of academics and helps in the rates of student retention and completion. Other questions that need to be researched are the comparison between small colleges and large universities regarding retention and completion rates. Are small colleges more supportive of Students with Disabilities than large universities? What particular characteristics help in these processes? The limitations of this study were that it was based on a small sample group.

Inclusion requires collective effort and continuous dialogue, research and analysis on attitudes of all stakeholders and university policies.

The study provided evidence for the higher non completion rates for Students with Disabilities and this was dependent on the nature and level of severity of the impairment (Fox, Hatfield, & Collins, 2003; NCES, 2009; Webster, Clary, and Griffith, 2005).

In a research study done by Mary Mange-Lore entitled "*Factors Influencing Academic Performance of Students of Determination in Institutions of Higher Learning-The Case of Middle-Level Colleges in Machaon County, Kenya"* she found a strong connection between parents or guardian's education level and their financial ability with the academic performance of Students with Disabilities. Self-consciousness about their disability led 44.9% of the SWD's to have the feelings of isolation; 55.1% experienced differential treatment on the basis of their disability. Discrimination seems to be the primary obstacle to full participation (Massie 2006).

Recommendations were made about the usefulness of distance education as a comfortable mode of study for Students with Disabilities who found the university atmosphere taxing and for designing courses that are suitable for unique and specialized needs.

Self-knowledge and the development of positive traits, life and study skills at the secondary level should make those with disabilities confident to disclose their impairment at the time of admission and get the required accommodations. Institutions need to cultivate a non-discriminatory atmosphere.

Environmental Factors:

Environmental or Social factors are problems Students with disability face in the living spaces around them. These may be intrapersonal/psychological factors including convictions, comprehension, anticipations, as well as culture, political and economic systems.

Student satisfaction is related to the student's potential, the effect of the nature of the disability (physical, sensory, psychiatric) that influences the experiences that students undergo at universities. This will depend partly on their individual characteristics - whether they have a negative or positive self- image, have the necessary self-efficacy- the ability to set goals and persevere to achieve them, to advocate for themselves, seek social relationships, and participate in social activities. Social motivation strongly influences social behavior, adjustment, socialization experiences (Goncalves, 2014) and academic behavior (Juvonen and Wentzel, 1996; Wentzel and Wigfield, 1998). Being active in social life is a factor affecting health. It is helpful to procure collaboration from support systems. Student satisfaction also depends on a positive attitude to the disability and its disclosure at the time of registration – so as to obtain a proper statement of disability and to be provided with an individual LEP.

The encouraging atmosphere of a university should dispel the inhibitions regarding non-disclosure. A significant influence on the satisfaction of Students with Disabilities and their retention depends on whether the atmosphere is welcoming, accommodative, or discriminatory and unhelpful - how peers and staff relate to SWD's. Academic performance is linked to all these factors and the necessary training or the lack of it of staff, and there being alert to the needs of SWD's or otherwise. Methods of Assessment need to be diverse- matching known potentials of the students. Also, funds should be adequate to procure required assistance from a well- equipped Disability Unit. The physical environment should have been thoughtfully modified to meet the needs of the SWD's.

However, it is a gloomy specter based on some studies that indicate "*universities are among the most discriminating institutions, both in terms of access for certain students – as is the*

case of Students with Disabilities– and in facilitating their continuity in higher education, so that they do not abandon their educational career, prior to earning a degree" (Bausela, 2002).

"From other limited research it was concluded that there is enough evidence that a person with a disability is not popular in both special and mainstream school settings. Based on these findings, it looks obvious that more attention should be drawn to social participation while implementing the concept of inclusive education" (Mand.J. 2007).

Students with a Disability in HE are faced with barriers to learning (Black, Weinberg, and Brodwin, 2015; Couzens et al., 2015; Hopkins, 2011; Macleod and Cebula, 2009; Moriña Díez, López, and Molina, 2015). As a consequence of too many barriers, the SWD's might have poor academic achievement in comparison to non-disabled peers (Reed, Kennett, and Emond 2015). Crow (2003) referred to this as not due to lack of ability but rather '*disabling social, environmental, and attitudinal barriers referred to as the social model of disability*.'

The upbringing of children by parents- as role models, the healthy self that they help to nurture or to stunt, confuse and distort; the reactions of the community-to welcome, accept and embrace those who are different from them or to isolate them and regarding others as inferior; the policies at the level of governments and administrations, their sincere intentions to implement a movement whose worth has been proven or to simply display an outward appearance of conformity while continuing in the old ways. The heart and soul of the educational process are the educators, whose job is not made easy with practicing inclusion – yet the higher pedestal of service on which they are placed, must move them on to compassion for the whole human race, to acquire the proper training and to collaborate to improve practice and offer strategies where all can learn at the pace that they can manage- it is for them to be the prophets of the new change and not prophets of doom. Other sub-factors that matter are attention to organizational detail to make inclusion a success; the

structural state of spaces –helping or hindering disability, differential assessments, attention to a smooth transition from the secondary to the university level, availability of funds and material and workforce provisions in terms of willing support systems and assistive technologies.

The measure of real disability experienced by an individual will rely on the nature of the environment whether positive and empowering (and serves to make up for the condition, and encourage one's participation) or is negative and damaging (and helps to exacerbate the situation, upgrade the constraint, or limit one's practical activities). Social participation requires environmental support. Positive support in inclusive settings helps to promote acceptance of diversity and leads to positive social interactions.

2.19.1 Detail of Specific Barriers and Facilitators for Students of Determination

The preceding section was a general reference to Personal and Environmental barriers to inclusive education. This section comprehensively attempts to deal with all of the barriers. It is imperative for administrators to publicly disseminate the inclusive vision in order to build up consensus for it and active involvement in it. Administrators should provide four kinds of support (Richard Villa and Jacqueline S. Thousand 2003): personal and emotional (e.g. being willing to listen); informational (e.g. information about courses offered, the Disability Unit, Support systems, training provisions and technical assistance); practical (e.g. the provision of reasonable time for teacher meetings); and appreciation (e.g., constructive criticism) (Littrell, Billingsley, & Cross, 1994).

The following act as barriers or facilitators in the process of inclusive education. These are mentioned in the order in which they need to be tackled.

Administrative Support:

The most significant barrier to inclusion happens to be when institutions of higher education lack the ethos of inclusion. If the enthusiasm and whole hearted support of the management is not present then it could only end up as a fragmented exercise. Disability policy should be embedded within HE institutions. Systematic cooperation between the domains of teaching and management are needed to make inclusion a success. The support of university administrators who display leadership qualities, inspiring team members to cooperate in the planning stage and in the assessment of educational materials is needed (Kent-Walsh & Light, 2003). They are responsible for providing faculty and auxiliary staff, the support, time and resources they require for their students to utilize alternative and augmentative technologies in inclusive classrooms (Jorgensen, McSheehan, Sonnenmeier, & Cicolini, 2002; Kent-Walsh & Light, 2003; Nochajski, 2001; Thousand & Villa, 1992).

Inclusive values are advanced through the adoption of a universal mission statement without causing conflict between general and special educators (Ainscow, Booth, & Dyson, 2004; Avramdis et al., 2002; Carrington & Robinson, 2004; Kane, Head, & Cogan, 2004; Vlachou, 2004). The aim is to actively make inclusion a success through on-going programs, discussions and conferences on a national and international level through concerted efforts. Proactive administrative policies and support are vital in all areas of inclusion- aiding smooth transition, affording easy accessibility, proper monitoring systems in place to guide sustainable progress, providing equitable opportunities for all to progress in academics and in life.

Transition:

Article 24 of the United Nations Convention on the Rights of Persons with Disabilities requires nations to provide equal access to an "*inclusive, quality, and free primary and secondary education, vocational training, adult education, and lifelong- learning*" (United Nations, 2013). A consequence of the UN Convention is an increase in efforts by several countries throughout the world to ensure SWD's are participating in higher education (OECD, 2003, 2011, and UNESCO, 2007).

However, the very first challenge faced by SWD's in pursuing higher education is handling the transition from the secondary to the university level. There are many differences between the secondary school environment and the university setting. Schools have a more close-knit environment, wherein peers and teachers have stronger bonds with each other and there are closer connections between the family and the school. University life at present, compared to school life for SWD's, is like a leap in the dark. There is literature on the topic of transition, and some of the most developed countries have rolled out detailed procedural plans. However, still, the challenge largely remains on a universal basis.

The importance of university education for those who have the potential for it cannot be downplayed. It has been declared that *"access to competitive, high wage employment is predicated upon receiving both a secondary degree and some university training certificate or degree.*" (Neild & Boccanfuso, 2010) The under-representation of SWD's in university education combined with high unemployment rates for this population severely impacts the future quality of life outcomes for youth with disabilities (Kohler and Field, 2003).

As a result of economic challenges, the governors of most states in America signed a pact to focus on the K-12 education system on graduating all youth "*college and career ready*" (Achieve, 2010) and to ensure that all youth possess the academic skills needed to enter and complete some form of university training or education program. While "*college-ready*" is associated with meeting grade-level math, writing, and reading skill benchmarks, the definition was recently expanded by the Career Readiness Partner Council (2012). It also includes a combination of self-awareness and workforce skills that youth need to identify and engage in the educational pathways that lead to their desired career goals.

- SSA (Social Security Administration) conducts youth transition-related demonstration (YTD) projects to provide a variety of services and supports.
- A good deal of curriculum development work has been done in formulating transition curricula for those with disabilities. One example is mentioned below.

STEP (Student Transition and Educational Planning) is intended to empower students with transition preparing skills. It includes sixteen lessons, with four units. They are related to:

1. Getting Started: it presents planning for transition and encourages student engagement.
2. Self-Exploration and Self-Evaluation: has activities for the identification of strengths, weaknesses and interests.
3. Self-developing Goals and Activities: lead to the formation of goals.
4. Preparing a Plan: teaches about the application process and planning for transition.

- Similarly various curriculum modules are prepared by career and technical education experts with career clusters, a collection of similar occupations, to realize varying arrangements of academics, vocational sessions and community-based work skills. (Kochhar-Bryant, 2008).

- Parallel initiatives have been advocated by the United States Department of Education and Labor to ensure that youth with disabilities experience a successful transition to post-secondary education or training, employment, and independent living. Transition was improved through legislation involving families in the transition plan. The Federal government-sponsored national technical assistance centers to provide resources for transition and employment for People with Disability and for their families, for schools and employers.

- The Federal Government developed Transition readiness strategies through:

    1. a research-based national transition framework, the Guideposts to Success.
    2. by the formulation of college and career readiness preparatory programs,
    3. by emphasis on Individualized Learning Plans (ILPs) to help progressively in acquiring higher education.

The Office of Special Education Programs (OSEP) in the United States is responsible for overseeing transition provisions mentioned in the Federal Education Act (IDEA, 2004). It requires Individualized Education Programs (IEP) by age 16. In some states as early as Middle School, students have options for types of courses. An alternative, non-standard secondary graduation diploma is available for youth with disabilities. These diplomas however, may limit the student's ability to enter and participate in, or receive financial aid for university education, which then limits their employment opportunities (Johnson, Thurlow, & Stout, 2007)

The IEP is based on the academic strengths and educational choices that a student wishes to follow past the secondary level. These plans result from counseling and collaboration between students, transition coordinators, counselors, teachers, and parents. The focus is on preparing realistic and timely strategies for an orderly transition. IDEA (2004) instructs schools to update the IEP document to help students with the identification of HE goals, rehabilitation objectives

and to identify suitable transition services. The IEP should include the student's placement classification, academic and behavioral goals, modifications, accommodations, and services such as one-on-one aide and therapies, behavior plan if required, the average percentage of time given in the ongoing education system, and progress reports from instructors and specialists/therapists. The IEP can be presented to the Accessibility Department at the time of admission to the university level. Students are then helped in their ILPs (Individualized Learning Plan) to develop an education course plan aligned with their future career goals. Transition Coordinators may, at the school district's option, provide support services for a time period even after the student graduates (Jackson, 2003). State and district officials have reported that ILPs have resulted in the youth with disabilities to select the standard high school diploma because their career exploration has resulted in greater awareness of how their academic and post-secondary training/education are connected to achieving their career and life goals. Families, educators, and students have reported that engaging in ILPs is a valuable experience that results in families feeling more connected to the school, youth participating in more rigorous coursework, and educators holding higher expectations for the success of youth (Budge, Solberg, Phelps, Haakenson and Durham, 2010).

However, there are some concerns regarding whether ILPs support youth with significant disabilities. Some of the challenges are accessibility of assessments and career information for this category (Solberg, Wills, and Larson, 2013).

The following are some of the other options available to students completing secondary education:

- College Access Programs provide high school students facilities to enroll in some university courses to prepare for college course work. These programs are offered in the final high school year and may grant the student extra credits. Most of these courses are prerequisites for

college-level courses and include academic, social and emotional support and guide students through college application procedures to procure financial aid. One example of this is the Middle College High School Program which helps low achieving students to succeed in university education.

- Linking Secondary and Post-secondary Systems. Secondary-Postsecondary Learning Options (SPLOs) are schools and programs that link secondary education with 2- and 4-year IHEs, and permit high school students to take college-level courses for credit and not for credit;
- K-16, P-16, and P-20 Councils: It is a seamless education system advocated by local communities and states covering from preschool through college under a singular system.
- A K-16 system integrates a student's education from kindergarten through a 4-year college degree.
- A P-16 system integrates a student's education beginning in preschool (as early as three years old) through a 4-year college degree.
- A P-20 system develops the P-16 system to and including the graduate level.

Another model for supporting the transition of youth with disabilities to university education is "*Think College.*" A dissemination center provides an overview of various options available for students with intellectual disabilities, the programs offered for them and all the supplementary information needed, accommodation and costs, etc. This is provided as a resource for students and their families contemplating the higher education option.

The programs improve university education participation among youth with disabilities by focusing on youth development and help in changing the attitudes of university educators and staff towards inclusion.

- Centers for Independent Living (CILs) provide peer counseling, independent living skills training, information and referral services. They are managed by a cross-section of people with disabilities.

- The US Department of Labor under the Workforce Innovation Opportunities Act (WIOA) of 2014 provides youth with information on training provisions and career pathways to help them gain employment. This involves skill assessments and the formation of an Individual Employment Plan (IEP) documenting goals and the services required for obtaining those goals. It involves career planning, financial literacy, counseling, work-based learning and follow-up services (Workforce Innovation Opportunities Act, 2014).

- Trade and Technical Colleges: Programs in trade and technical colleges are designed to prepare students for employment. A course of study may be taken with a prerequisite of a high school diploma or a General Educational Development (GED) Certificate. These colleges offer a variety of options, including associate degrees, certifications, and work apprenticeships.

- WRP (Workforce Recruitment Program) connects private and public businesses across the nation with energetic university education students and alumni with disabilities who are anxious to demonstrate their workforce capacities. The federal government sponsors several technical assistance centers that create and disseminate resources to state and school district officials on issues related to preparing SWD's to make successful post-school transitions. These centers are the National Secondary Transitions Technical Assistance Center (NSTTAC, 2014) and the National Center on Post School Outcomes sponsored by the US Unit of Education Office of Special Education Programs. NSTTAC collects and distributes evidence-based practices for transition service interventions and curriculum (Test et al., 2009)

- The National Center on Post-School Outcomes focuses on supporting states tracking youth enrollment into higher education, training programs, and employment.

The US Department of Labor's Office of Disability Employment Policy sponsors the following additional organizations to help in the transition process and to procure the required accommodations. These are:

- National Collaborative on Workforce and Disability for Youth (NCWD/Youth) It provides resources for designing transition related services and activities using their research-based national framework called the Guideposts for Success (2009).

Job Accommodation Network (JAN). It works with employers and colleges to design accommodation resources to support youth and adults in making successful transitions.

- Employer Assistance and Resource Network (EARN)
- National Center on Leadership for the Employment and Economic Advancement of People with Disability (LEAD).

The above examples indicate many diverse options to assist individuals with and without disabilities in education, training and employment. (Wills and Luecking, 2003). The report identifies teacher and school factors that affect student achievement and social-emotional development and provide a tool for educators to reflect upon their own practice.

Hence, students must be prepared methodically over the period while still in school for the university level or the world of work, as the case may be. It is hoped that they be helped to cultivate the necessary readiness, are given information that is important for them in setting realistic goals, in recognizing their interests, in building up social-emotional skills of self-advocacy, self-determination, independence, time management, study skills, scheduling, and leadership and are taught to stand up for themselves and to be informed about the pathways to be followed in

achieving their goals. They and their parents are to be provided with opportunities to connect with staff from the different university departments that oversee student transitions, provide access to accommodations, and meet the educators from the accepting institutions. Other connecting activities include meeting the people who will be involved in supporting their healthcare needs, access to employment, and other advocacy support organizations that could improve their quality-of-life outcomes.

Families need to be offered information about the world of work, job requirements, and the various systems that will support their ward's career development. This is done to involve families in providing support and advice in the choices that students make regarding courses of study and careers.

Transition services are to be provided by Secondary Transition Coordinators who must possess the knowledge and skills to work with all stakeholders to create an effective interagency (EDU/EDPC/SEN (2010) which typically must work with students when they reach age 16 but it could even be much earlier, according to the recommendation of IEP team, or as required by law. However, the transition coordinator consults the IEP team and general and special educators as well as the student and his parents, to identify the interests and goals of the student. Accordingly, a course of study is recommended. The coordinator provides opportunities for students to have the know-how about different careers through videos, job shadowing and hands-on work activities. The coordinator identifies needed support services/ accommodations and helps the students in preparation for transition to university, through helping with properly assembling their portfolios, with academic records, job experiences, resumes, and university recommendations. (Jackson, 2003).

School Counselor/Guidance Counselor assists students in assessing their potential, talents, interests, and personal characteristics and provides help with personal, family, education-related, mental health, and career problems. The Counselor advocates academics for students, works with companies and. helps to create reasonable academic and career goals. Counselors use counseling sessions, psychometric tests, and different strategies to evaluate and advise students. They additionally run career information centers and career education programs.

A state performance plan (SPP) and an annual performance report (APR) is required to be submitted by each state to the Secretary of Education to evaluate the state's performance relative to the requirements and purposes of IDEA and to inform about future plans regarding 20 specific indicators.

In an analytic study that was done with 121 youth with disabilities, the results indicated that youth who reported more access to Guidepost related experiences also seemed to have more career search self-efficacy and predicted more engagement in goal setting (Solberg, Howard, Gresham, and Carter, 2012).

These results suggest that youth who are provided with the range of quality learning opportunities outlined in the Guideposts for Success may be more likely to develop management skills and may be better able to prepare for a career through a heightened understanding of self. In turn, this supports the emergence of self-regulation strategies to seek learning opportunities, to realize self-defined career and life goals, academic self-efficacy, and better management of stress and psychological/ emotional distress. They also tend to have more work-based learning opportunities and more reliable connections with teachers and peers. (Solberg and Gresham, 2012)

The United States has developed a range of strategies and resources to support overall transition readiness. It has a variety of organizations to support the transition to employment and

university education participation but the percentage for individuals with disabilities still remain disproportionately low (Moroto and Pettinicchio, 2014).

The Disability Unit at campuses can serve to ease transition by providing information, services supports and by arranging visits for potential SWD's, and their families and by educating them about highlights of particular post-secondary programs. Extensive summer orientation courses could be offered to acquaint students with the admissions application procedure and requirements, and survival skills for the next level and to acquaint the student with the post-secondary environment. The SWD's need advocacy on their behalf to ensure that their rights are protected under Section 504, to be able to negotiate "*reasonable academic adjustments*" with faculty and administration, while maintaining the integrity of the curriculum.

Students with learning disabilities need to be clearly known. The transition coordinator needs to coordinate with admissions officials to guarantee that learning disabilities are equitably cared for. Rules and guidelines regarding admissions, identification, accommodation, curriculum needs, and service delivery need to be in written form.

Thorough progressive transition planning needs several areas to be addressed- individual responsibility, relationships, home and family, recreation interests, community involvement, education, employment and emotional and physical well-being. Post-secondary institutions need to continue communication with secondary schools to decrease the paucity of information regarding the process of obtaining services and facilitate the process. The students should be helped to establish goals to engage in and assist them in transition to a post-secondary institution (Garrison-Wade & Lehmann, 2009).

Novakovic and Ross (2015) held a program entitled, "*College Student for a Day,"* helping Students with Disabilities to visit a post-secondary campus to gather information about the

institution and its services in order to prepare for enrollment and ease in transition. Patrick and Wessel (2013) found that transition was more successful when using the services of faculty members.

For students with learning disability, universities need to inform and make them aware of their available resources. Disability service officers need to acquire knowledge about services available at higher education institutions and the processes mandatory for attaining them (Burge, 2012; Gil, 2007).

Faculty and special educators could improve their expertise by attending in-service training, professional development, customized and general technical provision workshops; summer institutes; distance learning; training in the usage of assistive and educational technology, research related to university Students with Disabilities and by attending demonstration projects funded by the ED (Education Department).

Staff may be employed to provide technical assistance and professional development to enhance the knowledge and skills of special educators regarding transition strategies, including how to effectively use transition curriculum and career assessment and development tools. Consultants should be hired to integrate data regarding transition services for Students with Disabilities into other data collection systems to be able to efficiently support and track student achievements. Open online course materials, such as interactive tutorials, simulations, and multimedia programming helps students efficiently learn in minimal time.

The findings of GAO (Government Accountability Office) emphasize significant factors affecting the transition of youth to university education and employment as a weakness of communication between schools and service providers, lack of community work experience at the high school level (GAO, 2003) poor coordination of services, a change in responsibility from the

parent to the student in updating the IEP, insufficient preparation of teachers, counselors, administrators, and certain service providers and issues in data collection

Students with Disabilities need to persist on their selected pathways for optimum achievement and the avoidance of misunderstanding and conflict with university staff. (NCD's Youth Advisory Committee, 2003).

One of the major obstacles to efforts designed to maximize access to university education, employment, and quality of life outcomes is a lack of coordination and collaboration between secondary education, labor, university education, and vocational rehabilitation service sectors (US Government Accountability Office, 2012).

Collaboration between SEAs (State Education Agency), LEAs, (Local Education Agency) other state agencies, service providers, and IHEs information on training provisions and career pathways are needed. Programs like the Pathways for People with Disabilities to Tertiary Education and Employment (TETRA) could be developed as in the United States.

Though the number of students entering the portal of higher education institutions has risen from among those with Learning Disabilities a high percentage, about 70% leave before completion (Lightner et al., 2012). Hence, the transition from the Secondary to the university level is a lengthy, drawn-out procedure that needs timely, careful deliberation, organization, and collaboration by multiple stakeholders to be successful. The lack of collaboration between the two. The needs of students with disabilities in university are more or less the same to when they were in school, except now they have to be more self-directed in managing their own lives (Getzel & Thoma, 2008). The problem students with disabilities often face is that they cannot evaluate their performance, do not have a sense of empowerment, and are often unaware of their strengths, interests, and limitations (Hong et al, 2007& Wehmeyer, 1996;). The lack of self-determination

leads to challenges in academics, emotional stress, and social awkwardness. As a result, they struggle to assimilate into a new environment (Frieden, 2004; Barbara S. S., Hong, et al., 2007; Rosenbaum, 2004). There is a general paucity of information at the higher education level about student needs. Lack of disclosure further exacerbates the situation and prevents smooth transition.

2.19.2: Application, Admission and Interview Stage

The first procedure that SWD's must go through during the admission process is familiarity with filling in the application form and going through the interview process. They should have been introduced to this process while still at the secondary level during preparation for the transition.

Disclosure:

The disclosure of disability at the university level is not compulsory but optional, though it is recommended that one do so, to benefit from the services provided. Various problems can arise regarding disclosure. If a student believes that support is no longer needed and in reality, he needs the accommodations, it might be negatively influencing academic success. Students of Determination are often unwilling to utilize services and accommodations since doing so may clash with their freedom of choice or because of lack of knowledge (Marshak et al. 2010). Others might not have a Disability Statement as the school they were at failed to assess them or they might have a Statement that is incomplete and does not mention some of the health problems they might be faced with. Many a time students do not wish to disclose their disability as they believe that their peers would stigmatize them or from a fear of differential treatment (Habib et al., 2012; Mortimore and Crozier, 2006). They might feel that they would be regarded as deficient by faculty

and that disclosure would prevent them from being granted the choice of subjects they desire to follow, and later on in life they might be discriminated against in the world of work.

For a student to receive accommodations, the disability must be disclosed at the earliest, to help achieve a smooth transition to the university level. Time is required to tackle Individualized Education Program (IEP) targets (Beukelman & Mirenda, 2005b; Calculator, 2009; Cushing et al., 2005; Downing, 2005; Sonnenmeier et al., 2005) as these may vary according to the nature of the disability which exists across a wide spectrum. Hence it is imperative to visit the Accessibility Unit at the earliest possible, before the term begins.

The failure to accept disability (Jacklin 2011, Riddell, and Weedon 2014; Shakespeare 2006) or to view it negatively or burdensome (Madriaga 2007; Barry and Mellard, 2002; Roessler et al., 1998) backfires on the person. Another negative impact of non-disclosure could be they would not receive funds that they would otherwise be entitled to.

Some disabilities are apparent, for instance, a person with mild cerebral palsy, and they may be catered for, but Learning Disabilities like Dyslexia or Psychiatric disabilities are initially unnoticeable. Another problem that may arise is for the student to not to have self-advocacy skills, which should be taught at the secondary level to help students to be responsible, independent individuals, to manage themselves, and to self-identify disability. This is difficult for those with impairments and with weak self-esteem (Barry & Mellard, 2002; Hartman-Hall & Haaga, 2002)

In the United States disability is disclosed to the HE disability service office. (Stodden, Kim-Rupnow, Thai, & Galloway, 2003). The request for the required reasonable accommodations must be supported by relevant documentation (Loewen & Pollard, 2010) (Pliner & Johnson, 2004). If the accommodations do not meet the student's expectations, proactive interaction with faculty

is needed to get a suitable replacement (Lancaster, Mellard, & Hoffman, 2001) or else they will only be given general accommodations.

The support network and the disability culture familiar to Students with Disabilities in secondary school drastically changes in college (Cawthon and Cole, 2010; Stodden et al., 2003). In the secondary setting the students are relatively in a small, familiar, tight-knit community where they might be cared for by parents, teachers, and the peer group, but beyond is an impersonal world where SWD's have to find their bearings to survive. This may be further aggravated by the negative environment of the institution through the faculty members and non-disabled colleagues (Barnard-Bark et al., 2010; Lynch and Gussel, 1996; Marshak, Van-Wieren, Ferrell, Swiss, and Dugan, 2010; Hargreaves, Dearnley, Walker, and Walker, 2014). Many students prefer to discuss their disabilities to obtain accommodations only after being accepted to the program. Positive responses were reported once their disability was made known, as arrangements at that point may be relatively easy. However, if a student waits to request accommodations until a need arises, it may not be easy to fulfill the request effectively. Olney and Brockelman's (2003) study about disclosure by students with psychiatric and cognitive disabilities revealed that the decision to disclose is complicated, involving the students working to manage external factors such as negative evaluations by others and internal factors related to the organizational infrastructure. Hence it is likely that for some, the required accommodations might not be advocated for.

Easy Access for Admission: The Entry Exam, Physical Barriers, and Course Choices

An orderly transition from the secondary to the university level depends upon accessibility to prior, clear information about universities, courses, and support offered. The SWD's should be prepared at the Secondary level attitudinally and by arranging visits to universities to help them make seamless transitions. Collaborative research to understand student's information

requirements going into HE was conducted by Oakleigh Consulting and Staffordshire University (higher education Funding Council for England 2010). This research recognized 16 items of information that students desire and contributed to the recommendation of evolving Key Information Sets. These would allow readily comparable data on all university courses. This study was interested in analyzing whether Students with Disabilities in Northern Ireland felt they had sufficient information before the transition to make an informed decision.

The entrance exams for particular categories have to reflect diversity in the format of the exam paper and the method in which it is conducted. Some students need more time, while others need frequent breaks; still others need a quieter location; hence a separate room is advisable. SWD's may face discrimination at the time of admission because of their disability if it is visible, but this may also be due to the type of entrance exam they need to take.

Admissions to higher education are based on academic merit with respect to which Students with Disabilities might be denied (Pumfrey, 1998; Thomas et al. 2002 and Fuller et al. 2004). merely based on their disability for instance to courses leading to certain professions like medicine and teaching (Borland and James, 1999; Konur, 2002) though they might have scored above average marks. Assembly Bill 705 was passed to remedy this kind of situation in the USA. It prompted some universities to scrap the Placement Test and, in other cases, provide a testing guide to prepare for the test or to admit students based on their higher secondary grades.

Another factor that can play into this is the quota of seats that universities allocate for specific subjects. This then can lead to raising the level of the entrance grade and can become an issue of fierce competition leading to marginalization, as happened in the case of the two Northern Ireland universities. The number of applicants in demand outstripped the quota mentioned by the

Department of Employment and Learning; hence the universities were granted the request to raise the grades for the entrance exam (Osborne, Smith, and Hayes, 2006).

After the Application and Placement Test Phase, a written confirmation of *'Reasonable Accommodations'* to students and HE staff is provided. It may emphasize the provision of particular Assistive Technologies (AT) to help reduce the effect of disability as a result of the Needs Assessment and to help promote independence. It may state the need for flexible deadlines due to the impact of a student's disability.

Collaboration between the secondary and university levels through the documents provided by schools can help to inform the Accesibility Unit at Registration time about the IEP of a particular student, at the student's discretion. Based on the history mentioned in the IEP, the nature of the disability of a student, strengths and weaknesses, goals achieved, choice of subjects, and future plans, the SWD is entitled to request and be provided with *'reasonable accommodations'* after a Needs Assessment has been made. At this stage a new IEP needs to be prepared to set short- and long-term goals and to record progress on a regular basis. Accommodations help towards the fulfillment of rights and needs on an equitable basis.

Choice of Courses:

A student facing this kind of barrier would naturally opt for entrance into a university which eases this barrier. In this instance, the choice of courses may not necessarily be the foremost choice desired by the student but is dictated by ease of access. In earlier research (Baron et al., 1996; Borland and James, 1999; Tinklin and Hall, 1999) it was deduced that students with mobility disabilities did not have the same range of courses to select from as their able-bodied peers due to physical inaccessibility of the institution as their first choice. (Borland and James, 1999). Some

students with mobility disabilities may choose institutions closer to their homes, partner or family, or near hospitals in order to access treatment (Fuller, Healey, et al. 2004 and Jacklin et al. 2007).

2.19.3 The Role of the Accessibility Unit

The unit is responsible for multiple types of access. Access might refer to physical, attitudinal and curricular access, modes of teaching (Hadjikakou et al. 2008), presentation and appropriate assistive devices (Beilke and Yssel, 2016; Borland and James, 1999).

The services of the Accessibility unit are a lifeline for SWD's and hence where they are efficiently managed, the role of the unit is much appreciated, as noticed by Matshedisho (2010) and a poor uncoordinated approach by the Unit has the opposite effect.

There should be clear information about the procedure for getting accommodations many people don't know that the Accessibility unit exists or they don't know the location. There has to be clear criteria for what accommodations you can get for which disabilities. The staff at the Unit needs to be supportive.

An important research in South Africa on service provisions for Students with Disabilities was executed by FOTIM (2012) with the aim of describing and analyzing the experience of Students with Disabilities, and the purpose, and functions of Accessibility Units in HE in that particular context.

This research was carried out in fifteen universities. The general findings were:

- The role and functions of Units vary.
- Differential classification of disabilities exists amongst Accessibility Units.

This may also result from the Accessibility Units being under the jurisdiction of another department which may have conflicting views about inclusion and hence lack of

coordination may affect the type of services provided (FOTIM 2011; Naidoo 2010). The Counseling Services view disability through the pathological lens and strengthen the perspective that disability is a medical condition (Swart, Chataika, and Bell 2014). Disability in the South African context was being defined in medical terms i.e. as a deficiency.

- Often there was an un-coordinated approach to disability issues- responding piecemeal to situations that arise- rather than being in a mode of readiness with strategies in place to handle any situation.
- The number of Students with disabilities was approximately less than 2 percent of the entire student population of the institutions mentioned in this study and this is an indicator of this population being a minority in other contexts too.
- Provision for all types of disabilities may not be made at smaller Accessibility units- in this example the smaller units only attended to mobility impairment. A similar observation was made by Stodden and Conway (2003) about post-secondary educational facilities in the US that they differed between states and from campus to campus, and were usually not well developed. They may provide information and remedial content and may not concentrate on the development of the self and independent learning skills.
- best practice may not always result from superior financial capability though the latter is an important contributory factor for provision of adequate services- leadership, motivation and organization play a more important role.
- insufficient resources may lead to under-staffing of the disability unit and delayed delivery of student material. This may be particularly true for discriminated

institutions like the historically black higher education institutions (FOTIM 2011; Naidoo 2010).

There are many different versions of Accessibility units between the two extremes. The desirable norm is an adequately stocked and staffed Unit with dedicated personnel.

Others have pointed to the fact that the Accessibility Units keep SWD's out of mainstream higher education activities (DHET 2013; FOTIM 2011). It is a fallacy to stereotype and discriminate against those with disabilities and to treat them differently. The services of Accessibility Units may reach only a small percentage of Students with Disabilities due to inadequate facilities, limited finances, and exorbitant costs of specialized services, inaccessible curricula and IE programs, scarcity of transportation, and the presence of social stigma. (Al Lawati, 2011; Kronfol, 2012 and Wehbi, 2007) Other questions that need to be answered are if the Accessibility department is adequately staffed with the full array of personnel that should be part of the unit to be able to provide support: psychologists, sign language interpreters, speech and language pathologists, physical and occupational therapists (Al Thani, 2006) and whether it has the will to deliver diverse special education needs.

The Accommodations that the Accessibility Unit provides are to be embedded in UDL, which is a design for learning that caters for maximum capabilities through its triple principles of maximum representation, expression, and engagement and is structured in a manner which makes it possible to even include those at the margins and provides the wide spectrum of SWD's the particular provisions suited to their needs, and grants them the opportunity to take state assessments and succeed.

Students may require help with social skills, building self-advocacy skills, or managing the academic impact of their disability (i.e., attendance, procrastination, planning, and organizing).

For training in these skills, the Disability unit may liaise with a range of different specialists, Psychologists, Occupational Therapists etc.

Ron Mace (Mace, Hardie, & Place, 1996) created the term *'Universal Design'*. In this concept all new environments and products, irrespective of age, capability and situation are to be utilized to the maximum level (Iwarsson and Stahl, 2003; Preiser, 2011). In an HE setting universal design relates to the physical environment, modes of instruction, services and technological devices to allow Students with Disabilities to have equal opportunity, to access academic programs or a job (US Unit of Education, 2007). This would simultaneously require monitoring the effectiveness of products and environments. It would imply, for instance, changes to the application procedure in its format for program enrollment for those with vision and hearing impairment.

Accommodations do not involve changing the curriculum or the content but require rigorous planning for the presentation of materials and activities for persons with diverse abilities, and to help encourage engagement in the diverse ways in which individuals function. Examples of accommodations include multiple means of engagement, for example, arranging appropriate seating for a visually impaired person, providing enlarged text and a Braille version of an assessment, providing grading options for those with severe disabilities, providing an assistant for a blind person and a sign language interpreter for a deaf student etc.

Nolet and McLaughlin (2000) described instructional accommodations as "*a service or support that is provided to help a student fully access the subject matter and instruction as well as to demonstrate what he or she knows.*"

There are differential challenges for accommodations resulting from variations in the types of disabilities, the most difficult of these challenges are related to ADHD, Autism, Learning and mental health.

There is controversy about appropriate accommodations for psychiatric and learning disability disorders (Phillips, 1994). Faculty generally feel it more difficult to accommodate those with psychiatric difficulties (Barry and Mellard, 2002; McEldowney Jensen et al., 2004; Shevlin et al., 2004). However even for this group of students there might be need for reduction in the content to suit their abilities and their stamina.

Students with severe Disabilities earn more credits in general education compared to students with other types of disabilities (77.0% for students with learning disabilities, 67.2% for students with emotional-behavior disorders) according to Newman et al. (2011).

Hadjikakou and Hartas (2008) discovered that assistance for Students with Disabilities at several Cypriot higher education institutions was regarded as an extra service, though for it to fully benefit it must be regarded as an integral part of organizational practices and must be enthusiastically engaged in. It is regrettable that lecturers felt burdened by this responsibility (Cole and Cain 1996). The solution lies in having smaller classes and additional Support services. probably lies in making Accommodation in classrooms and curriculum modifications help to improve proactive participation of students in general education (Armstrong, Lynch, & Severin, 2005; Calculator, 1999, 2000; Kent-Walsh and Light, 2003). Modifications are changes to learning goals, teaching processes, assignments, and/or assessments to accommodate a student's learning needs. Modifications should be considered for those students whose special needs are such that they are unable to access the curriculum (i.e., students with limited awareness of their

surroundings, students with fragile mental/physical health, students medically and cognitively multiply challenged).

Regarding curriculum, those with disabilities could be made responsible to master fewer elements, to remember fewer examples and their learning goals may differ in being simpler or geared to their interests.

According to Belch (2004) in present practice, inclusion often means that all features of the different environments invite all individuals and are available to all. In practice incorporating needs of the SWD's are frequently afterthoughts. Lack of disclosure exacerbates the situation as does decreased motivation of Faculty to implement accommodations

Numerous research studies evaluated accommodations in terms of traditional academic results (McKenzie and Schweitzer, 2001; Mpofu and Wilson, 2004) i.e., relative to grades and drop-out rates (Foreman, Dempsey, Robinson, & Manning, 2001; Jorgensen, Fitchen, Havel, Lamb, James, and Barile, 2005) and not in terms of whether these accommodations efficiently permitted participation of those with diverse disabilities in a range of features of campus life (Fuller, Healey, Bradley and Hall, 2004). There is however a need for the overhauling of methods of assessments.

In research done regarding the prompter/scribe accommodations, a link has been shown to exist between enhanced student grades. (Elliott, Bielinski, Thurlow, DeVito, Hedlund, 1999) Koretz and Hamilton (1999) in a number of studies in Kentucky state assessments evaluation of the dictation accommodation indicated that it leads to increased scores for most Students with Disabilities (Koretz and Hamilton, 2000).

An analysis of a survey of 63,802 students at 11 four-year doctorate-granting universities throughout the U.S. in year 2000 revealed self-reported LD to be a highly prevalent condition that

is associated with a different and less satisfying university experience. This is corroborated by other studies that students with learning disabilities and attention deficits lack self-awareness face the most difficulty in explaining their limitations or selecting accommodations they need (Duquette, 2000). Only a minority of students with LD had accommodations, but those who did have the accommodations reported more contact with faculty and less difficulty with assignments. According to the National Academic Advising Association, the student's interaction with the concerned adult in the university is one of the key factors for retention. (Habley & McClanahan, 2004). Variations in disabilities and personality traits will impact students differently for online courses.

Some may find a peaceful atmosphere more conducive to indulge in gainful study. In contrast, others can be severely challenged and will need support services, personal aids, and technological resources. Due to the coronavirus-19 pandemic in 2020, most teaching and learning is universally being conducted online. In the USA, progressive institutions are developing algorithms using demographic data, based on enrollment and admissions information which is then paired with in-course activity data, tracking the number of log-ins and page views, number and length of online postings, minutes spent on the course website, and attempts at quizzes or other assessments. (Jeff Doyle, 2020) This helps in taking remedial action and to inform future Practice.

Timely, constructive, relevant and comprehensive feedback from the pre-university institutions, earnest disclosure by SWD's at the time of admission, early identification of specialized learning needs and disabilities, and the proactive provision of educational support services to students, a well-stocked and well-staffed and trained Accessibility Unit and a faculty that is well-trained in inclusive methodology, cooperative and sensitive to the issues of inclusion can help improve the quality of services provided. The accommodations need to match the needs

of variant disability types- in class and online. For those with severe disabilities courses need to be modified i.e. simplified and reduced and the methods of Assessments also need to be altered. Online teaching and learning particularly for those with severe disabilities is challenging and needs further research. For this category of students accommodations need to encourage their participation in social life as well and hence help improve their quality of life.

Resource Center:

To meet the variant needs for different disabilities, the Resource Center in the Accessibility Unit must be adequately stocked with Assistive Technologies (e.g., spell-checkers, voice-input software, electronic reading machines, talking calculators, computer-screen readers and magnifiers, specialized keyboards, and tape recorders, portable note-takers, optical character recognizer, Braille Embosser and Translator, Tactile Maps and Bio-Aid etc.). Some of these devices help to effectively and efficiently access means of communication (Calculator and Jorgensen, 1994; Downing, 2005; Kent-Walsh & Light, 2003)

Soto, Muller, Hunt, & Goetz, 2001 said that students with certain specific speech, comprehension and writing disabilities need to be trained in AAC skills to be able to successfully communicate and develop student membership, to network and socialize (Blackstone & Hunt-Berg, 2003; Calculator, 2009; Doyle, 2004; Light, Parsons, & Drager, 2002). The teaching of AAC skills needs to be a team decision (Knowlton, 1998).

The provision of Assistive Technologies is a legal requirement for educational institutions in many countries. They are aids for students to work independently and to share and access information and must be tailored to the requirements of the individual as even with similar disabilities, there are variations in need, for instance, the needs of a visually impaired student vary significantly from the needs of a student with dyslexia, but they will also differ considerably from

individual to individual even in the same impairment category, for instance, one visually impaired student from another. Educational technology can help build and improve key academic skills such as note-taking, production of written work, reading, planning, and organizing effectively, which can also help to address memory and concentration difficulties.

A comprehensive research regarding the use of different augmentative and alternative communication devices was undertaken at Durham in the UK. It validated 91 practices by the severely disabled, in general, and inclusive settings.

There also exist challenges linked with gaining reliable assessments of assistive technologies in an HE setting, as emphasized by Kelly and Smith. A study at Notre Dame University studied tablet computers and looked at behavioral and technical challenges that undergraduate students encountered as part of an institutional goal to build an "e-Publishing ecosystem".

The bulk of the 40 students partaking in the seven-week long study discovered that the I-Pad had many benefits. It made classes more interesting, encouraged additional reading, had features that were added to what a textbook can offer, assisted students to control their time more efficiently, increased knowledge and skills, helped student participation in academic debates, helped them to feel included and to achieve good grades.

In the case of visually-impaired students, Mokiwa and Phasha (2012) stated that the students were unable to read mathematical and graphic material with the Job access With Speech (JAWS) software. For this group of students Power Point presentations or other visual technology is unhelpful (Sukhraj-Ely 2008). As in Kajee's (2010) study a technology-based English online course was not useful for a visually-impaired student. These studies emphasize the need to

constantly question the systems designed to assist Students of Determination as they may also have built-in disadvantages.

In the study by Myers (1994), one of the findings was Students with Disabilities were lacking the training in AT. This obstacle existed in the case of students in the Hong Kong study as well (Kapperman, Sticken, & Heinze, 2002).

Due to advances in technologies, DSS (Decision Support Systems) provide a more excellent selection of tools**.** Present-day students are more tech-savvy than their predecessors and are usually familiar with multiple online devices. Instructors and students can use the tools for their specific needs. They can be used for resource allocation, admission, counseling, scheduling, curriculum development, improved parental involvement in student learning, developing online courses to meet the divergent needs of students, identification of learning styles, the prediction of student performance in exams, and provide appropriate feedback for improved performance.
The data collected could be used to analyze curricula and syllabi, diagnose standards, evaluate the quality of services offered and suggest alternatives. DSS reduces manual work, gives better data analysis, eases the decision-making processes, and leads to increased productivity and satisfaction. (Zain et.al, 2014)

The Academic Services- the Role of the Specialist Educator and Peer Mentoring:

Disability rights are often regarded as insignificant by westerners and Asians alike (Nielsen, 2004) (Gilson and Dymond, 2011). Often members of the general public and university officials are unaware of disability concerns, i.e., the legal and service provisions, and are hence unable to help those with disabilities. (Myers, 1994). The views on disability in particular contexts must be studied and accommodations made accordingly.

In some universities a personalized training project is prepared and monitored for SWD's to help them later to integrate into the world of work. SWD's are also granted a year or two more to complete their degrees. At the University of Essex in the UK each department has a Departmental Disability Liaison Officer (DDLO). His role is to liaise with the Student Services Hub to make sure reasonable adjustments are made for the student. The SWD is allocated a Personal Tutor who can be contacted for advice regarding academic concerns. Study support is available online via Moodle.

The Skills for Success Team can help identify the student's talents and strengthen the areas he needs to develop in. Support and resources are provided to improve writing, math, research, study skills, and English Language.

A student that has a diagnosis of Specific Learning Difficulties such as Dyslexia or an Autistic Spectrum Disorder is entitled to receive one-to-one mentoring. Assistance is provided for independent learning and development of study skills. Practical help is also provided in the form of organized study space and study materials in the library. The following are some of the auxiliary support services available: Services of a Practical Support Assistant, Library Support Assistant, a Reader, Scribe, Workshop/Laboratory Scribe, Sighted Guide, Proof Reader, Study Assistant (Examination Support Worker, Manual Note-taker, Communication Support Worker, Electronic Note-taker, Specialist Transcription Service, Mobility Trainer, Specialist Mentor, Wellbeing Specialist Mentor, Asperger's/ LD Specialist, One to One Study Skills Support, British Sign Language Interpreter, Language Support Tutor for Deaf students, and Assistive Technology Trainer. The preceding section gives us an insight into the elaborate network of Academic Support for those with disabilities- the need to cater for variant types, indicating the mammoth effort and organization needed to be put into the exercise, to make it successful.

There are no specific academic requirements for a Specialist Educator at present, as there is no specific course of study required for this position. The minimum requirement is a Bachelor's degree and "*the specific knowledge expected is either unspecified or only recommended to be education and psychology*." (Brown, 2014) Educators provide Learning Support and are inspired to sustain the maximum expectations for all students (Downing, 2005). They try to aim high rather than low (Donnellan, 1984; Sonnenmeier, McSheehan, and Jorgensen, 2005).

Calculator and Jorgensen (1994) discussed the need for meeting individualized suitable requirements in general education classrooms. This requires cooperation between general and special educators Dover, 2005; Hunt-Berg, 2005; Jorgensen, McSheehan, and Sonnenmeier, 2006 Wolfe and Hall, 2003) and requires time to incorporate classroom and curriculum changes that would help students to ensure full and active participation.(Armstrong, Armstrong, Lynch, and Severin, 2005; Calculator, 1999, 2000; Kent-Walsh and Light, 2003) while also fulfilling the needs of an Individualized Educational Program (Benkelman & Mirenda, 2005b; Calculator, 2009; Cushing et al., 2005; Downing, 2005; Sonnenmeier et al., 2005).

The Specialist Educator helps to simplify, structure, analyze, review content and integrate alternative methods of study. They benefit the students by working as a team with faculty members (Dizon, 2002).

Subject-specific support may be provided where a student has been absent for a period of time due to the impact of a disability (e.g., a short-term stay in hospital) or in very exceptional circumstances where a student cannot fully benefit from a lecture due to the impact of a disability (e.g., where a deaf student is missing out on parts of a lecture due to gaps in the translation from ISL). It is only provided after the student has first discussed their difficulties with the relevant lecturer.

For students who go through a short term or temporary disability, such as a broken leg, there are other student services available, for example, Student Health, Student Counseling, and temporary exam accommodations. Academic tutors or mentors may be provided for extra support.

Peer Assisted Learning & Support (PALS) has been developed in Ireland to bring together students from diverse year groups to form one to one mentoring relationships with new first-year students. PALS provides weekly study sessions facilitated by PALS Study Leaders. Department based PALS was developed to provide support and guidance both socially and academically to all first-year students to engage culturally and socially with their Irish class peers. First-year students meet once a week with senior experienced students to discuss and study course material covered in specific modules. The program helps in collaborative problem solving and the development of interpersonal skills. The PALS Study and PALS Support offers a five-credit module for all the Leaders. Proper coordination and collaboration between students, Faculty, and the Support staff are needed for efficient services.

The Role of Faculty:

Committed and well-trained Faculty plays a central role in making inclusive policies successful. Multiple means of presentation may ease access for those with varying, specific disabilities. Faculty needs professional training and support to teach in accessible formats. These services may be extended to faculty by learning and disability support services and by on-the-job professional training.

Course materials are to be provided online in accessible, alternative, creative, and innovative formats -visual, tactile, auditory etc. Preferably they must be provided before the lecture. Learning outcomes, assessment methods are to be clearly stated for all student programs.

Students and staff are to be encouraged to make use of timely, constructive, and relevant feedback for continuous improvement of services provided. Reading lists must be given well in advance to facilitate early reading and to allow sufficient time for conversion into alternative formats—lecture Capture or providing an overview and summary of lectures.

The Academic Department may liaise with the Accessibility Service Department on the appropriateness of an alternative to group work or presentations due to the impact of a student's disability.

Providing assignment topics early and clear instructions on what is expected will help students when prioritizing their workload and preparing for assignments. Lecturers should, where possible, consult with each other on deadlines to ensure an even and manageable workload for students.

In a few Chinese studies it was concluded that full time university faculty were not exposed to inclusion policies (Ma, 2014); are unaware of the specific needs of Students with Disabilities (Chu & and Xu, 2007) and do not have the specific knowledge and skills to cater to them (Zong, 2005). It is unrealistic to expect every Faculty member at present, to be a special knowledge educator, but existing faculty do need some in-house training from support staff. Disability awareness training might improve faculty, the attitude of peers and others (Support staff and auxiliary staff), and might raise the awareness and acceptance of students using AAC (Jackson et al., 2000; Kennedy and Itkonen, 1994; Kent-Walsh and Light, 2003; Soto et al., 2001).

Individualized Education Program (IEP) teams need to meet and collectively determine the special education and needed related services to fulfill the standards of an appropriate education for students with disability. Some recognize this methodology to be an effective and efficient one (Drasgow, Yell, and Robinson, 2001), whereas others regard it simply as "*a morass of paperwork*

that has little to do with student achievement" (Peterson, 2002). Problems that have been noted by several authors with the IEP process are related to teacher preparation not meeting the legal requirements (Huefner, 2000), barriers to effective communication between parents and educators (Pruit, Wandry, and Hollums, 1998), and insufficient time, lack of collaboration of team members and the belief by some that the IEP document is irrelevant (Menlove, Hudson, and Suter, 2001). The members of the Presidential Commission set up to recommend reforms for Individuals with Disabilities Education Act (IDEA) noted that "*the current regulatory burden that insists on complex procedures stifles the ability of parents, teachers, and others to improve results for children with disabilities*" (President's Commission on Excellence in Special Education, 2002) and hence recommended streamlining compliance.

For reinforcement of lectures, classroom teaching should be followed by substitute modules. There are plenty of studies on inclusive practices at HE institutions. Some of the selective ones are by Borland and James (1999); Holloway (2001); Moswela and Mukhopadhyay (2011); Nielsen (2001); Prowse (2009); Riddell, Wilson, and Tinklin (2002); Shevlin, Kenny and McNeela (2004); Tinklin, Riddell and Wilson (2004). They have all stressed the need for a complete overhaul of HE environments and, the cultivation of proactive inclusive policies.

The most common obstacles that students face from faculty are attitudinal barriers and these can be classified as reactive, not proactive responses (Riddell, Tinklin and Wilson, 2005) as inclusion is resisted by university staff and might be perceived as undermining their academic freedom. Higher education (HE) environments are especially disabling (Borland and James, 1999; Nunan, Rigmor, and McCausland, 2000). Gitlow (2001) identified the cyclic influence of attitudinal barriers on organizational and instructional ones which strongly impact learning and academic achievement.

The eradication of attitudinal barriers is the most difficult. This was followed by lack of appropriate education and training about disability issues and inexperience working with persons with disabilities.

Most frequently faculty are unwilling to make accommodations- like overlooking minor errors, refusing permission to substitute for required courses; not providing copies of lecture notes in time assignments (Leyser et al. 1998; Leyser, Y., (1998). The rationale seems to be that concessions would lower standards or be seen as partiality towards certain students. The barriers could have been tackled by changing the methodology in which content was presented, by removal of attitudinal barriers and by educating students and faculty about disability.

Easier accommodations are more readily implemented (Burgsthaler 2003) like physical disabilities, whereas the needs of students with invisible or "hidden" disabilities are ignored and frowned upon like psychiatric illnesses-due to limited knowledge about the rights and needs of these categories. The National Science Foundation Task Force (2004) and Leyser (1990) stated that negative attitudes were still the single most important obstacle in universities for SWD's. Some other studies about the attitudes and viewpoints of Faculty teaching SWD's in American colleges and universities (Burgstahler, Ducolos, and Torcette, 2000; Scott, Weishaar (2004), Park, and Jewell, 2004; Vogel, Leyser, Wyland, and Brülle, 1999) reported more positive attitudes than in the 1970s and 1980s, but faculty still report tension concerning the justice of offering accommodations to students with disabilities (Burgstahler et, al, 2000).

Student participation cannot be expected if staff members lack the awareness of the needs of students with Disabilities. Some students might require their notes in advance of their class, but a lack of awareness may lead to a member of staff not appreciating this. Also, faculty are not informed about the existence of Students with Disabilities in their courses and are not conversant

with or are even not versed in the use of tools like PowerPoint and new technologies. This can negatively affect students with certain types of disabilities – like Visual and Auditory Impairments. Some students when they inform faculty about their disabilities and their learning needs are told no exception can be made for any student. There is largely an absence of positive attitudes and interactions from faculty with Students with Disabilities. (Hall and Tinklin,1998)

Three supportive ways for Students with Disability have been suggested by Farmer, Riddick, and Sterling (2002). The first of these is the modification of teaching materials to suit personal or individual needs of SWD's (for example, Braille services or modifying other teaching materials). The second approach is organizational reform: providing appropriate professional development programs for faculty. The third approach is being committed to uphold in policy and practice the need for an equitable education for Students with Disabilities. There have been several handbooks written to assist lecturing staff in fulfilling the needs of Students with Disabilities.

The gist of the studies referred to above is that lecturers are not trained in inclusion and are unwilling to bring about changes in their teaching style and to accommodate the curricula to the needs of the particular needs of students (Holloway, 2001; Moswela and Mukhopadhyay, 2011). The one-size-fits-all, traditional model of lecture-style teaching and teacher-driven education continues to dominate at the university level. (Dosch and Zidon, 2014)

In the South African context, students testified the lack of disability awareness amongst lecturers, which led to the absence of essential provisions (Matshedisho 2010; Haywood 2014). Swart and Greyling (2011) observed that the positive attitudes of the students in the Humanities and Social Sciences was due to better assistance granted to them in comparison with those in the Natural, Economic, and Business Sciences. Another problem that was noticed by Ohajunwa et al. (2014) and Swart and Greyling (2011) and Greyling (2008) was that low levels of disability were

ignored as they were not seen as a problem of social justice. The authors suggested an institutional reform through a system that would increase the awareness and improve the ability of lecturers to attend to disability in teaching and research. Lecturers need to be informed about legal obligations, and appropriate accommodations. This can be achieved through the guides that have been published. This recommendation was reinforced by Crous (2004) and by Mayat and Amosun (2011). The recommendation were in reference to the South African context.

One lecturer even questioned whether Students with disabilities would be an *'embarrassment'* to their non-disabled peers. These views would automatically prevent Students with Disabilities from participation in academic programs.

Another study on the role of lecturers at a South African university done by Van Jaarsveldt and Ndeya-Ndereya's (2015) was in reference to the e-learning requirements of Students with Disabilities. Some lecturers distanced themselves from offering support to Students with Disabilities and referred them to the Disability Unit. An inclusive learning can hardly exist in an environment similar to the above. The authors argue that though disability policies are obligatory for higher education institutions; it is only the personal responsibility of lecturers that can truly establish inclusion in university campuses.

Inclusion at the university level would have greater success if the Faculty, Specialist Educator and Learning Support have training in inclusive education to develop their competencies. As identified by the E41 project, suggested by the European Agency for Development in Special Needs Education for all teachers, they need to value learner's diversity, support all learners, have the theoretical knowledge on the way learners learn and models of teaching that support the learning process, be able to identify and address different barriers to learning–have high expectations for all learners' achievements, learn to work with others as a team and continue

personal, professional development, evaluating their own performance and developing personal strategies for problem-solving. Assessment for learning methods must focus upon identifying the strengths of a learner.

High quality professional development has to be sustainable over time and requires the active involvement of faculty in planning and setting goals for their own learning of how to best present content for divergent needs and to provide opportunities for ongoing support, feedback, and assistance for implementation of change.

Curriculum:

In the majority of cases no curriculum modifications (Fuller, 2004), and no change in the prerequisites for degree requirements are made for Students with Disabilities and this is a common norm. The rationale presented is that college academic programs are assessed and certified by the Ministry of Education and Culture, and hence, the curriculum remains uniform for all.

Some concessions in terms of learning, exams, and assignments are permitted by the Special Education Law, the provision for extra time, regular breaks, using clear and slow speech to make it possible to be understood, oral rather than written exams, and exclusion from shorthand for those with hearing impairment. Only about half of the teachers and Heads mentioned that they frequently used visual materials/projector, permit oral examinations for dyslexic students and provide notes on the internet. This declaration is actually about insufficient accommodations being made for those with disabilities, which is to be regarded as an injustice.

Teaching modifications in terms of the curriculum and adapting the learning goals to the needs of disabled students was not done in any of the colleges interviewed (Fuller et al. 2004; Shevlin et al. 2004). This is a need that has to be acknowledged and catered for, for some disability

types i.e. those that have severe symptoms and those that have learning and mental disabilities. For them the language needs to be simplified and the presentation of the material has to be made in alternative formats and a reduction of the course content would help. Alternatives make learning accessible to students with different backgrounds, learning styles, abilities and disabilities. Universal design is the ideal to be followed (Rose and Mayer, 2000).

Clearly structured programs have been developed as alternatives, like in Arkansas a program called *Strong Start to Finish* for math and English. As of December 19, 2019 some states will use high school grades, standardized tests, college entrance exam scores, work experience and alternative assessment methods (Paterson, 2019).

The significance of the curriculum to the success of Persons of Determination cannot be understated. It is the most important factor related to achievement and success but is the one most ignored.

There are examples of good practice regarding the building up of accessible curriculum content that should be utilized as well as initiatives taken to build resource banks for curricula through collaborative research studies by experienced researchers. Curricula should be diligently planned through a process of identification of needs relevant to the target audience, the realization of objectives to be achieved, and the choice of relevant content. Courses need to be evaluated for their effectiveness in helping students meet learning objectives, achieve expected levels of knowledge and skills proficiencies in preparation for future courses. Also, areas of the curriculum need to be identified where remediation is needed to improve teaching and course design."

The emphasis in programs needs to be not just on memorization but on cognitive skills. (Kincheloe & Steinberg, 1993),which is more in keeping with the cognitive ideals of higher

education. The three principles of universal design for learning (UDL, 2016) should be followed: They are:

• Principle I: Provide means the "what" of learning, the "how" of learning, the "why" of learning.

There are examples of good practice regarding the building up of accessible curriculum content that should be utilized as well as initiatives taken to build resource banks for curricula through collaborative research studies by experienced researchers. The curricula should be redesigned on a general education basis and be of sufficient length to provide adequate depth of knowledge in the general and special education areas offered. It should be subject to ongoing evaluation. There needs to be a clear connection established between content and performance standards by mapping out the expected progression of learning. UNESCO-IBE (2016) suggests that there are indicators that can help teachers review their classrooms. Of these, the most relevant ones at the HE level are:

- Active involvement of students in their own learning
- Encouragement to support each other's learning
- Support provided by faculty when students experience difficulties
- Fostering mutual respect between peers and faculty.

Billingsley, and Zeigler, (2018) propose the application of high-leverage practices (HLPs) for preparing teachers more effectively for diverse classrooms. These focus on four areas of collaboration, assessment, social/emotional/behavioural, and instruction approaches rather than traditional curriculum areas. The approach is two-fold: 1. Identify a set of high-leverage practices as the core curriculum for teacher education 2. Employ a practice-based approach to systematically prepare teachers to use these practices. Teachers need to be trained to be critical thinkers, problem-

solvers and reflective practitioners in addition to learning the basic skills and acquiring relevant knowledge required for teaching.

Remedial Classes:

There is a call to move away from deficit models that refer to special arrangements or remediation. The usefulness of remedial classes in the context of American colleges is being questioned. Classes were offered in Math and English to those who failed Placement Tests. It cost to provide and to take these classes, and those who enrolled for them were stigmatized as being deficient in some way. It is increasingly well-known that access issues cannot be centered on the *'individual deficit'* model, which usually is used to describe the under-represented marginalized communities within higher education (Skilbeck and Connell, 2000).

Most students who were enrolled in these classes tended to drop out and not continue with a college education. The vice-Chancellor for academic affairs of California Community Colleges, Alice Perez, said that "*Most students who enter a community college never complete a degree or certificate or transfer to a four-year university. Changes are imperative to increase degree and certificate attainment, workforce outcomes, and transfers*." Support courses were offered relevant to the subjects chosen to graduate in; for instance, for a social sciences course, statistics is more relevant than calculus. Hence this involved curricular reforms and introducing elements of content that are culturally relevant. These are now being nationally offered. In this type of arrangement, students in a college-level class are placed with a tutor or with another class for revision of core concepts. (Paterson, 2019)

Access to Library:

Under the DDA (1995), it is illegal to fail to make a "*reasonable adjustment*" and to treat a user less positively than another "*for a reason connected to his or her disability without justification*" (Jones 2002). In the case of library services, the majority of library activities must be available: *"access to bookshelves, seating, counter facilities, user education, using electronic materials, photocopying*." (Robertson 2007).

Pinder (2005) stated "*Under SENDA, universities have to take reasonable steps to find out if a student is disabled*." Communication and coordination between different organizational units of the university must be established and maintained. The library could be informed about the disabilities of a student from the admissions department (Pinder 2005).

For visually impaired persons according to the Copyright Act 2002 (Visually Impaired Persons) "*gave the right to make a copy for visually-impaired person in an alternative format of a literary, artistic, dramatic or musical work, or published edition under certain conditions*" (Robertson 2007) As a result of this, a library could offer a book in an alternative format, for instance creating an audio file or a file readable with screen reading software. It must be assured that the particular format (e.g., audio recording) may not be obtainable commercially (Robertson 2007). Heaven's (2004) study was also regarding physical accessibility, assistive technology and staff training. A method that the study participants used for physical access was to paint obstacles in different colors that were evident to the visually impaired (as suggested by Heaven 2004). Libraries had good lighting and had easy and safe wheelchair access (Irvall and Nielsen 2005).

Assessments:

Assessments are a most significant factor on which the success and achievements of students in their educational career, subsequent status in life, employment and the quality of their life is dependent upon.

It was expressed that "*traditional assessment procedures might not be efficient in evaluating the knowledge of students with disabilities."* (Department of Education and Science, 2001). According to Waterfield, J. and West, B. (2016) in more recent times with further research it has been realized that actually multiple means of assessments better serve the needs of all students but practice in this area lags far behind.

For most Students with Disabilities examinations lead to undue stress, fatigue, high blood pressure, and an inability to cope. Among other factors, part of the cause for this stress is inadequate support for specific subjects and academic writing skills. (Jason M. Nelson, Will Lindstrom, Patricia A. Foels, 2013). Fuller and others (2004) reported that over 34% of students in their study face problems with course work and approximately 30% regarded examination as a barrier.

Inclusive assessment practices are not employed because of lack of training and hence unfamiliarity and resistance to change by staff, as more planning and additional time is required for multiple assessments. Other disabling factors are the refusal by faculty to extend deadlines and adapt assignments to learning strategies and to the needs of all students and 'teaching to the test'.

Standardized testing is still the norm at the HE level in most countries. This negatively affects SWD's. Standardized is not truly *objective* measures of the academic achievements of individual students. There may be intrinsic biases—in the design or content of the test—that favor some students over others. Some students may be better test-takers than others. However, if standardized tests are administered, a blanket exclusion of students based on categories of

disability for these assessments should not be made. The decision to exclude a student from participation should be on a case-by-case basis by comparing the student's curriculum and educational goals with the assessment program. Waterfield, J. and West, B. (2006)

"*It is clear that some methods of assessment are far more time consuming for hard-pressed academics to prepare and administer than are others."* (Talbot, 2004.) This situation could be mitigated by the creation of tools to simplify the creation and marking of a range of assessment types. It is hence preferable to seek alternative means to make modes of assessment less burdensome for both faculty and students. **(**Mutch and Brown, 2001). The end goal of education is to impart beneficial knowledge and skills to contribute to the development of well- rounded persons able to cater to the challenges of life and work and hence the emphasis should not be on cramming to pass through exams but as one student put it during the SPACE Project: "*It would be more useful for students to be able to use the information in coursework, presentations and group work rather than simply remember it for examinations*." (Student with dyslexia, studying Business)

Inclusive assessments are based on student choice and are backed by clear briefings and feedback to help improve the learning experience for all students. There is an increasing reliance upon electronic means of assessment. E-assessments can be undertaken in the student's own time via the university intranet. It is beneficial to have frequent smaller tests to encourage continuous effort and can also help to reduce test anxiety. Assessments could be curriculum-based measurement data to provide information about student progress in different curricular areas.

Lancaster et al. (2001) studied provisions for Students with Disabilities in higher education institutions in the USA. The main focus of their research was "*providing course accommodations for Students with disabilities to enhance testing procedures in order to aid students to become as*

successful as they can be. This should be done in such a way that the structure of the academic program is not conceded or without giving the students an unfair advantage." They discovered that Students with Disabilities and their tutors usually negotiated teaching modifications and concessions with assignments and exams, including extra time for tests/assignments, extended due dates, scribes, and readers for tests, oral tests/reports instead of written, and separate testing rooms.

Teachability, 2002 offers resources to enable an assessment of teaching and learning by academics, with a perspective on enhancing accessibility for People with Disabilities. Significantly, the first step in the procedure is the formation of the core needs of a subject or discipline. Once these have been recognized, alternate methods of evaluation can be formulated which do not negotiate standards. For instance, language specialists require to choose, whether an essential component of their discipline is that students be able to speak the language, which may not be possible for students with a speech impediment or if the core need is the ability to communicate in the language. Disciplines that depend on essay-writing as a way of evaluation require to establish whether essay-writing in itself is a core need, or whether the ability to arrange information, to discuss ideas and to exhibit a coherent argument are the core needs, in which case this could equally well be executed verbally.

The methods via which assessment data are collected could be chosen from a wide variety of possibilities- essay, multiple-choice, dissertation, oral, aural, practical, fieldwork, laboratory report, individual project, group project, profile, portfolio, diary, log, work placement assessment, report, skills record, summary, research project, review, poster, and exhibition etc. Choices regarding referencing systems may vary and feedback would help in improving the quality of work produced.

Research involving learners with disabilities needs further analysis of methods of assessment and understanding of intelligence and ability. (Gardner, 1983, 1991). Learners learn in different ways, people voice their understanding differently (Perkins & Blythe, 1994), but assessment practices do not always note this. Fair evaluations may eliminate obstacles (Kowalsky and Fresco, 2002; Matshedisho, 2007) For instance, the excessive reliance on written methods of evaluation can result in the elimination of many learners from successful evaluation experiences, as can the practice of needing learners to convey all they know regarding a topic within a limited and strictly obligatory time frame. These limitations can impact People with Disabilities even more severely, mainly those students who require to use assistive technology, a scribe, or need extra time and a quiet location.

Lazarus and colleagues (2006) suggested that federal states should pay attention to generating high-quality, universally designed assessment standards that reduce the requirement for personal accommodations or tests.

The use of DSS (Decision Support Systems) in Education in institutions in the USA is helping to identify variant learning styles, customize instructional materials to suit particular needs and to predict student performance in examinations. The tools can be used in multiple ways to enhance learning and student achievements. DSS reduces manual work, gives better data analysis, eases the decision-making process and leads to increased productivity and satisfaction. (Rasha Shalabi, 2020)

Language Barrier:

When instructions in universities are in a language other than the mother tongue and students have been taught in their native language, this poses a challenge in understanding lectures and capturing notes. In many international universities where the medium of instruction is English,

it is usual for students to be taught English in the foundation year of college. In these situations, the program needs to be intensive.

A study published in 2016 in the South African Journal of Science examined the note-taking of students enrolled in a biology course from 2009 to 2011, at the University of the Witwatersrand. In every year of the research, between 43% and 60% of the applicants were second-language students and were finding it hard to cope. Though English is the official medium of instruction in South Africa schools- the country has 11 official languages. The schools frequently used code-switching, which alludes to the practice of swapping between learners' native language and English - to make complex concepts more easily accessible to learners.

The students participated in a research workshop in writing, and this was recommended as an early intervention technique to promote critical thinking. Khumalo, the linguistics director in the Language Planning and Development Office at the University of KwaZulu-Natal, recommended the introduction of African languages at universities to improve academic engagement.

Collaboration:

For successful inclusive education the dynamic leadership role of the head administrator has a crucial bearing on the initiation and direction of the exercise. The vision must be publicly expressed, consensus built, and the active involvement of all stakeholders procured.

Sincere and enthusiastic collaboration is needed between all the stakeholders-the administration, general and specialist educators, the support staff, parents and students, and between different universities as well as the larger community and on an international level. Open channels of communication foster greater empathy, discussion, understanding, resolution of problems, emulation of best practices, and finally, better outcomes. It is imperative for this to

continually and stringently maintain statistical data on country and international level and to earnestly share expertise and good practices.

Calculator and Jorgensen (1994) discussed the importance of allocating time for frequent meetings between general and specialist educators, to be able to cater for the individualized needs of Persons with Disabilities and for greater cooperation between them. (Dover, 2005; Hunt-Berg, 2005; Jorgensen, McSheehan, and Sonnenmeier, 2006; Wolfe and Hall, 2003). Time is required for adaptations in the curriculum that will help in full and active participation of students with disabilities in the general education curriculum, whilst also addressing individualized education program (IEP) goals (Beukelman and Mirenda, 2005b; Calculator, 2009; Cushing et al., 2005; Downing, 2005; Sonnenmeier et al., 2005).

2.19.4 Miscellaneous Barriers

Other barriers might impede success. These may be related to financial provisions- being unable to pay for services that People with Disability need, for their wellbeing or other supports.

2.19.5 Funding:

The worldwide monetary crisis at present has resulted in the delay of attempts by educational institutions to fulfill legislative obligations (Christ and Stodden, 2005).

This would be most applicable in the case of developing countries. Consequently, post-secondary institutions call for the innovative and economical provision of accommodations that have empirical, evidence-based support. However, such evidence is sparse (Christ and Stodden, 2005). This must also depend on the emphasis we place on our priorities.

The commercialization of the education industry influences the priorities for funding (Kenway et al. 1993) and has led to "*an ideological shift towards higher education as a private rather than a public good*" (Meek 2000). According to De Jager and Gbadamosi (2010), this resulted in '*a more competitive educational environment'* in which universities race with one another '*for students, resources and prestige'* (Meek 2000). Government subsidy cuts lead to increasing costs, recruitment freezes and large classes (Shrivastava & Shrivastava 2014) and these negatively influence inclusion of Students with Disabilities.

Private funding sources, due to their donations may place restrictions on institution's making personal costs as the responsibility of the institution and the preference to pay only for equipment rather than sign language interpreters (Howell 2005). With this type of funding according to Eleweke and Rodda (2002), students are "*left on their own to receive no special support to help them on their courses".* (Singal 2005).Selective inclusion leads to students who are deaf being poorly served, especially in countries like South Africa. The same holds true for some Indian HEIs such as at Adarsh College in Chamarajpet, Bengaluru University where the absence of sign language interpreters puts added burden on students to pay for these services on their own (Krishnan 2012). On the contrary, countries like Australia have been able to maintain good practices by employing large number of interpreters to meet the needs of deaf and hard of hearing. (Knuckey et al. 2001; OECD higher education Programme IMHE 2014)

In some HEIs through the *'impairment-based approach,*' only certain categories of disability are accommodated for. And hence in these institutions different categories of disabilities receive differential treatment. In times of budget constraints, HEIs revert to minimal accommodation and legal compliance

2.19.6 Counseling Services:

Students need a resolution to their emotional, psychological, and personal, social problems. These concerns are dealt with by the counselor. According to Ipaye (1981), the SWD's through this service may learn to obtain information, make decisions, and interact in novel and alternative ways. (Denga, 2009; Mallun, 1983; Okon, 1983). Problems arise when a student who is in need of counseling shies away from it, might feel it an intrusion or simply not feel the need for it.

Accommodation of students with psychiatric problems is regarded as more problematic and hence their needs may be ignored (Barry and Mellard, 2002; Mc Eldowney Jensen et al., 2004; Shevlin et al., 2004).

2.19.7 Career Services:

Career Services centers are a regular part of many Universities in the developed world. Schools are required to have an Individual Learning Plan prepared for students in consultation with the students, parents, and teachers. Their Employment Plans are follow-ups from their Education Plans. It is at school that they are usually to be prepared for the world of work - based on their interests, personality traits, and their abilities. A part of preparing students with life skills is to train them in self-advocacy in building their communication skills, self-determination, confidence and perseverance, and the enthusiasm to achieve and do well. If the school is unable to deliver on these essentials or the transition from the higher secondary to the university has not been smooth, then the student may, on the basis of his school grade report and the Placement test results, be selected for his chosen courses. Then it is the Accessibility Unit and the Career Center that will need to coordinate to provide the student information and skills for the world of work.

Career centers have information about courses and the jobs that are aligned with those options. They may offer a host of services for persons of determination on their websites in the form of brochures - information about career sites, career descriptions, and job guidance. Lectures and workshops may be arranged with employers to give students an insight into the job requirements for different categories of work, information about accommodations that employers are willing to provide, and a feel of the work environment.

The data indicates that compared to their non-disabled peers, persons with disability experience far lower rates of high school graduation and post-secondary graduation (NCSPES, 2000; NSF, 2004). The latter two statistics reflect the failure of the educational system to efficiently cater to people of determination in post-secondary education programs (Stodden and Dowrick), which then leads to low paid employment.

Some of the common barriers persons of determination face in their careers are lack of physical access, negative attitudes, social and communication barriers, financial expenses and health problems.

Careers in STEM education are challenging. There is lower engagement of individuals of determination in STEM fields. Burgstahler (2012) refers to three factors for this:

(a) Lower level of achievement

(b) Non accessibility to amenities, and equipment

(c) The above two factors lead to non-acceptance by educators, employers, and co-workers.

The reason for inadequate preparation of students with disabilities is the absence of comprehensive instructional programs to meet the needs of the disabled (Cawley, Hayden, Cade, and Baker-Kroczynski, 2002). At the university level, Weisgerber, R. A. (1994) remarked that

"*doing science*" was not as difficult as it was to deal with the inflexible attitudes of faculty. Even in the primary grades students with disabilities are discouraged joining and competing in STEM classes (Milsom, 2006)

The National Science Foundation (2004) stated that fewer students with disabilities are enrolled in "hard science" majors such as engineering, mathematics, computer science, and physical sciences.

In the US and in other countries around the world, alternatives to university education exist in the form of 2 year Technical or Further Education Colleges, which are specifically linked with different trades. Various governmental and private organizations have been formed to help cultivate work skills, familiarity with the work environment, and to provide guidance and information about employment. Some of these are JAN (Job Accommodation Network) and WPR (Workforce Recruitment Program).

Disability-support services in the United States and in many other countries suffer from lack of reliable data-driven, evidence-based services focusing on student perceptions of barriers (Bolt, 2004).

It has been emphasized by Parker, Shaw, and McGuire (2003) that less than one-third of post-secondary disability service providers collect and use program assessment data for further improvement. Stodden, and Conway, (2003) note that post-secondary services for Students with Disabilities are:

(a) Fragmented and inefficient.

(b) Varied across States and campuses

(c) Ill-developed or connected programmatically to instruction.

(d) Are lagging in providing information and remediation content and do not assist in independent learning

Support services need to have a comprehensive and empathetic approach towards ensuring continued development of programs by working in collaboration with the education providers, attending to loopholes, in readiness for professions through a linked-in approach, through career counseling services, enhanced provisions for a variety of skill-based employment opportunities and apprenticeships and by the provision of ample information on available contacts and resources.

2.19.8 Family Support

Recent studies confirm the importance of the family in the lives of their offspring and their inclusion in decision processes as well as the influence of such factors as the composition of the family, their socio-economic status, the education of parents, their expectations and discussions to help the students persist and complete post-secondary and be able to secure favorable employment (Rojewski, Lee, Gregg, and Gemici, 2012). Inclusive policies need to be sensitive to the culture and ideology of different families. (ASHA, 2002, 2005b, 2005c; Cress, 2004; Downing, 2005; Giangreco, Cloninger, and Iverson, 1998).

To be able to successfully complete higher education, Students with Disabilities need advice and support the absence of which is a formidable barrier (Thomas et al. 2002). It is usual for family support to be less during university years as this period ushers in adulthood, wherein particularly in the Western context, the emphasis on independence in most cases, leads to isolation. Also, youth might themselves reject the advice and support of the family because of the influence of peer groups.

There is proof for the positive effects of family involvement in AAC (Augmentative or Alternative Communication) programs (Jackson et al., 2000; Robinson and Sadao, 2005) and the

need for institutions to be sensitive to family values and beliefs in the selection of AAC methods and goals (ASHA; 2002, 2005b, 2005c). The Family's input regarding their wards needs and their own individual priorities should be welcomed.

Advocacy could be made regarding how AAC skills provided at the institution may be duplicated in daily activities at home, by parents and siblings (ASHA, 2004; Calculator, 1988; Cress, 2004).

2.19.9 Physical Access:

The physical environment should be adapted in such a way as to make possible participation of all students (Avramdis, Bayliss, and Burden, 2002; Kent-Walsh and Light, 2003). Researchers have emphasized that the built environment is fundamental in increasing access and choice (Thorpe, 1995) to a particular institution. Physical barriers are amongst the most crucial problems mentioned in the literature by those with mobility impairments. These problems should be the most easily possible to resolve. Chard and Couch (1998) stressed that adapting the environment to the requirements of Students with Disability should be a procedure possible through legislation, insistence, and good practice. Access audits should be carried out to eliminate physical obstacles and to plan future improvements. Physical access comprises a serious major problem as many universities were built long ago, are inaccessible, and are hard to adapt (Kowalsky and Fresco, 2002; SKILL, 1994; Riddell, Tinklin, and Wilson, 2005; Hurst, 1999)- may not have ramps and elevators, have heavy doors, inaccessible washrooms and unsuitable means of transportation also poses problems.

Half of the institutions surveyed in the study provided limited library access. According to Borland, James and Holloway (2001), planned compromises do not resolve this issue. Chard and

Couch (1998) referred to this as *"the built environment does handicap people since it refuses them independent access to a variety of services and facilities*". Accessible routes, entrances, parking, toilets, and ramps, and appropriate signage in braille, lighting and coloring; acoustics and the proximity of classes- all these must be planned. Safety signs should be fitted to a building and building staff should receive training about the location and proper use of emergency features and equipment as well as training on how to help disabled people in an emergency.

Mobility training involves orientation around the campus and focuses on locating administrative, teaching, and social venues, and practicing routes to and from buildings.

Holloway (2001) referred to frequent marginalizing of students with mobility disabilities for e.g. to wait outside in order to be permitted entry through emergency exits, because the person uses a wheelchair and the inability of the student to sit with others because this is where wheelchairs fit is a degrading experience. This can create practical problems and negatively affect the ability to study (Holloway, 2001) (Reindal (1995)).

The Report of the Action Group on Access to Third-Level Education recognized under-representation of Students with Disabilities in higher education, as a result of attitudinal and environmental obstacles which lead to decreased participation (Department of Education and Science 2001).

2.20 Summary of Literature Review

The chapter traversed through a vast expanse of research on Inclusive Education to uphold the humane, all-round positive and beneficial nature of the reform movement which aims at improving the lot of Students of Determination, in academics and in the economic and social

spheres, with the ultimate goals of improving the quality of life of all and building inclusive societies, where love, care, and compassion reins in place of disunity, hatred, and discrimination.

A global historical context of disability is presented to view the damaging effects it had. Then the chapter traces the realization of the emphasis on inclusion in education through the evolution of legislation regarding it.

A brief introduction on the UAE is followed by the legal framework of the country for the promotion of Inclusive Education from kindergarten to university level- covering all the variable options in the system- Public and Private Schools, higher colleges of technology, Special Education and International Universities. After a brief account of provisions for Students with Disabilities in higher education a comprehensive coverage of inclusion of Universities in the UK is dealt with.

Two other universities are selected from Literature for a study of barriers to inclusion in the West, the University of Hong Kong, and the University of Ulster in Northern Ireland, and an unusual case of inclusion is presented from a developed country –South Africa. Strategies for Best Practices are outlined from a UK university, the University of Wolverhampton.

The general topic of facilitators and barriers to inclusion categorizes all obstacles and provisions under the general headings of Personal and Environmental Barriers. This is ensured by a detailed rendering of each barrier separately. The specifics are dealt with in six different sections: Administrative Support, Transition, and the Application, Admission, and Interview Stage, the role of the Accessibility Department, Academic services and Miscellaneous Barriers.

Five main components of successful inclusive education implementation are mentioned:

1. Inclusive polices that promote high outcomes for all students.
2. Flexible and accommodative curriculum.

3. Strong and supportive school leadership.

4. Equitable distribution of resources.

5. Teachers who are trained in inclusive pedagogy and view it as their role to teach all learners in diverse classrooms.

CHAPTER 3: THEORITICAL FRAMEWORK

3.1 Introduction to disability theories:

This chapter elaborates a spectrum of disability theories in order to compare and contrast between them, and arrive at a comprehensive model with the widest scope, which would suitably expose barriers and facilitators in detail, for any particular context. This would aid in the selection of a theoretical framework for the analysis of the context of the research undertaken.

3.2 Theories in context of research work:

Theories or models are based on paradigms or assumptions and help in formulating a Research Design, which is useful in qualitative and quantitative assessments and acts as a springboard for analytical conclusions for research. The theories are either functionalist or structuralist, and subjective or objective, or may have elements of dual types. Most of the models have overlaps. The following are accounts of the major theories relevant to Disability Studies.

3.2.1 Functionalist Theory and Disability:

Functionalist or consensus theory has been criticized as it maintains the status quo in society, preserving its structures for the sake of stability, not allowing for social change, nor recognizing individual differences, and marked by an absence of resistance. It has been applied in the Medical model of disability. The traditional model is rooted in behaviorist psychology. (Pfeiffer, 2001, Amundson, 2000). It conceptualizes the human body to be similar to a machine that emphasizes the role of medicine to 'fix' and 'cure' and to preserve the 'normal' functioning of

individuals. Medication and technologies are helpful, but the danger is in their misapplication to social contexts. (Gabel & Peters, *2004*)

The model also gave rise to myths like deficient IQ, resulting in the stigmatization of individuals and groups through labeling. Another criticism of this theory is that it fails to distinguish between impairment and disability, as the latter is actually just a social construct. In 1986 Disabled Peoples International stated impairment as *"a functional limitation caused by physical, mental or sensory impairment because of physical and social barriers"*. Another pertinent criticism of this theory is that it can easily lead to institutionalization and the oppression of People of Determination. (Gabel & Peters, *2004*)

A variant of the functionalist theory is the *'normalization theory*.' In it, disability is viewed negatively as 'social deviance'. Consequently, this affects the healthcare afforded and the nature of research based on this faulty outlook.

A gruesome example of the normalization theory is, for instance, to do cosmetic surgery for people with Down's syndrome (Chappel 1992). Medication and technologies are helpful but the danger is in their misapplication to social contexts. The medical model aids the continual monopoly and authority of professionally controlled health and welfare facilities. An unusually large portion of expenditure went towards the salaries of professionals working with disabled people, under welfare arrangements. Only lately has this been decreased via the financing of independent living programs operated by disabled people. QOL (Quality of life) measures were criticized for regarding disability as a physiological problem and a 'burden'- which are negative connotations, leading to stigma and which ignore actual barriers.

The Medical Model has also been criticized in its resemblance to the Charity Model. People are patronizing, they show pity for people with disabilities and regard them as

victimized. However, with the proliferation of the inclusion ideology there have been critical, innovative developments in the traditional Medical Model to make health care more inclusive. The Medical Model has benefitted from concepts in SEN's Capability Model and the ICF (Internal Classification of Functioning) which the WHO uses to measure disability on an assessment scale of five levels of difficulty.

The public health ecological model that resembles Bronfenbrenner's Bio-ecological model was proposed by Dahlgren and Whitehead (1991). "*Policies and strategies to promote social equity in health"*, Institute for Future Studies, Stockholm (Mimeo). In it, the meso and macro environments, ranging from the immediate, are linked through community relationships, living and working conditions, and broader economic and political processes. Graham and Kelly (2004) further refined the model by the following kinds of interventions:

1. Improving the health of the most disadvantaged
2. Reducing the gap between the affluent and disadvantage groups
3. Reducing social gradient.

3.2.2 Social Constructionism:

Until the late 1960s, "*severely disabled people"* were institutionalized and stigmatized, and they mostly lived in poverty. Welfare rights were granted only if a person had acquired injuries at the job. Hence, in the UK, early activism was connected to economic welfare and drew prominent disability activists, including Paul Hunt, Vic Finkelstein, Ken Davis, Maggie Hines and Mike Oliver. The **social model** rejects deficit models of disability. It focuses on political, social, cultural, historical, and individual understandings of disability whereby the 'others' have been stereotyped and marginalized. This theory leads to broad, collective, and determinist

interpretations of disability, according to the varying views of proponents. Several versions of the method are based on a corpus of paradigms, selecting ideas from various sources, drawing on diverse disciplines like sociology, literature, critical theory, economics, law, history, art, philosophy, and others. The common denominator in all these viewpoints is that disability is a social construct that results from barriers in the environment, be they physical, societal attitudes, or policy structures. This theory and those that followed it are a call to those with disabilities to be involved in the dialogue and to seek interventions to improve the quality of their lives.

Mike Oliver, a British sociologist and a pioneer of the social model in the 1980's believed that it is not individual limitations that cause disability but the oppression of society, its failure to provide appropriate services and representation of disabled people in societal organization. (Oliver, Mike. 1990, Masala, Petretto 2010.)

Vygotsky (1993), a Soviet psychologist expressed in the Social Constructionist theory that children grow and develop through interaction with peers, and by internalizing external cultural activities (Vygotsky 1993, Bein, Vlasova, and Levina, 1993).

Vic Finkelstein (2001) stated that within the social interpretation of disability, "*disabled people are not the subject matter but disablement i.e., social oppression of people with impairments is the subject.*" In addition to upholding the elements of UNCRPD Article 3(2001): Inclusion, Dignity, Equality, and Accessibility, post-modernist theorists stress the importance of realizing the intersectionality of interests of various groups, for purposes of social change. However, this model also has some limitations, as pointed out by Gabel & Peters (2004), that the social model is explanatory, yet insufficient for creating change. Peter Monaghan (1998) noted the eclecticism of disability studies selecting ideas from different sources with a humanities-oriented

approach and informed by literary and cultural criticism, based on the experiences of disabled peoples in this particular model.

Gabel and Peters (2004) both scholars with disability, argue that we need to find '*ways of theorizing disability suited to current contexts and more responsive to emerging world trends*.' They also mention that the use of resistance theory lies in attempting 'to understand complex relationships and negotiations between different ideas while uniting the global disability community towards practice (not just theory).' In the historical materialist interpretation of this model, Nirmila Erevelles argues against the 'commodification of disabilities as a classification category in education' and states that at the bottom of the hierarchy, are the students with cognitive impairments, those that need the most support to benefit from their education.

The growth of the human service sector and the politicization of '*disability rights*' by the American disabled people's movement, '*disability' and 'rehabilitation'* got altered into a multimillion-dollar business in modern America. Disability has become a product and a supplier of income for doctors, lawyers, rehabilitation professionals, and disability activists. In his article in *Disability Tribune*, Richard Light (2000) aptly identified the tensions in the model by referring to it in his title *'Social Model' or 'Unsociable Muddle.'* Shakespeare and Nicholas Watson argue that the social model has become problematic in that it is impossible through it to seek an over-arching meta-analysis.

3.2.3 Post-Modernist Theories:

A feature of post-modernist theories is the negation of objective reality. The methods reveal conflicting positions, and concentrate on subjective meanings created by individuals or groups,

and the material phenomena around them. The focus on social class shifted to other sources of differences in society.

Shakespeare and Watson (2001) state: Disability *'sits at the intersection of biology and society and of agency and structure' and 'cannot be reduced to a singular identity: a multiplicity, a plurality*.' Some post-modernist theories have been regarded as dangerous (Oliver, 1996), while others have been described as "*linguistic diversions' and 'vacuous humanism*." (Gleeson, 1997). Social processes that 'dis-able' are only apparent in their results (such as punitive disciplinary practices, eugenic policies, economic disenfranchisement). Resistance is a common theme in disability studies. It is there in Foucauldian accounts of students patronized by teachers. (Paul Rabinow1999) and is apparent in analytical studies and disability aesthetics expressed through art. (Gabel Susan Lynn 2002).

Young (2000) proposes to include differently situated voices to overcome disagreement and to speak across their differences, drawing on the knowledge of all for greater understanding. This can lead to solidarity and community at the micro and meso levels.

Multiple problems arise with some of the Social and Radical Constructionist Post-Modernist theories as truth is regarded as relative, subjective varies, or as they term it is '*pluriversal'* and confusing. Truth becomes "*dependent on the individual's interpretation of an experience*", not what "*actually*" happens. Not only truth and reality, but also "*evidence*", "*document*", "*experience", "fact*", "*proof",* and other fundamental categories of empirical research in physics, biology, statistics, history, law become social and ideological constructions. Thus, a *"realist" or "rationalist*" interpretation is subjected to criticism. Joe L. Kincheloe (2008) commented, *'one could then say that something could be both true and false simultaneously*.' This would make it impossible to make comparative judgments according to each worldview and lead

to a breakdown in communication. The theory is ambiguous as it is unorganized and lacks a clear set of defining goals. Intersectionality is unlikely to achieve equality. (Jibrin, Rekia; Salem, Sara 2015; David A. French, (2018). *"Intersectionality, the Dangerous Faith"*.

3.2.4 Critical Theory:

It is an interdisciplinary set of theoretical approaches which calls to activism. Thinkers use the method to describe socio-political constructions like disability. Critical disability theory or CDT (Meekosha & Shuttleworth, 2009; Vehmas & Watson, 2014) is a cultural, political, and social phenomenon. Julie Avril Minich, (2017) argues that the goal of critical disability theory is the "*study of normative ideologies that should produce knowledge in support of justice for people with stigmatized bodies and minds"*. It should consider the exclusions, stereotyping, and normative presuppositions of disability studies and favor intersectional approaches.

Others argue that activities or examples, and material practices connected to access are an essential part of severe disability scholarships, 'whether in classrooms, conferences, cyberspace, or our writing' (Hamraie, 2016). As opposed to surgical intervention or assistive computer technology or rehabilitation, a problem relating to the inability of people who are unable to walk to use public transport can be solved by investing in providing for wheelchair access and special zones to make public transport user friendly.

Dianne Pothier and Richard Devlin (2006) argue *"disability is not medical or health issues are not just issues of sensitivity and compassion; on the contrary, it is a matter of politics and power (insufficient), power and power to."* (Gillies 2014 and Sleeter 2010).

3.2.5 Capability Model:

The Capability Model pioneered by Amartya Sen (Nobel Prize-winning economist: *Development as Capability Expansion*) has an economic basis. From the early 1990s, the need for international standards of measures on QOL (Quality of life) was linked to global development dialogues and consequentially with discourses about human rights.

In this model, he postulated that economic disability results from 3 factors:

1. From differences in individual characteristics e.g., nature of impairment, age range, racial affiliation and gender type etc.
2. Available individual resources
3. Environmental (physical, social, cultural, economic and political) effects

The model was developed for welfare economics to assess personal wellbeing, poverty, and inequality and has additionally been useful in public health in assessing financial capability, and disability. (Allmark and Machaczek, 2015) by being linked with more significant international public health programmers and interventions and to welfare or social security.

In the Capabilities Model, people's wellbeing is looked at as freedom and functioning, rather than the number of goods consumed i.e., with what people have the choice to be or can achieve by using these commodities.

Two essential concepts in this theory are capabilities, a blanket term for opportunities to achieve, external or internal, and functioning, which refers to all types of achievements. This approach lays the premise that, when promoting human development, the focus should be on "*functioning"* and freedom in terms of "being and doing, "which is compatible with what people can achieve in a given context. Martha Nussbaum (2000). Comprehensive central capabilities that

constitute an individual's capability set are required to lead a fulfilled life. (Nussbaum, (2006). These include preservation of life, good health, body integrity, sense, imagination and thought, emotion, practical reasoning, affiliation, respect for other species, playing and control over one's environment.

Nussbaum, Sen, 1993, state that human development must be connected to an understanding in terms of people's capabilities i.e., what they can accomplish they should be afforded the opportunities for development.

However, even though the capability approach provides new insights, some weaknesses remain. Firstly, it is related to collective action (Olson, 1965) that may be required to enhance people's capabilities through an appropriate agency, and secondly, the issue of responsibility is related to improving freedom. This implies a need to go beyond the views of Sen and Nussbaum (1993) and addresses the set of relationships that link People of Determination to non-disabled people.

Social capabilities are new capabilities acquired by interactions (Stewart (2005). Social capabilities are also generated within specific social structures, such as self-help groups, associations, and trade unions. (Ibrahim, 2006). The capabilities framework provides a more general theoretical framework in which to locate the social model of disability

3.2.6 The Human Rights Model:

Multiple movements for Human Rights picked up pace after the immeasurable sufferings of peoples during and as a consequence of World War II, for instance, the feminist movement, the civil rights movement the 'right to health' and the tendency for the rights of the People with Disabilities. In this context, the landmark Universal Declaration of Human Rights (UDHR) was

passed in 1948 with the declaration: *"Recognition of the inherent dignity and the equal and inalienable rights of all members of the human family is the foundation of freedom, justice, and peace".*

This was followed subsequently by many groundbreaking Acts, Conventions, Commissions, Conferences, and policy statements at the international, regional, and local levels like the 1976 International Covenant on Economic, Social and Cultural Rights, 266 International Covenant on Civil and Political Rights and the Human Rights and Equality Commission. In all of these deliberations, a fundamental human right-the right to self-determination and the call to end discrimination- was paramount. Americans with Disabilities Act (1990) in the US and the Disability Discrimination Act (1995) were pieces of legislation that recognized the legal rights of disabled people In the Equality Act (2010). Disability was regarded as a protected characteristic, against which it was illegal to discriminate against. Equality of opportunity was established by this Act and have to create good relationships between various groups- those with and without protected characteristics.

On an international level Rapporteurs head monitoring bodies to review state reports according to International Norms and Standards Relating to Disability (The Standard Rules on the Equalization of Opportunities for Persons with Disabilities, Adopted by General Assembly resolution A/48/96, annex of Dec 20, 1993). These standards have been formulated for implementation of rights, to guide and reform policies and to review complaints alleging human rights violations. Even in such a system, disability has not always been understood as a rights issue but viewed instead as a 'pathology' of exceptional individuals, resulting from environmental and societal conditions. This view reinforces disadvantage and leads to marginalization and discrimination. A human rights framework is empowering. As the name suggests, the human rights

model is built on human rights principles. It identifies disability as an intrinsic part of human diversity and should be respected in various forms People of Determination same rights as everyone else in the society. Damage must not be used as an excuse to deny or restrict the rights of the people.

3.2.7 Disability Poverty and Inequality Model:

To view the trio states from the perspective of the Social Model has helped to bring the context of the disabled to the forefront. Still, in the practical sphere, the efforts made to ameliorate the conditions of the most marginalized group-most suffering from chronic poverty- are only like a drop in the ocean. People with disabilities make up approximately 10-15% of any population (WHO).

The causes of poverty are cyclical and reinforce the system-low level of education, low wages, poor nutrition, poor housing, poor health and chronic poverty becomes intergenerational through oppressive political, economic, and societal structures leading to discrimination based on class and race. Society emphasizes the morals of a capitalistic market economy.

The intersection of poverty and disability has been well-documented. (Paul Newacheck & Neal. The strong association of economic and social disadvantage according to Halfon, (1998) is related to elevated prevalence of disability according to the National Health Interview Survey. *"Poverty is not simply the consequence of a lack of resources. Some people are unable to access existing resources because of who they are, what they believe, or where they live. Such discrimination is a form of exclusion and a cause of poverty*". (DFID 2000e)

The economy of the largest shareholder (the US) is heavily based on the ideology of neoliberalism and firmly upholds multinational corporations' interests. The structure of the World

Bank thus militates against curbing the power of big business. Statistics on levels of poverty are used in different ways to show that poverty is increasing or decreasing. A report for the World Bank by Shaohua Chen and Martin Ravallion (2004) suggests that 390 million fewer people live on less than $1 a day in 2001 than did in 1981. This figure combines poverty reduction in East Asia (particularly in China) and the Middle East with significant increases in poverty in sub-Saharan Africa and South Asia (including India) and Latin America. Indeed, if China were to be left out, then the numbers of people living on less than $1 a day in what they term the 'developing' world would be seen to have increased from 840 to 890 million during this period.

Disabled people are forced to live in a social prison. Nothing less than dismantling the prison and replacing it with a non-competitive form of society, can breakdown the doors which bar our empowerment." (Finkelstein 2001b)

Recent critical literature from disability studies would prefer to explore inequalities by questioning the able-bodied norms and values they see as implicit in standard health-related measures. This critical literature also notes a perceived all-embracing concern with 'ability' to work, adherence to variations of a capabilities approach that still focuses on functioning or a misplaced emphasis on producing fine graduations of debility and capacity. This is why, when exploring inequalities and disability, more critical debates emphasize the importance of considering the norms and values implicit in interventions and evaluations designed to measure their effects, alongside the broader significance of more inclusive practices associated with a human rights-based approach.

To ameliorate the quality of life for the persons of determination, support services must concentrate on programs targeting basic improvements in life conditions, enhanced educational

opportunities, and assistance in career opportunities, such as provisions for skill-based learning and apprenticeships in preparation for professional development.

3.2.8 Disability-Diversity (Dis) Connect Model:

While disability has been discussed, specifically within the academic environment, the research to document the importance of its inclusion in diversity literature has been done on a small scale. A new conceptual framework, namely Disability-Diversity (Dis) Connect Model (DDDM), approaches disability as a multifaceted aspect of campus diversity. It is assumed that the present institutional climate is limited in its knowledge of Students of Determination within a higher education setting, due to reduced exposure and inadequate knowledge of disability. These conditions promote a persistent lack of awareness and misunderstanding of student disability. DDDM combines the theoretical basis embedded in the social model of disability (Oliver, 1996), minority group model (Hahn, 1986), and intersectionality (Crenshaw, 1989; Hirschmann, 2013). In DDDM, it is suggested that the role of post-secondary student disability be patterned via the student's acknowledgment of disability. This understanding of disability can then help students with disabilities to recognize past vilification, develop tolerance, and progress toward a better understanding of post-secondary student diversity.

The seven tenets of DDDM framework are related to the experiences of Students of Determination and post-secondary community members' views of disability within the higher education environment. There are reduced opportunities to increase student empowerment and campus-based awareness in post-secondary diversity surrounding in which disability is frequently a minimal aspect (Davis, 2011). The disability must be recognized as a unique student characteristic instead of only being seen as a part of diversity. Students who have disabilities

operate as the most significant multicultural minority (Anderson, 2006) and "cross all racial, gender, educational, socio-economic, and organizational lines" (Disabled World, 2014)

The DDDM framework is grounded on the following tenets:

1. Usually, there is a risk of stigma based on disability (Hadley, 2009; May & Stone, 2010; Milsom & Hartley, 2005). But seen as a multifaceted element of diversity and as a part of the student's uniqueness the model is useful in acquiring accommodations within the postsecondary environment, for students who voluntarily self-identify a disability and thereby create an accommodation strategy for themselves.
2. Support members of the postsecondary community must not distinguish or judge. They might also partake in voluntary commitments within the higher education environment related to disability service support (i.e., planning coursework to help personal requirements).
3. Either due to their disability or a mix of their disability and a diversity categorization (Hirschmann, 2013), the students with disabilities can be categorized as members of their postsecondary student diversity system. The acceptance of disability as an equal, non-stigmatized quality of student diversity manifests through understanding one's disability.
4. Every individual has a clear understanding and explanation for the intersection of their identities (e.g., presence of disability, gender, racial background, etc.) (Crenshaw, 1991; Hirschmann, 2013). Interpretation of the many memberships and their effect on a student's life can change with new life experiences (e.g., beginning college).
5. Factors such as physical, emotional, intellectual disabilities, or an arrangement of multiple disability classifications make disability dynamic. The various types of

disabilities must not be seen as a singular category (Centers for Disease Control and Prevention, 2014; Raue & Lewis, 2011; World Health Organization, 2011). To achieve the complete acceptance of diversity, disability should be recognized as multifaceted and multifunctioning, leading to its overall unique identity. For instance, level of functioning, type of disability, and disability visibility (e.g., wheelchair use, use of adaptive technology) help understand the diversity within student disability.

6. The Disability-Diversity (Dis) Connect Model is used to understand the relevance and effect of student's social interaction within the campus atmosphere.
7. Students of determination from different racial and ethnic backgrounds have similar distinctive postsecondary integration experiences as students with disabilities. Hence, the use of 'integration' can be debated as a justified terminology for this model.

Two student disability type's development within the Disability-Diversity (Dis) Connect Model are:

1. Disability-Diversity Disconnect: The student with a disability lacks the desire to fully (or deliberately) cooperate in the university surroundings and does not assimilate due to difficulty incorporating disability into a tertiary setting and having different experiences from students identifying with other diversity memberships. Students within this type have negative experiences. The student does not see the college surroundings accepting disability as a part of student diversity. The disability-diversity disconnect remains.
2. Disability-Diversity Connect: The student with a disability recognizes his/her disability as one of the many roles within his/her full character and is fully assimilated within the post-secondary diversity background.

At the point of admission, each student retains specific attributes that may lead to his or her post-secondary experience, including features like ethnicity, gender, disability type, etc. The overall diversity of the student is also affected by demographic and institutional characteristics. Moreover, these qualities may impact the students' future academic and social opportunities within the higher education environment and it is imperative for Students of Determination to realize that disability is an included, accepted part of student diversity and perceive that they are genuinely connected to their institutional setting.

3.3 The Bio-ecological Model:

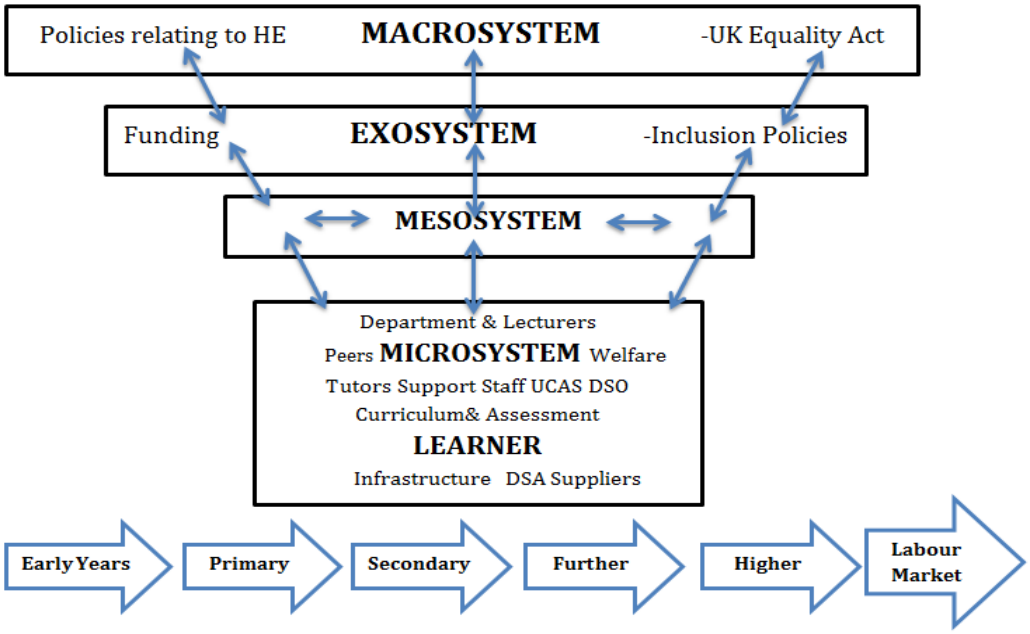

Fig. 1

The model is comprised of five systems of interaction. Each of these systems is located in the preceding one: 1) Microsystem, 2) Mesosystem, 3) Ecosystem, 4) Microsystem, and 5) Chronosystem. Since it was developed four decades ago, Bronfenbrenner's environmental model (1977,1979,1992) has been applied in various fields of study, such as children's mental health (McLeod and Shanahan, 1993), pediatric injury (Schwebel & Brezausek, 2007), suicidal ideation

(Langhinrichsen-Rohling, Snarr, Slep, Heyman, 2011), and to the character of mixed-race college students. It has also been used to develop consultation training environments (Lau and Ng, 2014) and in working with immigrant students (Paat, 2013; Stebleton, 2011).

This model was developed and refined by Bronfenbrenner (1979, 2005). The theory first aimed to find out how human development is influenced by the environment in which an individual is existing. Later versions placed more importance on the role of individuals in their own development (Tudge et al. 2009). In the subsequent version of the theory, Bronfenbrenner deals with four key interrelated elements: 'process' (human development through **interactions** with the environment around them); 'person' (**personal characteristics** that impact on development, e.g. age, skills and temperament); 'context' (**the environments** which the person encounters); and 'time' (the **time** in which the process occurs) (Tudge et al. 2009). The context of the individual is described by Bronfenbrenner with reference to five systems: **microsystems** (factors in the environment immediately around the individual); **mesosystems** (interactions between factors within the microsystems); **ecosystems** (factors outside the immediate environment impacting the individual's development); **microsystems** (factors and culture outside the physical environment) involves the broader culture and ideological worlds, belief systems, societal values, political trends and community's practices as powerful elements in development (Swick and Williams, 2006) and the **chronosystems** (human development over time). A more extensive account of Bronfenbrenner's work is available in McLinden et al. (2016) and Anderson, Boyle, and Deppeler (2014), who advanced BST further to present a Bio-ecological Model of Inclusive Education. The ecological model outlined by them targets inclusive education in schools and serves as a useful structure in understanding the 'complicated, messy and changeable' environments and various influences on a child's education.

Human development is primarily determined by the individual's genetic blueprint and multilevel sociocultural variables (McGue and Bouchard, 1998; Moore, 2013). Bronfenbrenner (1979) emphatically argued that human development is shaped by the individual's interactions with complex multilevel dynamic socio-ecological systems.

We need to understand an individual's capacity to overcome any obstacle and influence their success through resilience. Resilience is the capacity shown through positive-thinking, goal-orientation, educational aspirations, achievement motivation, persistence, hopefulness, and optimism (Engler, 2007). One can speak about the so-called 7Cs; '*competence, confidence, connection, character, contribution, coping, and control*'. Adding resiliency to Bronfenbrenner's model gives us a broader understanding of why people deal with their professions in specific ways. We can focus on what works, instead of getting stuck on, and frustrated by, what does not work (Oddone, 2002 and Engler (2007)

Miller (2005) states that resilience helps us to find strength in trying circumstances. '*We are all born with resilience conditions, which include social competence, problem-solving skills, critical consciousness, autonomy, and a sense of purpose'* (Bernard, 1995 cited in Engler, 2007).

Entrepreneurship is the individual's beneficial willingness to create, implement, and take risks to satisfy oneself and others. It is the necessary foundation of the welfare state. A modified model of Bronfenbrenner's Development Ecology to which an intra- level (the individual micro-level) and social networks have been added. Resilience helps us to stimulate learning processes through vertical and horizontal networks. It is essential in society to recognize each other as a resource and let an individual develop themselves in the network of relations. Adding resilience and entrepreneurship to Bronfenbrenner's model provides a broader understanding of the individual's development on the micro and macro levels. Organizational conditions in which the

individual acts must be considered in order to encounter changes and transformation processes. The way reality is looked at and defined on different levels –family, organization, and society – affects our actions. A clear mission, values, and core ideas of a company will positively influence its human resources.

Persons with resilience and entrepreneurial skills define their activity, regardless of their organizational context. They can reflect on the interplay between different levels in their surrounding world about their professional development.

Drakenberg's (2004) study complements Bronfenbrenner's model with a fifth level, an ex-macro level, comprised of environmental events, transitions in life, and socio-historical events. Political, economic, social, technological, and environmental factors depend on each other and influence everyday life in a way that has been stressed by globalization and information technology, where knowledge processes among individuals have become more diversified, and the interplay between the different levels in society has narrowed.

At the core of the model is the learner with determination. Each learner has unique characteristics and needs, which is vital to acknowledge in any analysis of their education involvement. As an illustration, there are several kinds of disability affecting individuals in various ways. The model is useful in providing the 'lived' accounts of individuals' experiences regarding their specific environments to assess a given practice's usefulness about some theory. The analysis of any study done based on this model helps to inform where corrective action would need to be taken and help in the progressive development of policies.

3.3.1 An Example of the Application of the Bio- Ecological Model:

This eco-friendly system has been experimented by researchers, educators and practitioners to understand the participation of individual students and to utilize it in academic advisory services.

In a study undertaken at a Texas community college in the US, of advisory services for international students, in the academic year 2013-2014, the Bio-ecological Model was used to improve the said services. Below the researcher presents this example with the five interacting systems which form the context within which the time frame interacts with processes and individuals.

The analysis of any study done on the basis of this model helps to inform where corrective action would need to be taken and could help in the progressive development of policies. In this part of the thesis the researcher intends to show the structural elements of this model and the corrective actions that were indicated through the relevant research example.

3.3.2 The Microsystem

The deep underlying circle, the microsystem is a "pattern of activities, roles, and interpersonal relations experienced by the growing person in a given background with specific physical and material attributes" (Bronfenbrenner, 1979). In academic recommendations, the principal individuals that students interact with are academic advisors. For international students on campus, academic counseling is vital and beneficial and they view it as having a favorable effect on their studies and in their transition to college life (Cadieux and Wehrly, 1986; Charles & Stewart, 1991; Tas, 2013). However, international students do not receive adequate advisory

services from the international office and advisors (Nazarenko, 2006). Especially, Asian and Latin American students are anxious, due to their need for acclimatization and general information about the structure and requirements of academic studies.

Although it may seem far away from the students and their discourse with academic advisors, a wide range of features in the microsystem can potentially affect students' experiences e.g. ethnic contrasts, or a lack of knowledge leads students to develop negative feelings, including embarrassment, intolerance, repugnance, isolation, and depression (Erichsen & Bolliger, 2011; Hamboyan and Bryan, 1995; Szabo, Ward, and Jose, 2016; Wang, Wei, Zhao, Chuang, and Li, 2015) (Li and Kaye, 1998; Leong, 2015; Yan and Berliner, 2013).

3.3.3 The Mesosystem:

A mesosystem is a group of microsystems with linkage between each of them (Bronfenbrenner, 1977). For students the mesosystem requires establishing a link not only with academic advisors but also parents, friends, faculty, staff and other student affairs professionals. Each sphere of interaction forms a microsystem and a collection of these interactions creates a mesosystem.

Interactions in the mesosystem with parents and friends play a critical role in the student's support network and can have a crucial impact on the students' college involvement. Students at that level, particularly in our Eastern context, usually look at their parents and friends as primary assets of support and rely on them for help and advice. An early study (Leong; Sedlacek, 1986) noted that students often seek advice from parents, older friends, or other students when faced with emotional or social problems but when they have study or career-related questions they generally consult faculty advisors as well as parents and older friends. A recent study by Bhochhibhoya,

Dong, and Branscum (2017) shows students optimal dependence on family and friends for social support. Baloglu (2000) suggests that in order of preference usually friends are the most favorable source of support for students, followed by parents and faculty.

3.3.4 The Exosystem:

Expanding outward to the next level the exosystem includes "*other specific social structures, both formal and informal, that do not themselves have the growing person but have an effect upon or surround the closest context in which that person is found, and thereby influence*."

(Bronfenbrenner, 1977) It is factors that do not affect the learner's immediate surroundings yet affect their experience, e.g., immigration laws, visa regulations and academic requirements for international students. The policies with regard to international students caused confusion, stress, and even fears among students, who were enrolled in the universities (Rose-Redwood and; Rose-Redwood, 2017). Consequently, academic advisors and other educational practitioners experience more challenges when working with international students. Advisory services need to improve and the absence of adequate policies has put enormous pressure on students from failing or dropping a course. (Bargerstock and; McCarthy, 2012).

3.3.5 Chronosystem:

Lastly, the chronosystem distinguishes the effect of time on this framework of ingrained relationships. All of the sub-systems are placed in time and are liable to change over time (Bronfenbrenner, 1992). Limited literature in academic advising focuses on the chronosystem, probably due to difficulties of gathering long term data that can illustrate the shift and development of the sub-systems in the model. However, at the student level, researchers in academic advising

have recognized the importance of understanding students' extended life movement and individual development over time, such as prior educational and social environment, timing of coming to the U.S., duration of stay in the U.S. and other life changing events through time (Newell, 2015; Stebleton, 2011). Researchers have also developed advisory approaches that highlight long term and comprehensive viewpoints. For instance, Appreciative Advising, consists of six stages, encourages advisors to uncover students' life interactions in the past (Disarm and Discover), identify their future goals (Dream), develop and implement plans to realize their goals (Design and Deliver) and motivate them to conceptualize about something bigger and better in the future (Don't Settle) (Bloom, Huston, & He, 2008). Appreciative Advising has been recognized by many researchers as an important approach to bolster students' success in both four- and two-year environments (Hande, Christenbery, and Phillippi, 2017; Huston and Bloom, 2007; Zhang, 2016a).

3.3.6 Application of the Bio-ecological Model of Inclusive Education in HE:

Students with disabilities have the required skills to embrace a greater inclusive learning environment. It is in this context that we explore the inclusion of students with determination within UAE HE institutions within the parameters of the Bio-ecological Model (based upon Bronfenbrenner's Approach: 1979, 2005; Anderson, Boyle, and Deppeler 2014). This model can be used as a means through which to understand young people's experiences of HE and the facilitators and obstacles to participation they face. The Bio-ecological Model helps to analyze data. Anderson, Boyle, and Deppeler (2014) argued that the ecological systems theory provides an 'invaluable framework within which to organize the environmental factors and understand their influence on inclusivity by **placing the learner at the 'center'** with **each contributory factor**

'located in relation to the learner's educational ecosystem'. Similarly, May and Bridger (2010) found it to be 'a useful model to elaborate the many facets of influence working in a given condition'.

The Bio-ecological Model seems to provide an authentic methodology for the participation of students with determination with diverse needs in HE, as it affords a long-term subjective study, enabling observations about the growth and development of **individual** youth over a period of time, as opposed to at a particular point in time. It can help in providing a comprehensive understanding for the creation of a progressive campus environment that can aid student development. The quality of education is related to its accessibility to a diverse population as it has to fulfill the need for adaptability to a greater number of students as well as the development of clarity in the curriculum, to promote maximum understanding, greater student interest and involvement.

At the core of the model is the learner with determination in HE. Each learner has unique characteristics and needs which is vital to acknowledge in any analysis of his or her involvement in HE. As an illustration, there are several kinds of disability affecting individuals in various ways. The model is useful in providing the 'lived' accounts of the experiences of particular individuals with reference to their specific environments, in order to assess the usefulness of a given practice, in reference to some particular theory. In the figure below the link between the different contexts of an individual's life from early years to the labor market are indicated.

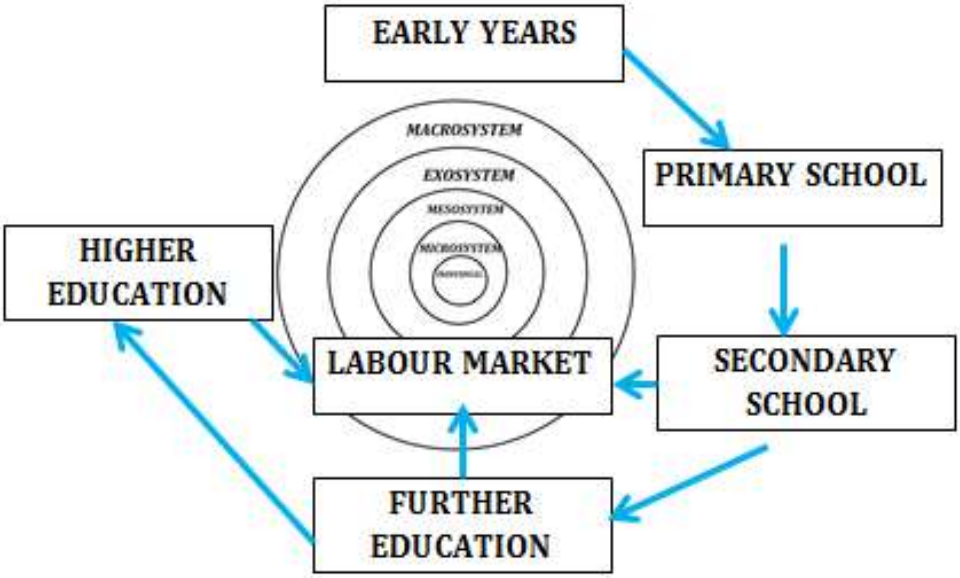

Fig.2

This model can be used as a means to understand young people's experiences of HE and the facilitators and obstacles to participation they face.

The analysis of any study done on the basis of this model helps to inform corrective action that needs to be taken and could help in the progressive development of the policy. The researcher chose this model above all the other models because of its prime suitability to the context of research relevant to Inclusive Education at the Higher education level in the UAE. The model was chosen for its wide scope and its comprehensiveness. The researcher shall use this model as a base to frame the research questions as it is a layered approach, which targets not just the students, but their environments and also the country they live in.

CHAPTER 4: RESEARCH METHODOLOGY

The researcher chose Bronfenbrenner's Bio-ecological model for this study, in formulating the research questions as well as the questionnaires and interview formats. This chapter considers the various levels of the research process along with the challenges that were faced in carrying out this research. It then looks into some of the basic framework that was decided upon for the purpose of this research, like the approach used, methods of data collection, sample sizes, variables of study, and the hypothesis formed. Other issues like the reliability of data, and ethical considerations are also addressed here.

4.1 Research Questions, Setting, and Context

1. What provisions are provided by the University in meeting the needs of Students of Determination?
2. What are the barriers encountered by the Students of Determination in using the provisions in the University?
3. What are the barriers encountered by the Faculty and Accessibility Staff in providing the provisions to the Students of Determination at the University?
4. What strategies can be recommended to improve the University's inclusive status?

4.2 Research Setting:

According to Fraenkel, and Warren (2002), population is a reference to a set of individuals having common characteristics in which the researcher is interested in. The sample of the study

was determined based on random sampling, purposeful sampling, and snowball technique. Two different university settings in the UAE (Dubai and Abu Dhabi) were used in this study. This data collection was carried out from May 2019 to June 2020, Quantitative and Qualitative data were collected from three different samples - Students of Determination, Faculty members, and Specialists of 7 colleges of a Federal higher education Institute in the UAE. Both campuses have Student Accessibility Services Unit (SAS) offering support services to Students of Specific Learning Disabilities, physical impairment, visual impairment, hearing impairment, and Attention Deficit Hyperactive Disorder.

4.3 The Context of the Research: Federal University:

The sample Federal University has campuses in UAE's twin largest cities, Abu Dhabi and Dubai, under one central administration. The University received its accreditation from the 'Middle States Commission on Higher Education' from the USA. The University offers a variety of internationally recognized undergraduate and graduate programs at the seven colleges under it. The colleges are:

1. College of Arts and Creative Enterprises:
2. College of Business
3. College of Communication and Media Sciences
4. College of Education
5. College of Humanities and Social Sciences
6. College of Natural and Health Sciences
7. College of Technological Innovation

This Federal University is internationally recognized as leading University in the MENA region for excellence in educational innovation, research, and student leadership. It serves the changing needs of the nation in the economic, social, and cultural spheres. It has a diverse student intake though the majority is of Emiratis. It is equipped with the most progressive technologies. Education for locals is free. English is the medium of instruction.

The revised admission criteria for this university is 5 O-levels & 2 A/AS-levels with a grade of 'C' or higher or the IB Diploma with at least 24 points. Applicants with an EmSAT score of 1100, IELTS or TOEFL of 5.0 IBT score of 61, maybe provisionally admitted in Listening and Speaking Skills courses at the University.

4.4 Research Approach:

A mixed method approach was adopted for this research. For an analysis of findings, the researcher followed the interpretive research paradigm using both the qualitative and quantitative methods. The researcher chose these two methods to collect data, as both these analytical tools help provide a more realistic interpretation of the phenomena being studied, through triangulation. According to Cohen et al. (2000), triangulation means "*the use of two or more data collection methods in the study of some aspect of human behavio*r." A merely quantitative analysis would miss out on the human affective perspective of the experience, and the quantitative is required to give an empirical, evidence-based edge to the research which could inform practice and help in the framing of new policies. A qualitative study is in narrative form and helps find solutions to a problem through divergent views, which provide a deeper understanding of the problem and aid in finding solutions. This approach shows the finer details of a problem and is more descriptive (Mertens 1998). According to Denzin and Lincolne (2003), a qualitative approach is "*designed to*

provide a rich, contextualized picture of an educational or social phenomenon." The proposed study follows the mixed-method sequential explanatory design approach as ascribed by Creswell et al. (2003).

4.6 Research Design

Both exploratory and explanatory research designs were used to investigate the problem. An explanatory sequential mixed methods design was also used, which typically involves the initial collection of quantitative data followed by the qualitative data to corroborate the analysis. In the first phase of the study, survey data was collected from Students of Determination, Faculty, Specialists from the Accessibility Unit at seven colleges of Higher education, affiliated to the Federal University. The second stage was carrying out the qualitative research. The dual findings were corroborated for a comparative analysis. In the follow-up the plan was to explore the barriers encountered, the current level of satisfaction among Students of Determination in utilizing the provisions offered as well as the barriers faced by the Students of Determination, Faculty members and Specialists in the experimental phase to make Inclusion a success at the HE level.

4.7 Population and Sample Size:

The study population was from Students of Determination, Faculties, and Specialists of the Federal higher education university in the UAE. A total of 82 sample sizes of the university were studied. These comprised of 52 Students, 20 Faculty members and 10 from Specialists that had responded to the questionnaire. Random sampling, Purposeful sampling, and Snowball sampling were the methods employed for data collection.

4.8 Instruments for Data Collection:

Interviews and questionnaires were the data collection instruments formulated and used by the researcher for this study. Interview questions (see Appendix) were aimed to elicit relevant information concerning the provisions For Students of Determination in the Higher education sector in the UAE.

Questionnaires/surveys aimed at gathering quantitative data. Three different questionnaires were used by the researcher for the three population categories studied.

The following were the themes of the major queries in the questionnaires for the six categories:

1. The Application, Interview, and Admission procedure.

2. The functions of the Accessibility Department.

3. The state of Academic Services.

4. The state of financial support.

5. Rapport between the students, Accessibility Department, and faculty.

6. The accessibility of infrastructure on the campus.

Similarly, the interview questions dealt with:

1. The profile, and experience of the interviewee-Student/ Faculty/ Accessibility Department staff.

2. Knowledge about Law 29/2006 on the Rights of People of Determination.

3. Academic and general provisions for SWD's, and the proficiency in the delivery of these services and the challenges for all concerned parties.

4. Cooperation and Collaboration between all sectors.

5. Future recommendations.

The questionnaires for all three categories of respondents require the demographic information about them i.e., age, gender and nationality and had a final identical portion with the following content:

Section 1: University's approach to Students of Determination in Application, Admission, and Interview stage.

Section 2: Services provided by the Accessibility Unit at the University.

Section 3: Academic services provided by the University.

Section 4: Financial support by the University.

Section 5: Relationship with peers and faculty at the University.

Section 6: Amenities and infrastructure access in the University for Students of Determination.

The last part of the questionnaire had open ended questions regarding the following:

- Needs being addressed successfully / not adequately by the university.
- Key challenges faced in availing the provisions provided by the University.
- Suggestions for improvements of services.

4.8.1 Students of Determination Questionnaire

The initial section of the questionnaire is followed up by information regarding degree pursued, current year and semester of study, nature of the disability i.e. visual, hearing, speech, orthopedic, or others were, and the severity of it (mild/ moderate/ severe); the type of school attended; regular/special needs; residence type (home/ hostel/ other); mode of information used by the student to access the services provided by the University; how respondents overcome barriers

to provisions; the disclosure of disability during the admission process and the names of assistive technology used.

4.8.2 Faculty Questionnaire:

In addition to demographic information, such as designation, age, gender, nationality, the questionnaire required the mention of subjects taught, years of teaching experience, the number of Students with Determination they are currently supervising. Besides, the questionnaire also inquired on how the Students of Determination were made aware of the services provided by the University, and how respondents would overcome barriers.

4.8.3 Specialist Questionnaire:

In addition to the basic demographic details, the Specialists were required to mention the number of Students of Determination under their supervision, and the nature of their responsibilities.

All questionnaires were structured in the modified Likert 5-point scale ranging from "Strongly Agree- S.A." through "Agree-A," "Neither Agree/Disagree -N.", "Disagree-D," and "Strongly Disagree-SD." Respondents were instructed to follow the instructions to answers the queries.

4.9 Sources Referred to for creating the format of the questionnaires:

Phase 1	Instrument	Number of Items	Sources Referred to for the format of the questionnaires
Study 1	Student of Determination (survey)	66	Megivern, D., Pellerito, S. and Mowbray, C., 2003. Barriers to higher education for individuals with psychiatric disabilities. *Psychiatric Rehabilitation Journal*, *26*(3), p.217. Reinschmiedt, H.J., Sprong, M.E., Dallas, B., Buono, F.D. and Upton, T.D., 2013. Post-Secondary Students with Disabilities Receiving Accommodations: A Survey of Satisfaction & Subjective Well-Being. *Journal of Rehabilitation*, *79*(3). Yona Leyser & Lori Greenberger (2008) College students with disabilities in teacher education: faculty attitudes and practices, European Journal of Special Needs Education, 23:3, 237-251, DOI: 10.1080/08856250802130442 Hadjikakou, K. and Hartas, D., 2008. Higher education provision for students with disabilities in Cyprus. *higher education*, *55*(1), pp.103-119.
Study 2	Faculty Questionnaire(survey)	76	
Study 3	Specialist Questionnaire (survey)	77	

4.10 Research Process and Challenges faced:

The Research Ethics Board of the University gave their approval to conduct the study. It took around 18 months to gain permission from this Ethics Board, during which the researcher's application was rejected thrice, and the main reason given was that this is a 'high risk population'. The permission granted by them was also limited, as they only permitted the researcher to have access to the Accessibility Unit, and not to the entire university campus. The Accessibility Unit is a department within the university that caters to the needs of the Students of Determination. A

letter of information along with the approval from the Research Ethics Board of the University was sent to the Director, and the Manager of the Accessibility Unit at each university where few of the students were invited for the interviews and fill the questionnaires. The researcher then met with the Director of the Accessibility Unit to explain the purpose and process of the study, so that the interest and participation of the Manager of the Accessibility Unit may be ascertained. The Manager where few of the students were invited for the interviews and fill the questionnaires.

Once participation was confirmed, the researcher formulated web-based surveys as well as consent forms. A recruitment email detailing the nature and requirements of the study along with a letter of information, and consent, and the link to the finalized survey to be filled by the respondents (Students of Determination, Faculty members, and Specialists) was then sent to each University's managerial office for email distribution. The Manager sent out these emails to the Students of Determination, the faculty, and the Specialists. These were then redistributed to students approximately three weeks after the initial survey emails, to remind all participants about the opportunity.

After receiving the responses along with the consent forms, the Accessibility Unit Manager compiled a list of students having any disability, and who were interested in participation, and invited them to the Accessibility Unit to come for an interview and to fill the questionnaires. She also narrowed down a list of the Faculty and the Specialists who were willing to participate, and requested them to come in for an interview with researcher. To ensure about the appropriateness of language, a pilot test in the online format was carried out on a small sample of the three categories of participants to ensure the appropriateness of language, assess understanding of instructions and questions, and to determine the logical ordering of questions.

The researcher initially intended to gather quantitative data on Faculty and Students pool, using purposeful sampling techniques. However, the response from these emails was very limited, as a result of which the researcher was confined to use the snowball technique, in order to get more participants involved. A follow-up email was sent out to the three categories of participants later on to serve as a reminder to those who had not yet participated.

Another challenge faced was that the researcher was refused access to the direct emails and contacts of the students, as this was against the very strict privacy protocol of this university. Without access to the entire university campus, other than only the Accessibility Unit, and without access to direct contacts of the Students of Determination, it was very difficult to get the questionnaires filled or interviews conducted with a larger sample pool.

This research was conducted in two stages, quantitative and qualitative. The first stage consisted of quantitative data collected through three different populations: Students of Determination, Faculty, and Specialists at the university, using a questionnaire. The second stage consisted of qualitative data collected through the same three populations, using both a questionnaire and through an interview.

Since the response from the faculty for the participation of the study was minimal due to the fact that the COVID pandemic began at the same time that the researcher had intended to collect data samples. Therefore, in this study, both probability (simple random sampling) and non-probability (Purposive and Snowball) sampling methods were used.

4.10.1 Quantitative Data Collection process:

This was done in three phases. Phases 1, 2 and 3 were self-administered using an internet-questionnaire which was provided to faculty and specialists. Few of the students could fill this

questionnaire on their own, however, many of them required a prompter to read and complete the questionnaire.

4.10.2 Detailed Description of Quantitative Data Collection process, Phase 1:

Quantitative data were gathered through questionnaires, using purposive and snowball sampling techniques. In this component of the study, participants were asked to complete a structured survey.

In total, across both universities, approximately 230 students were invited to complete the online questionnaire. Fifty-two responses were received. The following changes, as mentioned above, were made in the questionnaire upon completion of the pilot test. It was observed that some of the students had difficulty in reading and comprehending English (although they are verbally capable of understanding and responding in English). Therefore, the questionnaire was translated into the Arabic language for their convenience.

- The braille version was provided for the students with visual impairment.
- The Arab student's questionnaire was translated into Arabic.
- The questions were simplified.
- The questions were read to the Students of Determination when required.
- The questionnaire link was sent to the students, and a hard copy was provided according to the need of the Students of Determination.
- The font of the questionnaire was also changed for a few Students of Determination.

4.10.3 Description of Quantitative Data Collection process, Phase 2:

In this study all the faculty members across both university settings were invited to complete an online questionnaire. Twenty responses were received.

Demographic information was gathered but personal identification data was not collected and hence the questionnaires were filled anonymously. In this phase, to collect quantitative data, the Faculty Questionnaire was used, which was developed based on the literature review and the scope and purpose of this study.

4.10.4 Description of Phase 3:

In Phase 3, quantitative data was collected through a survey using purposeful sampling techniques for the Specialists (special educators) population. Nine responses were received from Specialists across both universities.

Diagram for Quantitative Data Collection process, Phase 1, 2 and 3

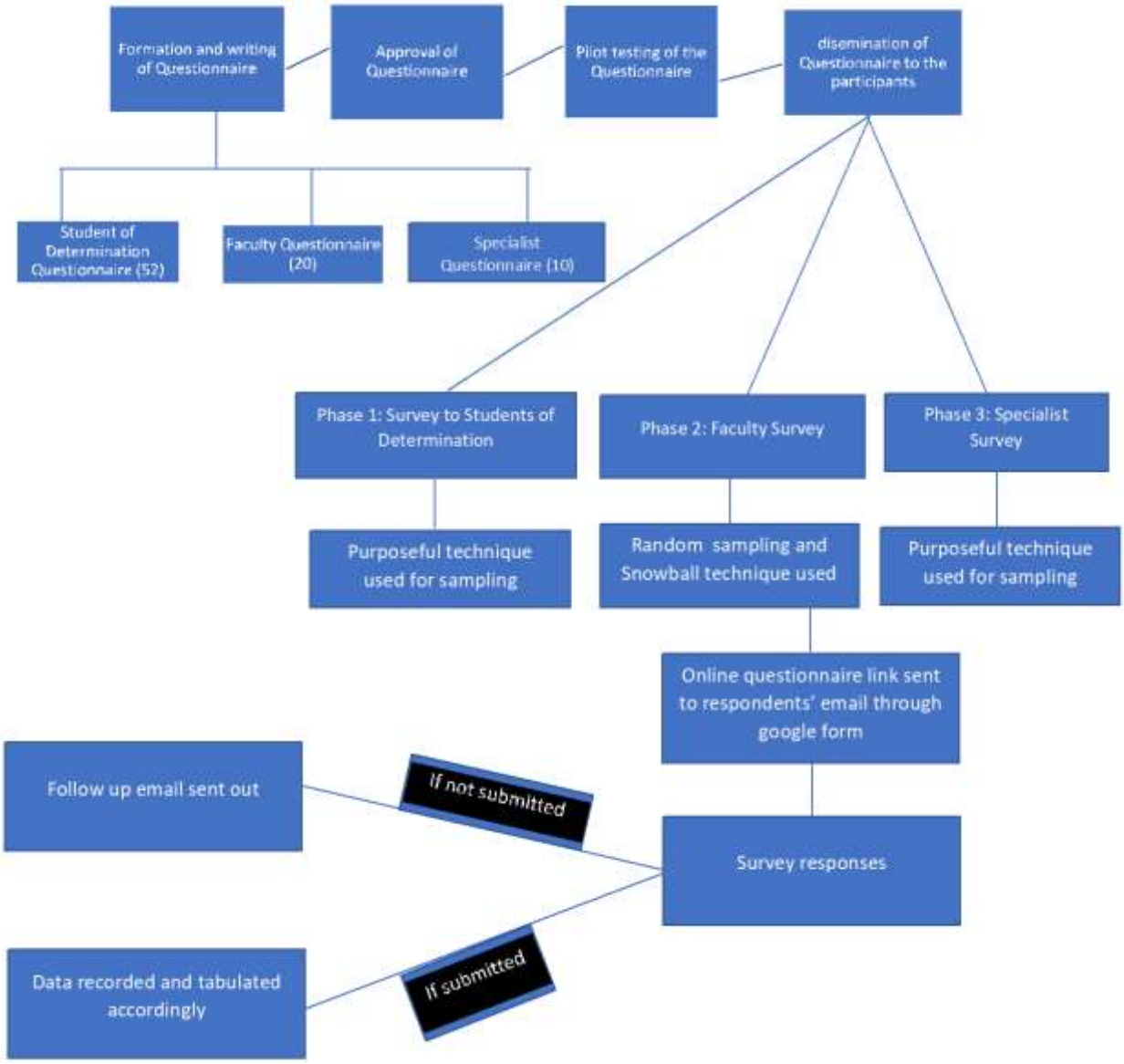

Fig.3

4.10.5 Qualitative Data Collection process:

In this stage, the study was conducted in three phases. Qualitative data was collected through semi structured interviews. With the faculty members, the researcher had interviews using three mediums: face to face interviews, telephonic interviews, and zoom interviews.

Those who wished to participate from the 3 categories, left their contact information in a separately linked section to the survey for ease of contact for the researcher. To uphold the anonymity of the data collected through the surveys, a separate survey for identifying information was linked to the research questions to identify those wishing to participate in **Qualitative Data Collection process** (participation was optional).

4.10.6 Detailed Description of Qualitative Data Collection process, Phase 1:

Students were asked to answer questions about barriers faced by them in availing the services provided, as well as learning about accommodation experiences within the university setting. Participants were explicitly requested to provide details of their experiences with instructors/professors, and the Disability unit regarding accommodations, and support procedures.

Interviews were carried out with a volunteer subsample of students for **Qualitative Data Collection process**. These students were from different disciplines.

Though the researcher would have preferred to interview all the 52 that had answered the questionnaire, but the researcher was limited in the number of students available for interview, primarily due to the fact that the students had very tight schedules and could not make it to the interview, and therefore could interview only 19 students. The interviews were conducted in the conference room, on the university campus (Dubai). All the interviewees were females.

These interviews were used to supplement whatever was missing in the quantitative data, along with additional information that was collected. Students were asked to describe their learning experiences in the university context, recall specific barriers they have had related to obtaining support, and accommodations for their learning needs to understand the meaning of the challenges they may have faced in this context. Interviews took place once the participants and the researcher had determined a location, mutually decided a convenient time, and each interview took approximately 30-60 minutes. Data was tape-recorded and then later transcribed for coding and analysis.

4.10.7 Qualitative Data Collection process: Phase 2

This 2nd phase of the Qualitative Data Collection process was carried out through interviews done with the Faculty. They were asked to provide information about their teaching experiences within the university setting. Participants were explicitly asked to detail the barriers experienced in meeting the needs of Students of Determination in the classroom setting and in providing accommodations and support.

In total, 20 Faculty members expressed interest in participating in their interviews but five of them ultimately did not attend. A total of 15 faculty interviews took place over two months and were conducted at the university campus itself, for the sake of their convenience.

Interviews were arranged during the time frames suitable for the Faculty members. The faculty members were co-operative during interviews. The researcher interviewed a total of twenty faculty members, fifteen from the Dubai campus, and five from Abu Dhabi. Each interview lasted approximately 40 minutes.

The questions aimed at understanding faculty experiences in teaching Students of Determination, citing the barriers to effective teaching that they experienced. Faculty were asked

to describe their teaching experiences in the university context, recalling specific experiences they had related to supporting Students of Determination in their classrooms, in order to understand the meaning of the challenges they may have faced in this context. Data were audio-recorded and then later transcribed for coding and analysis.

4.10.8 Qualitative Data Collection process, Phase 3

This 3rd phase was done with a volunteer subsample of Specialists from **Quantitative Data Collection process**. The Specialists were asked about their teaching experiences at the university, the barriers they faced in the accessibility unit in meeting students' needs and in providing the accommodations, and also other supports and challenges faced by them in this task.

The researcher took the initiative to first interview the senior Accessibility Unit Officers to have first-hand information to be able to observe the facilities and services provided, and have a 'feel' for the atmosphere in which the provisions are made. The researcher interviewed six officers from the Dubai campus, and three from Abu Dhabi. Their specializations ranged from visual impairment, auditory impairment, and specific learning disabilities, to counseling. The researcher interviewed each officer in the conference room of the Accessibility Unit. This included specialist who wished to participate in the interview and had replied to the researcher's email.

Diagram for Qualitative Data Collection process: Phase 1, 2 and 3

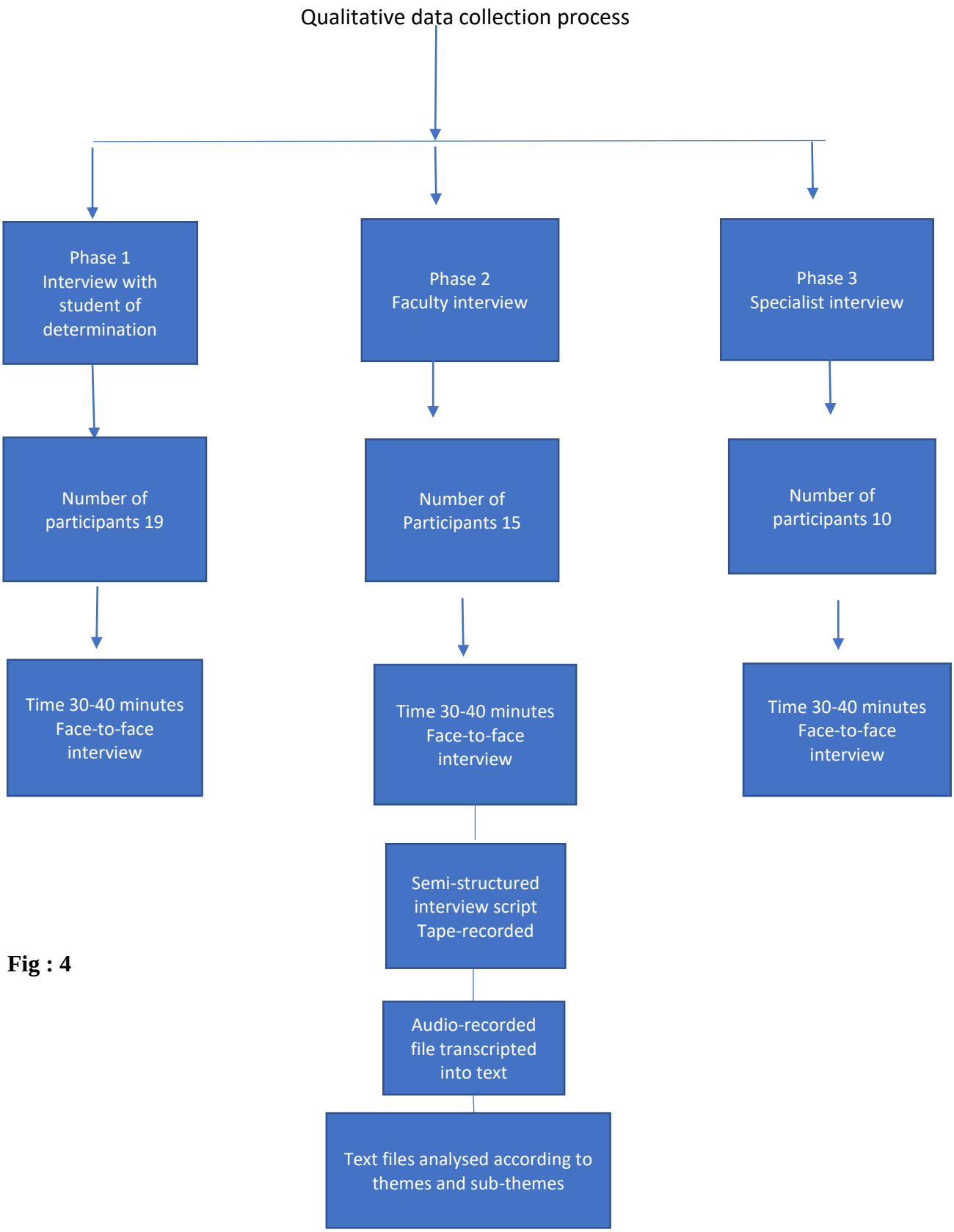

Fig : 4

4.11 Data Collection Methods:

Data collection involves the collection and measurement of information about variables in a systematic way that makes it possible for people to answer the research questions, test hypotheses and evaluate results. The researcher had the same respondents for qualitative and quantitative data collection. The data was collected from primary and secondary sources. Simple Random sampling, Purposeful sampling and Snowball sampling methods were used to gather data (refer to definitions section).

4.11.1 Primary Data Sources:

Primary data was gathered by the sources of information like- observing events, people, objects, and through questionnaires. In this survey, the primary data was collected through semi-structured interviews and questionnaires. Primary data is more reliable and gives greater confidence for decision-making.

4.11.2 Secondary Data Sources:

The secondary data sources, like literature, university profiles, and compilations from computerized databases, were used to gather data for this research.

4.12 Data Analysis:

The data analysis aims to address the research question.

4.12.1 Qualitative Data Analysis:

Qualitative analysis was carried out by organizing the collected data of the interviews, by transcribing them, translating and recording the details within them. Then coding was done to structure and label the data, and then this data was sorted into a research framework. Based on these details, themes and patterns within the data were identified and consolidated.

4.12.2 Quantitative Data Analysis:

In quantitative analysis, the data is obtained from primary and secondary sources, and is analyzed using Excel, SPSS, Office Word format, and other tools. The data analysis yields numerical results. Before the analysis, data coding of responses was carried out in preparation for analysis. This was done using SPSS software using descriptive statistics and graphical analysis. The analysis included exploring the relationship between variables and comparing the effect of groups on each other, through cross tabulation/chi square and the use of parametric and nonparametric statistics.

4.13 Variables of the Study:

4.13.1 Independent variables:

The following were independent variables in the study for each particular group mentioned.

(1) **Student questionnaire** - Age, gender, nationality, the particular university, degree pursuing, major chosen, current year/semester, full time or part time course, nature of disability, level of disability, type of school attended, residence, services provided by the university to Students of Determination, overcoming the concerned barrier, disclosure of disability during the admission process and names of the assistive technology used.

(2) **Head of accessibility unit/Specialist questionnaire –** Age, gender, nationality, responsibilities, number of students on roll, number of Students of Determination and Students of Determination mode of information for to access information about services.

(3) **Faculty questionnaire -** Designation, age, gender, nationality, and subjects taught, years of teaching experience, mode of knowledge regarding services provided by the university to Students of Determination, and mode of overcoming the concerned barrier.

4.13.2 Dependent Variables:

Dependent variables used for the study are

(1) Student questionnaire –The University's approach to Students of Determination in Application, Admission and Interview stage, services provided by the Accessibility/Disability Unit at your university, Academic Services and financial support provided by the university, relationship with peers and faculty in the university, and amenities provided for students with disability.

(2) Head of accessibility unit/Specialist questionnaire – The University's approach to Students of Determination in Application, Admission and Interview stage, provisions provided by the Accessibility/ Unit for Students of Determination at the university, academic services provided by the university, financial support by the university, relationship with students and faculty in the university, and the infrastructure access on campus to Students of Determination.

(3) Faculty questionnaire – The university's approach to Students of Determination in the Application, Admission and Interview stage, provisions provided by the Accessibility/disability Unit, Academic Services, financial support by the University, relationship with students and the rest of the faculties in the university, and the Infrastructure access on campus for Students of Determination.

The questionnaires given to the students, faculty, and the specialists addressed the different ways in which the following variables were experienced by each category: the Application, Admission and Interview stage, provisions provided by the Accessibility/disability Unit, Academic Services, financial support by the University, relationship with students and the rest of the faculties in the university, and the Infrastructure access on campus for Students of Determination.

4.14 Hypotheses of the Study:

A hypothesis is a supposition that explains the relationship between two or more variables. It must be a specific, a testable prediction about the research study that the researcher expects to ensure with a realistic appraisal on the basis of current knowledge and techniques.

4.14.1 Formulation of Hypothesis:

For Students with Determination

The following are the hypothesis used in the student survey

- (i) Null Hypothesis

  Ho: There is no significance difference between the mean scores of provisions.

  Alternative Hypothesis

  H_1: There is significance difference between the mean scores of provisions
- ii) Null Hypothesis

  Ho: There is no significant difference between demographic factors and rating scores of provisions.

Alternative Hypothesis

H_1: There is significant difference between demographic factors and rating scores of provisions.

For Faculty

The following hypothesis is used in the faculty survey

- Null Hypothesis

  Ho: There is no significant difference between the mean scores of provisions.

  Alternative Hypothesis

  H_1: There is significant difference between the mean scores of provisions.

For Special Educators

The following hypothesis is used in the special educator's survey

- Null Hypothesis

  Ho: There is no significant difference between the mean scores of provisions.

  Alternative Hypothesis

  H_1: There is significant difference between the mean scores of the provisions.

4.14.2 Statistical Analysis:

Statistical software (SPSS) has been used for the analysis of collected data. Many descriptive statistical measures such as Mean, Percentages, medians, standard deviations (S.D), Standard error (S.E), difference of means, and confidence interval. Cronbach Alpha coefficient

were also used to ensure reliability and consistency of the scale used in the questionnaire. Parametric tests were used such as T test for independent samples. Analysis of variance (ANOVA) and Multivariate analysis (MANOVA), Non-Parametric tests such as the Chi-Square test, Friedman test, Wilcoxon signed rank test, Kruskal Wallis test and Mann-Whitney U test, are used to identify the significant factors involved in the provisions provided to the students by the Faculties, Specialists, and the University.

4.14.3 Reliability of the Quantitative data:

The quantitative data is reliable if it proves the absence of any bias across time and it is consistent through repeated experimentation for various items in the instrument (Sekaran and Bougie, 2020). For reliability, the accuracy of measuring process was checked by the researcher.

'Reliability' evaluates the quality of the measurement technique used for the collection of data in a research paper. The methods used to arrive at the conclusions of a research would be acceptable only if the means to measure are reliable.

Cronbach's alpha is the widely used measure to determine the internal consistency ("reliability"). It is mostly used with multiple Likert questions in a survey/questionnaire that form a scale.

Based on the above method, the researcher applied the Reliability statistics and consequently presented the results in the Tables.

4.14.4.1 Student Survey:

The researcher looked at the output in the Reliability Statistics Table1. This gives Cronbach's alpha coefficient. The researcher was looking for a score of over 0.7 for high internal consistency. In this case, α = 0.80, which shows the questionnaire is reliable.

Table a : Reliability Statistics for Student Survey

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.795	0.807	61

4.14.4.2 Faculty Survey:

The researcher looked at the output for the Reliability Statistics Table 2. In this case, α = 0.93, which shows the questionnaire is reliable.

Table b: Reliability Statistics for Faculty Survey

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.928	0.932	77

4.14.4.3 Specialist Survey:

In Table 3 α = 0.786, which shows the questionnaire is reliable.

Table c: Reliability Statistics for Specialist Survey

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.786	0.828	51

4.15 Ethical Consideration:

The researcher began the study with the awareness of the cultural, religious, and other diverse differences that required to be valued and respected. The respondents were clearly explained the purpose of the study and the consent form. Precautions were taken to not disrupt the schedule of the respondents. During the collection of the data, care was taken to protect the personal identity and privacy of the respondents, and the purpose of the research and the use of the consequent data was explained in detail. Moreover, the researcher adhered to the questions stated in the interview protocol and avoided discussing sensitive information. While analyzing the data, the researcher had assigned fictitious names for the respondents. During reporting, communication was clear and direct, and appropriate language was used.

4.16 Confidentiality, anonymity and storage of data:

The researcher ensured that the name of the university and participants would not appear in the thesis or any publication related to this study. The information collected would be used only for the purpose of this research. The interview would be arranged at a time and place that is convenient to the participant's schedule. The audio recording and the data would be confidentially stored with a password lock in the researcher's computer.

4.17 Conclusion of the Chapter:

This chapter detailed the whole process of this research and outlined the challenges faced along the journey. It was a major learning process for the researcher, as it showed that conducting a research is more than just formulating a worthy research question, and a lot of work goes into experimenting with different research and analytical techniques in order to arrive at that those best suited for that particular research. Furthermore, there are always some issues which are unforeseen at the beginning of a research, like not being given free access to the sample pool required or even a global pandemic like COVID19 that can hinder the work. Having worked on the research framework for this study, as outlined in this chapter, the next and final step is to analyze the findings and discuss the outcomes.

CHAPTER 5

DATA ANALYSIS AND DISCUSSION

5.1 Introduction:

The analysis and interpretation of qualitative and quantitative data was carried out in two phases. The first phase deals with the quantitative part, which is based on the results of the questionnaires for students, Faculty and specialists. The second phase is the qualitative interpretation which is based on the results of the interviews.

This chapter deals with the research findings regarding the introduction of inclusive practices in education for Students of Determination at a Federal university. Quantitative and Qualitative data is mentioned below together with the themes and sub-themes pertaining to the findings and subsequent conclusions are drawn from the research.

5.2 Quantitative analysis:

A total of 95 questionnaires were distributed, 60 student questionnaires, 25 Faculty questionnaires and 10 Specialists questionnaires. However, there were only 52 respondents from the student's group, 20 from the Faculty group and 10 from the Specialists' group who completed the questionnaire. This data (a total of 82 questionnaires) was used for computing the results.

Data gathered through the questionnaire were tallied to frequency counts. The responses of all the respondents in the section of questionnaire were counted to see which among the provisions or barriers they strongly agreed upon, merely agreed, neutral, disagreed about, or strongly disagreed. These responses to the questions, were then quantified, and presented in

percentage form. The researcher has presented the data in tabular form, and analysis of this data below each table or figure.

Student's Demographic information

Table 1: Student Demographics (N=52)

Demographics	Frequency	Percentage
Gender		
Female	52	100
Age		
18-19	13	25
20-21	18	34.6
22-23	21	40.4
College		
College of Arts and Creative Enterprises	9	17.4
College of Business	6	11.5
College of Communication and Media Sciences	8	15.4
College of Education	4	7.7
College of Humanities and Social Sciences	9	17.4
College of Natural and Health Sciences	10	19.2
College of Technological Innovation	2	3.8
University College	4	7.7

Total	52	100
Year Level		
Second	18	34.6
Third	13	25
Fourth	21	40.4
Student distribution according to year level	52	100

A total of 52 female respondents participated in the survey, the reasons for this are explained below. The majority of the age-group came from age 21-23 which is 40.4% of the total respondents. Among the colleges, most of the respondents were from College of Natural and Health Sciences (N=10) 19.2%, 17.4% (N=9) were from the College of Arts and Creative Enterprises and 17.4% (N=9) from the College of Humanities and Social Sciences, and the least number of respondents, i.e., 3.8% (N=2) came from College of Technological Innovation. This data gives us an idea about the choice of subjects opted by Students of Determination, and it will allow the researcher to explore the reasons for choosing this particular university.

With regards to the Year Level of their degree course , 40.4% (N=21) came from Fourth Year, 34.6% (N=18) were from Second Year and 25% (N=13) from the Third Year.

The researcher only had the opportunity to Interview Students of Determination at the Dubai campus which predominantly caters only to the female population. This is because of the COVID pandemic. Had the researcher had the opportunity to conduct the interviews in Abu Dhabi,

both sexes would have been included in the sample. Before the interviews each of the students signed consent forms, permitting the researcher to have access to their information and with the awareness that their privacy would not be violated. Data obtained from the interviews was read to the interviewees, in a summarized form, to check with them their answers.

Table 2: Nature of Disability of Students (N=52)

Nature of Disability	Frequency	Percentage
ADHD (Attention Deficit Hyperactivity Disorder)	2	3.8
Physical Disability	6	11.5
Hearing Impairment	6	11.5
Visual Impairment	11	21.2
Specific Learning Disability	27	51.9
Total	52	100

The table above shows the nature of disability of the students who participated in the study. The large majority of the participants, i.e., 52. % (N=27) had a Specific learning disability, while the other impairments were in descending order: (N=11), 21.2% had a Visual Impairment, 11.5% (N=6) had a Physical Disability and 11.5% (N=6) Hearing Impairment, whilst the lowest percentages were of those with ADHD, i.e., 3.8% (N=2).

Although there may be students with other kinds of disabilities present in the university, however the researcher got a response from the students of the above categories only.

Table 3: Survey question: How did they find out about the services provided for the Students of Determination (N=52)

Sources	Frequency	Percentage

Accessibility Unit	16	30.7
Faculty	7	13.5
Friend	8	15.4
Other Sources	14	26.9
School Website	7	13.5
Total	52	100

Most of the students said that they got the information from the Accessibility Unit (SAS), 30.7% (N=16), Fourteen (14) students said they got information from other sources (26.9%), 15.4% of the respondents (N=8) acquired the information from their friends 13.5% (N=7) got it from the Faculty while a similar percentage and number were informed through the school website for both. The Accessibility Unity arranges an orientation session, and this is probably the reason why most of the students mentioned this source.

Table 4: If the provisions are not available, how do you overcome the concerned barrier (N=52)

Mode of overcoming Barriers	Frequency	Percentage
Approached both accessibility unit and Faculty	16	30.8
Approached the Accessibility Unit	15	28.8
Approached the Faculty	9	17.3
Manage on my own	12	23.1
Total	52	100

Those who approached the Accessibility unit were (28.8%) (N-15), those who managed by themselves were (23.1%) (N=12), those who approached both the Faculty and both Accessibility unit were 30.8%. While those who relied on the faculty were 17.3% (N=9). This shows that most of them are confident about approaching the Accessibility unit, as compared to approaching the faculty alone or to managing on their own.

Table 5: Names of Assistive Technology Used (N=52)

Names of Assistive Technology	Frequency	Percentage
Wheelchair, crutches, walkers, braces	6	11.5
Braille machine, screen reader, magnifier	11	21.2
Online books, I-pad, laptop, communication board, keyboards, reading aid	29	55.8
Hearing aid, sign language dictionary	6	11.5
Total	52	100

A majority of the respondents have Learning Disability and they mentioned online books, I-pad, laptop, communication board, keyboards and reading aid as the assistive technology that they are using (55.8%)(N=29). Students with visual impairment are using Braille machine, screen readers and magnifiers (21.2%)(N=11). Students who are physically impaired said that they use wheelchair, crutches, braces, walkers and assistive devices for their day-to-day activities at the university (11.5%) (N=6). Lastly, students who are hearing impaired are using hearing aids and sign language dictionaries. The university has a well-equipped Accessibility Unit (SAS) which

houses high-tech assistive technologies, and the students can borrow and use these as per their needs.

Faculty Demographics

Table 6: Demographics Faculty N=20

	Frequency	Percentage
Gender:		
Male	3	15
Female	17	85
Total	20	100
Nationality:		
British	10	50
Emirati	1	5
Indian	2	10
Russian	2	10
Turkish	2	10
American	3	15
Total	20	100

A majority of the Faculty respondents were female (N=17), 85% and 15% (N=3) were male. A total of 20 Faculty respondents participated in the study. Most of them were British nationals (50%), American (15%) Indian, Russian and Turkish (10%) each and an Emirati Faculty (5%).

Although the survey was distributed to both male and female faculty members, however the female members responded more than the male ones. The reason for this can only be speculated.

Table 7: Number of Students of Determination the faculty members are handling currently (N=20)

Number of Students of Determination	Frequency	Percentage
Below 3	13	65
4	5	25
5 and above	2	10

The Faculty was also asked about the number of Students of Determination they are currently handling or teaching. Most of the Faculty (65%, N=13) handles below 3 Students of Determination each, 25% has 4 students and 2 Faculty (10%) handle 5 and above Students of Determination. This question was asked to gauge the number of Students of Determination each faculty member needed to cater to, so as to see whether they are burdened adequately or they are over-burdened.

Table 8: How did the Faculty come to know about the services provided by University for the Students of Determination through (N=20)

	Frequency	Percentage
Accessibility unit/ Disability unit	20	100

All the Faculty respondents said that they came to know about the services provided by the University to Students of Determination through the disability /accessibility unit. The researcher was expecting that they may be informed by their heads of department, but it turned out to be that they only find out through the efforts of the Accessibility Unit.

Table 9: If the provisions are not available, how do the Faculty overcome the concerned barrier? N=20

	Frequency	Percentage
Approach both disability unit and other Faculty	4	20
Approach the Disability unit	8	40
Manage on my own	8	40
Total	20	100

The Faculty was also asked on how they overcome the concerned barrier if provisions were not available. Eight (8) of them said that they approach the Accessibility Unit. The same number said they managed on their own, and four (4) approached both Accessibility Unit and other Faculty members.

Specialists Demographics

Table 10: Specialists Demographics (N=10)

	Frequency	Percentage
Gender		
Female	9	90
Male	1	10

Total	10	100
Nationality		
Jordanian	2	20
Pakistani	2	20
Emirati	2	20
American	4	40
Total	10	100

Based on the above table, 90% of the specialists who responded in the survey are female (N=9) and there was only 1 male Specialist who participated. This survey was done in the female campus, however, even in the coed campus (Abu Dhabi) the Specialists were all female, which shows that there seems to be a majority of females in this department of the university, the reason for which might be the cultural context of UAE. Most were Americans (N=4) and the rest were Jordanian, Pakistani and Emirati. Their roles in the Accessibility unit are primarily giving academic accommodations like note taking, extended time for tests; academic advice; advocacy/liaison with instructors and creating and reviewing IEPs.

Table 11: How do Students of Determination come to know of services provided by the University (N=10)

	Frequency	Percent

Disability /Accessibility unit. Counsellor; University website; Other students; Brochures; miscellaneous sources; Majors day/Orientation;	10	100.0

All the specialists mentioned that Students of Determination came to know the services provided by the university through accessibility unit, Counselor, university website, brochures, orientation/Majors day, through other students and miscellaneous sources.

5.2.1 One Way ANOVA test:

The one-way analysis of variance (ANOVA) is used to find statistically substantial differences between the means of two or more independent groups. The researcher got more than two levels which may not show in *which* of the various pairs of means the difference is significant. The researcher did a post hoc test to find this out. The assumptions of the one-way ANOVA are as follows

- Dependent variables need be measured at the interval or ratio level (i.e.,they are continuous).
- Independent variables must comprise of two or more categorical, independent groups. Usually, a one-way ANOVA is used when three or more categorical, independent groups, nevertheless it can be used for just two groups.

In the one-way ANOVA we used the following dependent variables and independent variables.

Dependent Variables:

Rate of Provisions in the University are as follows

- Opinion about University's approach to Students of Determination in Application, Admission and Interview stage
- Opinion on the services provided by the Accessibility/Disability unit at your university.
- Opinion on the Academic Services Provided by the University.
- Opinion on financial support provided by the University
- Opinion on relationship with peers and faculty in the University
- Opinion on the amenities in the University for students with disability for Campus Approaches and pathways to building
- Opinion on the amenities in the University for students with disability for Hostel Room

Rate of Scores:

- Strongly Agree-5
- Agree-4
- Nuetral-3
- Disagree-2
- Strongly
- Disagree-1
- Not Applicable-0

Independent variable groups:

Age:

1	18-19
2	20-21
3	22-23

Nature of Disability:

1 ADHD

2 Hearing Impairment

3 Physical Disability

4 Specific Learning Disability

5 Visual Impairment

I know of services provided by the University to Students of Determination:

1 Accessibility Unit

2 Faculty

3 Friend

4 Other Sources

5 School Website

If the provisions are not available, how do you overcome the concerned barrier?:

1 Approached both accessibility unit and staff

2 Approached the Accessibility Unit

3 Approached the Faculty

4 Both accessibility unit and staff

5 Manage on my own

Write the names of the assistive technology you use:

0 None

1 Ipad

2 Laptops

3 Listening device; hearing aids

4 Reading and Writing App

5 Wheelchair

Table 12 ANOVA test

Part-1: One way ANOVA test for Rate of provisions in the University with age as a factor

In this part we have done an ANOVA test for Rate of provisions in the University with age as a factor. The results are presented below.

Table 12.1 **ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
University's approach to Students of Determination in Application, Admission and Interview stage	Between Groups	2.829	2	1.415	.340	.713
	Within Groups	203.844	49	4.160		
	Total	206.673	51			
Services provided by the Accessibility/Disability unit at your university.	Between Groups	2.229	2	1.114	.356	.703
	Within Groups	153.540	49	3.133		
	Total	155.769	51			
Academic Services Provided by the University.	Between Groups	183.641	2	91.821	2.066	.138
	Within Groups	2177.590	49	44.441		
	Total	2361.231	51			
Financial support provided by the University	Between Groups	.253	2	.126	.086	.918
	Within Groups	71.978	49	1.469		
	Total	72.231	51			
Relationship with peers and faculty in the University	Between Groups	44.369	2	22.184	.880	.421
	Within Groups	1235.939	49	25.223		
	Total	1280.308	51			
Amenities in the University for Campus Approaches and pathways to building	Between Groups	189.394	2	94.697	2.947	.062
	Within Groups	1574.375	49	32.130		

	Total	1763.769	51			
Amenities in the University for students with disability for Hostel Room	Between Groups	19.648	2	9.824	4.103	**.023***
	Within Groups	117.333	49	2.395		
	Total	136.981	51			

The ANOVA result is easy to read (Refer Table 12.1). You're looking for the value of F that appears in the Between Groups row (see above) and whether this reaches significance (next column along).

Based on the above result, we have a significant result for 'Rate your opinion' on the amenities in the University for students with disability for Hostel Room. The value of F is 4.103, which reaches significance with a *p*-value of .023 (see the Sig. column marked star in the Table 12.1 (which is less than the .05 alpha level). This means that, there is a statistically significant difference between the means of the different levels of the age groups based on the dependent variable 'Rate your opinion' on the amenities in the University for students with disability for Hostel Room. There is insignificant result for other dependent variables (Provisions in the University).

Part-2: One way ANOVA test for Rate of provisions in the University with Nature of Disability as a factor

In this part we have tested ANOVA for Rate of provisions in the University with Nature of Disability as a factor. The results are presented below:

Table 12.2 ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
University's approach to Students of Determination in Application, Admission and Interview stage	Between Groups	18.446	4	4.611	1.151	.344
	Within Groups	188.227	47	4.005		
	Total	206.673	51			
Services provided by the Accessibility/Disability unit at your university.	Between Groups	21.069	4	5.267	1.838	.137
	Within Groups	134.700	47	2.866		
	Total	155.769	51			
Academic Services Provided by the University.	Between Groups	150.631	4	37.658	.801	.531
	Within Groups	2210.599	47	47.034		
	Total	2361.231	51			
Financial support provided by the University	Between Groups	7.530	4	1.883	1.368	.260
	Within Groups	64.700	47	1.377		
	Total	72.231	51			
Relationship with peers and faculty in the University	Between Groups	145.845	4	36.461	1.511	.214
	Within Groups	1134.463	47	24.138		

	Total	1280.308	51			
Amenities in the University for Campus Approaches and pathways to building	Between Groups	229.291	4	57.323	1.756	.154
	Within Groups	1534.478	47	32.648		
	Total	1763.769	51			
Amenities in the University for students with disability for Hostel Room	Between Groups	15.632	4	3.908	1.514	.213
	Within Groups	121.348	47	2.582		
	Total	136.981	51			

The ANOVA result is easy to read (Refer Table 12.2). You're looking for the value of F that appears in the Between Groups row (see above) and whether this reaches significance (next column along). In the significant column, all the p values had more than 0.05. We infer that, there is no significant difference between Rate of provisions in the University and Nature of Disability.

Part-3: One way ANOVA test for Rate of provisions in the University with services provided by the University to Students of Determination as a factor

In this part we have tested ANOVA for Rate of provisions in the University with services provided by the University to Students of Determination as a factor. The results are presented below

Table 12.3 **ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
University's approach to Students of Determination in Application, Admission and Interview stage	Between Groups	32.798	4	8.200	2.216	.082
	Within Groups	173.875	47	3.699		
	Total	206.673	51			
Services provided by the Accessibility/Disability unit at your university.	Between Groups	24.260	4	6.065	2.168	.087
	Within Groups	131.509	47	2.798		
	Total	155.769	51			
Academic Services Provided by the University.	Between Groups	243.159	4	60.790	1.349	.266
	Within Groups	2118.071	47	45.065		
	Total	2361.231	51			
Financial support provided by the University	Between Groups	5.874	4	1.468	1.040	.397
	Within Groups	66.357	47	1.412		
	Total	72.231	51			
Relationship with peers and faculty in the University	Between Groups	81.656	4	20.414	.800	.531
	Within Groups	1198.652	47	25.503		
	Total	1280.308	51			
Amenities in the University for Campus Approaches and pathways to building	Between Groups	106.573	4	26.643	.756	.559
	Within Groups	1657.196	47	35.259		
	Total	1763.769	51			

Amenities in the University for students with disability for Hostel Room	Between Groups	2.740	4	.685	.240	.914
	Within Groups	134.241	47	2.856		
	Total	136.981	51			

The ANOVA result is easy to read (Refer Table 12.3). You're looking for the value of F that appears in the Between Groups row (see above) and whether this reaches significance (next column along). In the significant column, all the p values had more than 0.05. We infer that, there is no significant difference between Rate of provisions in the University and services provided by the University to Students of Determination.

Part-4: One way ANOVA for Rate of provisions in the University with provisions are not available, how do you overcome the concerned barrier as a factor

In this part we have applied ANOVA test for Rate of provisions in the University with provisions not available, how do you overcome the concerned barrier as a factor. The results are as follows.

Table 12.4 ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
University's approach to Students of Determination in Application, Admission and Interview stage	Between Groups	10.337	4	2.584	.619	.651
	Within Groups	196.337	47	4.177		
	Total	206.673	51			
Services provided by the Accessibility/Disability unit at your university.	Between Groups	10.899	4	2.725	.884	.481
	Within Groups	144.870	47	3.082		
	Total	155.769	51			
Academic Services Provided by the University.	Between Groups	21.044	4	5.261	.106	.980
	Within Groups	2340.187	47	49.791		
	Total	2361.231	51			
Financial support provided by the University	Between Groups	7.358	4	1.839	1.333	.272
	Within Groups	64.873	47	1.380		
	Total	72.231	51			
Relationship with peers and faculty in the University	Between Groups	77.279	4	19.320	.755	.560
	Within Groups	1203.029	47	25.596		
	Total	1280.308	51			
Amenities in the University for Campus Approaches and pathways to building	Between Groups	158.713	4	39.678	1.162	.340
	Within Groups	1605.056	47	34.150		
	Total	1763.769	51			
	Between Groups	7.302	4	1.826	.662	.622
	Within Groups	129.679	47	2.759		

Amenities in the University for students with disability for Hostel Room	Total	136.981	51			

The ANOVA result is easy to read (Refer Table 12.4). You're looking for the value of F that appears in the Between Groups row (see above) and whether this reaches significance (next column along). In the significant column, all the p values had more than 0.05. We infer that, there is no significant difference between Rate of provisions in the University and provisions are not available, how do you overcome the concerned barrier.

Part-5: One way ANOVA for Rate of provisions in the University with assistive technology as a factor

In this part we have applied ANOVA test for Rate of provisions in the University with assistive technology as a factor. The results are presented in Table 12.5.

Table 12.5 ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
University's approach to Students of Determination in Application, Admission and Interview stage	Between Groups	1.511	5	.302	.068	.997
	Within Groups	205.162	46	4.460		
	Total	206.673	51			
Services provided by the Accessibility/Disability unit at your university.	Between Groups	13.931	5	2.786	.904	.487
	Within Groups	141.838	46	3.083		
	Total	155.769	51			
Academic Services Provided by the University.	Between Groups	111.622	5	22.324	.456	.806
	Within Groups	2249.609	46	48.905		
	Total	2361.231	51			
Financial support provided by the University	Between Groups	3.582	5	.716	.480	.789
	Within Groups	68.648	46	1.492		
	Total	72.231	51			
Relationship with peers and faculty in the University	Between Groups	50.068	5	10.014	.374	.864
	Within Groups	1230.239	46	26.744		
	Total	1280.308	51			
Amenities in the University for Campus Approaches and pathways to building	Between Groups	298.450	5	59.690	1.874	.117
	Within Groups	1465.320	46	31.855		
	Total	1763.769	51			
Amenities in the University for students with disability for Hostel Room	Between Groups	18.441	5	3.688	1.431	.231
	Within Groups	118.539	46	2.577		
	Total	136.981	51			

The ANOVA result is easy to read (Refer Table 12.5). You're looking for the value of F that appears in the Between Groups row (see above) and whether this reaches significance (next column along). In the significant column, all the p values had more than 0.05. We infer that, there is no significant difference between Rate of provisions in the University and assistive technology.

5.2.2 Independent samples t – test for Rating of provisions in the university for Students of Determination on disclosure of their disability during the admission process as a group:

The Table 13 provides useful descriptive statistics for the two groups that the researcher compared, including the mean and standard deviation. The standard deviation, standard error or 95% confidence intervals can make it easier for others to understand the results. The research compared the relationship between the satisfaction of the Students of Determination on the provisions of the university and disclosing their disability during admission.

Table 13 Group Statistics

Group Statistics					
	Disclosure of disability during the Admission process.	N	Mean	Std. Deviation	Std. Error Mean
University's approach to Students of Determination in Application, Admission and Interview stage	Did not disclose	14	23.07	1.492	.399
	Disclosed	38	21.21	1.961	.318
Services provided/not provided by the Accessibility/Disability unit at your university.	Not provided	14	21.86	1.916	.512
	Provided	38	22.53	1.672	.271
Academic Services provided by the University.	Not provided	14	82.21	4.543	1.214
	Provided	38	80.24	7.449	1.208
Financial support provided/not provided by the University	Not provided	14	5.14	1.460	.390
	Provided	38	5.32	1.093	.177
	Negative	14	41.86	5.333	1.425

Relationship with peers and Faculty in the University	Positive	38	42.89	4.931	.800
Amenities provided in the University for Campus Approaches and pathways to building	No	14	72.21	6.818	1.822
	Yes	38	72.82	5.589	.907

From Table 13, the mean values in the Group Statistics table, we can see that on average score of those not disclosed disability during the admission process about University's approach to Students of Determination during Application, Admission and Interview stage is higher than of those disclosed their disability during the admission process (23.07 score as against only 21.21 score)

Table 14 t-test for Equality of Means

		t-test for Equality of Means						
		T	df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Diff.	
							Lower	Upper
University's approach to Students of Determination in Application, Admission and Interview stage	Equal variances assumed	**3.216**	50	**.002**	1.861	.579	.699	3.023

Services provided by the Accessibility/Disability unit at your university.	Equal variances assumed	-1.231	50	.224	-.669	.544	-1.761	.423
Academic Services Provided by the University.	Equal variances assumed	.928	50	.358	1.977	2.130	-2.301	6.256
Financial support provided by the University	Equal variances assumed	-.461	50	.647	-.173	.375	-.926	.580
Relationship with peers and Faculty in the University	Equal variances assumed	-.659	50	.513	-1.038	1.575	-4.202	2.126
Amenities in the University for students with disability for Campus Approaches and pathways to building	Equal variances assumed	-.324	50	.747	-.602	1.855	-4.327	3.124

Table 14 is reporting a t value of 3.216 and a 2-tailed *p*-value of .002. This would be considered a significant result (p-value less than the standard alpha level is 0.05). Therefore, we

can be confident in rejecting the null hypothesis that holds that there is difference between the provisions in the University (Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage) and barriers (on disclosed or non-disclosure of disability during the admission process).

5.2.3 Kruskal-Wallis Tests for Provisions in the University:

This test is appropriate for use for the following circumstances:

- The researcher had more than three to compare.
- Each condition is accomplished by a diverse group of participants.
- The data does not meet the necessities for a parametric test (i.e. use it if the data are not normally distributed; if the variances for the different conditions are markedly different; or if the data are measurements on an ordinal scale).

If the data meet the requirements for a parametric test, it is better to use a one-way independent-measures Analysis of Variance (ANOVA) because it is more powerful than the Kruskal-Wallis test.

The following table gives the summary of scores of provisions in the University.

Table 15 Case Processing Summary

	Provisions in the University	Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Scores of provisions in the University	Provision 1	52	100.0%	0	0.0%	52	100.0%
	Provision 2	52	100.0%	0	0.0%	52	100.0%
	Provision 3	52	100.0%	0	0.0%	52	100.0%

	Provision 4	52	100.0%	0	0.0%	52	100.0%
	Provision 5	52	100.0%	0	0.0%	52	100.0%
	Provision 6A-Campus	52	100.0%	0	0.0%	52	100.0%
	Provision 6B-Hostel	52	100.0%	0	0.0%	52	100.0%

Note:

Provision 1	University's approach to Students of Determination in Application, Admission and Interview stage
Provision 2	Services provided by the Accessibility/Disability unit at your university.
Provision 3	Academic Services Provided by the University.
Provision 4	Financial support provided by the University
Provision 5	Relationship with peers and faculty in the University
Provision 6A-Campus	Amenities in the University for students with disability for Campus Approaches and pathways to building
Provision 6B-Hostel	Amenities in the University for students with disability for Hostel Room

The samples were taken randomly and independently of each other. The populations have different shapes since the boxplots are all different shape (Refer figure 5).

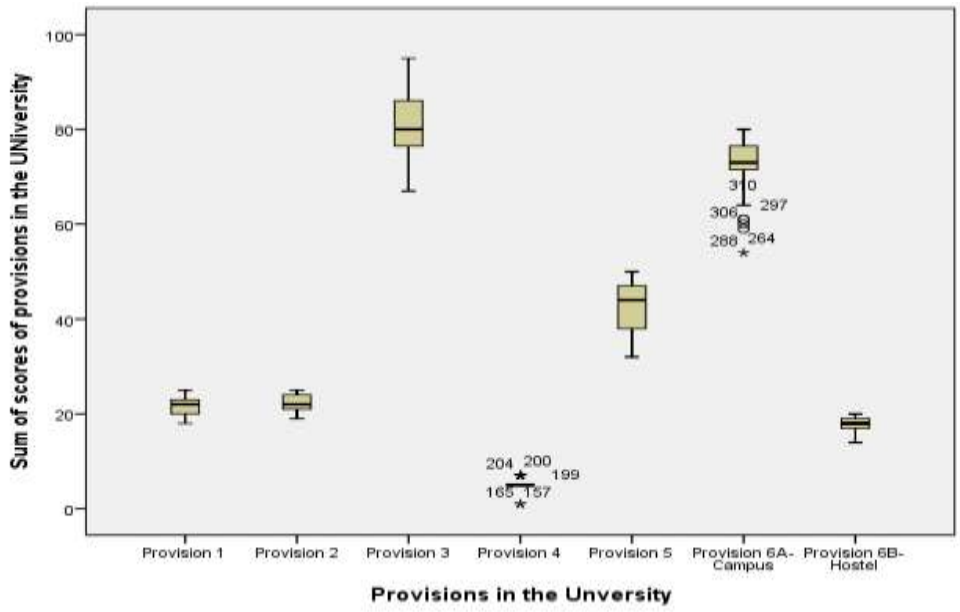

*Fig 5*Scores of provisions in the University

5.2.4 Hypotheses:

Null Hypothesis: M1 = M2 = M3 = M4 = M5 = M6 = M7

i.e., H_0: Median Scores of provision 1 = Median Scores of provision 2 = Median Scores of provision 3 = Median Scores of provision 4 = Median Scores of provision 5 = Median Scores of provision 6A = Median Scores of provision 6B

Alternative Hypothesis:

i.e., Ha: Median Scores of provision 1 ≠ Median Scores of provision 2 ≠ Median Scores of provision 3 ≠ Median Scores of provision 4 ≠ Median Scores of provision 5 ≠ Median Scores of provision 6A ≠ Median Scores of provision 6B.

Table 16 gives the descriptive statistics. It shows the 25th percentile (First quartile), 50th percentile (Median or 2nd quartile) and 75th percentile (3rd quartile) for both the grouping variable (condition) andthe dependent variable (rating). The descriptive statistics for the grouping variable is ignored, as they are meaningless.

Table 16 Descriptive Statistics

	N	Percentiles		
		25th	50th (Median)	75th
Scores of provisions in the University	364	19.00	24.00	69.00
Provisions in the University	364	2.00	4.00	6.00

The Table 17 tells you what the dependent variable was ("Scores of provisions in the University " in this case); what the names of the conditions were; "N", the number of participants in each provision; and the mean rank for each provision.

Table 17 Ranks

	Provisions in the University	N	Mean Rank
Scores of provisions in the University	Provision 1	52	147.96
	Provision 2	52	159.88
	Provision 3	52	329.03
	Provision 4	52	26.50
	Provision 5	52	234.50
	Provision 6A-Campus	52	295.97

	Total	312	

Table 18 displays the outcome of the Kruskal-Wallis test as a value of Chi-Square; the number of d.f. are associated with it; and the significance level (an exact p-value, as compared to the approximate value that is availableto do the test by hand and use a table to look up its probability value).

Table 18 Test Statistics[a,b]

	Scores of provisions in the University
Chi-Square	343.055
d.f	6
Asymp. Sig. (p-value)	.000

a. Kruskal Wallis Test

b. Grouping Variable: Provisions in the University

We conclude from the above table, p-value = 0.000 ≤ 0.05 (refer Table 18), the null hypothesis is rejected at 5% (0.05) level of significance. There is adequate evidence to conclude that there is a difference in the median test scores among the provisions in the University.

5.2.5 Mann-Whitney Test:

The Mann Whitney U test is a non-parametric test which is valuable to determine if the mean of two groups are dissimilar from each other. It requires that four conditions be met:

1. The dependent variable need be as least in the ordinal scaled.
2. The independent variable has simply two levels.
3. A between- subjects design is utilized.
4. The subjects are not matched throughout the conditions.

The Mann Whitney U test is frequently used when the assumptions of the t-test have been violated. Thus, it is beneficial if:

- The assumption of homogeneity of variance has been violated in a t-test.
- The dependent variable is ordinal scaled as an alternative of interval or ratio.
- The assumption of normality has been violated in a t-test.

In the student survey, rate your opinion about University's approach in Likert scores is the dependent variable, and disclosure of disability during the admission process is the grouping variable. We want to know whether I disclosure of disability during the admission process (independent variable) has any effect on the ability to rate the opinion about University's approach (dependent variable).

Table 19.1 shows, there is what looks like a sizeable difference between the mean ranks of 'I didn't disclose my disability during the admission process' and 'I disclosed my disability during the admission process groups'. The Mann-Whitney test statistic will tell us whether this difference is big enough to reach significance.

Table 19.1 **Ranks**

	I disclosed my disability during the admission process.	N	Mean Rank	Sum of Ranks
University's approach to Students of Determination	No	14	36.86	516.00
	Yes	38	22.68	862.00

in Application, Admission and Interview stage	Total	52		
Services provided by the Accessibility/Disability unit at your university.	No	14	22.79	319.00
	Yes	38	27.87	1059.00
	Total	52		
Academic Services Provided by the University.	No	14	29.46	412.50
	Yes	38	25.41	965.50
	Total	52		
Financial support provided by the University	No	14	25.89	362.50
	Yes	38	26.72	1015.50
	Total	52		
Relationship with peers and faculty in the University	No	14	24.21	339.00
	Yes	38	27.34	1039.00
	Total	52		
Amenities in the University for Campus Approaches and pathways to building	No	14	26.32	368.50
	Yes	38	26.57	1009.50
	Total	52		
Amenities in the University for students with disability for Hostel Room	No	14	30.64	429.00
	Yes	38	24.97	949.00
	Total	52		

Table 19.2 Test **Statistics**

Test Statistics							
	Provision1	Provision 2	Provision3	Provision 4	Provision 5	Provision 6A	Provision 6B
Mann-Whitney U	121.000	214.000	224.500	257.500	234.000	263.500	208.000
Wilcoxon W	862.000	319.000	965.500	362.500	339.000	368.500	949.000
Z	-3.039	-1.090	-.858	-.233	-.664	-.052	-1.222
Asymp. Sig. (2-tailed)	**.002***	.276	.391	.816	.507	.959	.222

Exact Sig. (2-tailed)	**.002**	.281	.398	.989	.514	.963	.227
Exact Sig. (1-tailed)	**.001**	.140	.199	.513	.257	.482	.114
Point Probability	.000	.002	.003	.119	.003	.004	.003

a. Grouping Variable: Disclosure disability during the Admission process.

Note:

Provision 1	University's approach to Students of Determination in Application, Admission and Interview stage
Provision 2	Services provided by the Accessibility/Disability unit at your university.
Provision 3	Academic Services provided by the University.
Provision 4	Financial support provided by the University
Provision 5	Relationship with peers and Faculty in the University
Provision 6A-Campus	Amenities in the University for Campus Approaches and pathways to building
Provision 6B-Hostel	

Mann-Whitney test output can contain different 2-sided p-values. Providentially, they lead to the same conclusion when we follow the convention of rejecting the null hypothesis if $p < 0.05$: not disclosed disability during the admission process rated the "opinion about University's approach to Students of Determination in Application, Admission and Interview stage" more favorably than disclosure of disability during the admission process ($p = 0.002$, *marked in Table 19.2). The others did not show a barrier difference ($p > 0.10$).

5.3 Faculty Quantitative Analysis:

5.3.1 Chi-Square Goodness-of-Fit Test for Faculty survey:

One may use the chi-square goodness-of-fit test to find out whether the distribution of data or scores for one nominal (categorical) variable matches expectations for that distribution.

Assumptions of the chi-square goodness-of-fit test:

- **One categorical variable** (**dichotomous**, **nominal** or **ordinal**)
- One must have **independence of observations**, which suggests that there is no relationship between any of the Respondents.
- The groups of the categorical variable should be **mutually exclusive (Scoring from strongly agree to strongly disagree)**.
- There should be **at least 5 expected frequencies in each group of categorical variable**.

In this section have applied Chi-Square test for the following questions and the results are presented in the table format.

Section.1: Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage. Scores are received using likert scales SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

Table 20 Test Statistics

	There are restrictions for students with disabilities when applying for admission at the university	University is easily accessible for seeking admission and completing the process	There are tailor made versions of the admissions test to suit the needs of Students of Determination	Personal interest of the student with determination is a big influence in choosing their course	The University offers various courses which are not offered in other Universities for Students of Determination	The University conducts special pre-placement training for Students of Determination
Chi-Square	26.800[a]	10.800[a]	7.900[b]	7.900[b]	19.600[b]	9.100[b]
Df	3	3	2	2	2	2
Asymp. Sig.	.000	.013	.019	.019	.000	.011
a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 5.0.						
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 6.7.						

We observed from the Table 20, there is a significant relationship in the rating of the respondents and their score values about restrictions for students with disabilities when applying for admission (p value: .000 < 0.05), university is easily accessible (p value: .013 < 0.05), provision of tailor-made versions of test on admission (p value: .019 < 0.05), personal interest as influence in choosing course (p value: .019 < 0.05), university offers various courses for Students of Determination that are not offered in other universities (p value: .000 < 0.05) and The University conducts special pre-placement training for Students of Determination (p value: 0.011 < 0.05).

Section.2: Rate your opinion on the Provisions provided by the Accessibility/disability Unit at your University. Scores are received using Likert scales SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

Table 21. Test Statistics

	University has a dedicated unit/department for meeting the objectives for Students of Determination	The university has sufficient number of staff (disability advisor/coordinators and other support staff) in the unit to meet the demands of the Students of Determination	The staff (disability advisor/coordinators) in the accessibility unit are trained to support Students of Determination	The disability advisor/coordinator makes sure (with the students' permission) accommodations and recommends the right and effective academic adjustments, assistive technology training, transportation, library assistance and other services	The disability advisor/coordinators hosts seminars and informal meetings, or speak with faculty/instructors about accommodating students' disabilities in classrooms	The disability advisor/ coordinators act as a resource to coordinate and facilitate improvement of physical access and assist in the planning and execution of accommodations
Chi-Square	16.200[a]	13.200[b]	13.300[c]	24.100[c]	18.000[b]	7.600[c]
Df	1	3	2	2	3	2
Asymp. Sig.	**.000**	**.004**	**.001**	**.000**	**.000**	**.022**

The present resources adequately addresses the needs of the Students of Determination	Staff in the University are sensitive and responsive when attending to needs of the students	The University has a clear and transparent Inclusion Policy for addressing the needs of Students of Determination	The Department/Unit has a Handbook on the policies and procedures for reference which is available to all the stakeholders	The University arranges for on-campus and/or off-campus training on life skills for Students of Determination.	The University offers counseling services for Students of Determination	The performance of this University in providing provisions is satisfactory
22.000[b]	9.100[c]	5.200[c]	.700[c]	1.800[a]	.800[a]	3.700[c]
3	2	2	2	1	1	2

.000	**.011**	.074	.705	.180	.371	.157	

We observed from the Table 21, most of the Chi-square values are significant (P < 0.05, Highlighted in the table). Therefore, it can be concluded that there are significant differences in the rate of opinion on the Provisions provided by the University Accessibility/disability Unit and the results show that University decided to provide Accessibility/disability on this issue.

Section.3: Rate your opinion on the Academic Services provided by the University. Scores are received using Likert scales SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

Table 22. Test Statistics

	The faculty is knowledgeable of disabilities, accommodation, technology and other related issues to meet the requirements of Students of Determination	Faculty in the University are sensitive and responsive when attending to needs of the Students of Determination	The faculty is well aware of special requirements to be given to the Students of Determination	The contents of the course followed by the Students of Determination is adjustable/modified when required	Lectures PPTs are given for reference after the session	The Students of Determination are able to follow classroom teaching without any difficulty
Chi-Square	17.200[a]	10.000[a]	22.000[a]	6.800[a]	1.300[b]	1.600[a]
df	3	3	3	3	2	3
Asymp. Sig.	**.001**	**.019**	**.000**	.079	.522	.659
Students can choose/substitute modules when they cannot study current module due their disability	Students of Determination are provided with their IEP (Individualized Educational Plan)	Students of Determination are allowed to set a flexible time frame for his or her studies	Work load is reduced for Students of Determination if required	University provides assistive technology whenever needed for Students of Determination	Staff are trained to support the students using assistive technology	Students of Determination have the possibility of personal assistant (Learning Support Assistant) to facilitate their learning
2.800[a]	.400[b]	6.400[b]	4.000[c]	9.800[d]	3.200[d]	9.700[b]
3	2	2	4	1	1	2
.423	.819	**.041**	.406	**.002**	.074	**.008**
The university provides extra academic support classes for the Students of Determination	I find that Students of Determination do not use all of the accommodation for which they are eligible for	Some students take undue advantage of their accommodation	Effectiveness of accommodations is monitored regularly	Accessibility of exam papers are moderated according to the student's needs	Additional time is given when needed (assignments /exams)	Written exams are replaced with an oral exam or vice versa when required
7.900b	1.200a	5.200a	3.100b	10.900b	16.200d	7.600a
2	3	3	2	2	1	3
.019	.753	.158	.212	**.004**	**.000**	.055

Scribes are provided to write the exams if needed	Alternative evaluation is available, if needed	Career services are provided in finding employment	Counseling services are provided for emotional support	The Disability Unit supports students for internship placements
4.300[b]	3.600[a]	16.300[b]	7.600[b]	2.500[b]
2	3	2	2	2
.116	.308	**.000**	**.022**	.287

We observed from the output presented in the Table 22, most of the Chi-square values are significant ($P < 0.05$, Highlighted in the table). Therefore, it can be concluded that there are significant differences in Academic Services provided by the University and the results show that University decided to provide Academic Services on this issue.

Following are the conclusions drawn from the above data analysis:

- Faculty in the University are not sensitive and responsive when attending to needs of the Students of Determination
- Faculty do not have the expertise and the knowledge about the special accommodations to be made for the Students of Determination and do not will to know (p value: .000).
- The format of the courses followed by the Students of Determination is adjustable/modified when required. Lectures PPTs are given for reference after the session.
- The Students of Determination are able to follow classroom teaching without any difficulty (those with physical disabilities)
- Students of Determination are allowed to set a flexible time schedule for their Remedial classes in the Accessibility Unit.
- University provides assistive technology for Students of Determination.
- Students can choose/substitute modules when they cannot study a current module due their disability.
- Students with Specific Learning Difficulties are provided with IEP's (Individualized Educational Plan) but not students with other categories of disabilities

- Work load is reduced for SWD's if required.

Section.4: Rate your opinion on financial support provided by the University. Scores are received using Likert scales SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

Table 23. Test Statistics

	The faculty gets financial support to attend training/workshop to acquire/update knowledge to support Students of Determination
Chi-Square	18.000[a]
df	3
Asymp. Sig.	**.000**

Based on the output presented in the Table 23, the Chi-square value is significant ($P < 0.05$, Highlighted in the table). Therefore, it can be concluded that there are significant differences in the Rate your opinion on financial support provided by the University and the results show that University decided to provide financial support on this issue.

Section.5: Rate your opinion on relationship with students and rest of the faculty in the University. Scores are received using Likert scales SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

Table 24. Test Statistics

	Faculty collaborations with students, faculty, staff, and the campus community for the full inclusion of People with Determination	The faculty get adequate support from the faculty and other department to ensure the removal of existing barrier for full inclusion	Faculty encourages and motivates faculty guidance in showcasing the balance between accommodating Students of Determination and preserving academic standards	Faculty provide a welcoming and encouraging environment for Students of Determination for equal access and full participation
Chi-Square	4.900[a]	19.900[a]	10.900[a]	3.100[a]
df	2	2	2	2
Asymp. Sig.	.086	**.000**	**.004**	.212
Communication is limited between the faculty and students because of language barrier	You are able to obtain assistance from other students without disabilities to help out Students of Determination when required	Faculty's effort are valued by the Disability advisor/ coordinator to ensure that Students of Determination have equal and fair access to University curriculum	It is imperative to instill awareness on issues faced by Students of Determination among staff and also among students without disabilities in the university	On campus activities are planned to provide adequate opportunities to student with determination to mingle with students without disabilities to develop social skills
2.800a	6.100a	3.200b	5.000b	5.200a
2	2	1	1	2
.247	**.047**	.074	**.025**	.074

You can see from the output that most of the Chi-square values are significant ($P < 0.05$, Highlighted in the Table 24). Therefore, it can be concluded that there are significant differences in the Rate your opinion on relationship with students and rest of the faculty in the University and the results show that University decided to make relationship with students and rest of the faculty on this issue.

Following are the conclusions drawn from the above data analysis:

- The students do not get adequate support from the Faculty and other units to ensure the removal of existing barriers for full inclusion.
- Faculty collaborates with students, with other Faculty members and the Accessibility staff and the campus community.
- Faculty provide a welcoming and encouraging environment for Students of Determination with mild disabilities

- Communication and interaction is limited between the Faculty and students because of language barriers.
- Students of Determination are not able to obtain assistance from their peers when required.
- Students of Determination claim that they value the effort of Faculty members to grant them equal and fair access to the University curriculum. Perhaps this is just a means to appease Faculty and for the students to ensure they retain their placements.
- There is awareness on issues faced by Students of Determination with staff and also with students without disabilities in the university.
- On campus activities are planned to provide adequate opportunities for Students of Determination to mingle with students without disabilities to develop social skills
- Some buildings have pathways that are inaccessible for some students with disabilities.

Section.6A: Rate your opinion on the Infrastructure access on campus for students with determination in the campus**.** Scores are received using likert scales SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

Table 25. Test Statistics

	Approaches and pathways to building	Entrance to the building	Corridors	Office counters	Classroom	Laboratories
Chi-Square	13.300[a]	10.900[a]	.200[b]	9.100[a]	26.800[c]	22.000[c]
df	2	2	1	2	3	3
Asymp. Sig.	**.001**	**.004**	.655	**.011**	**.000**	**.000**
Seating arrangements	Library facilities	Prayer room	Canteen	Water Dispensers easily accessible	Toilet	Parking
24.100a	16.300a	11.200c	9.100a	14.800c	14.800c	7.900a
2	2	3	2	3	3	2
.000	**.000**	**.011**	**.011**	**.002**	**.002**	**.019**

Auditorium	Recreational areas	Clinics	Transportation to and from University	Recreational facilities
16.500[d]	16.500[d]	26.800[c]	14.800[c]	5.200[c]
4	4	3	3	3
.002	**.002**	**.000**	**.002**	.158

You can see from Table 25, most of the Chi-square values are significant (P < 0.05, Highlighted in the Table 25). Therefore, it can be concluded that there are significant differences in the rate your opinion on the Infrastructure access on campus for students with determination in the campus and the results show that University decided to provide infrastructure access on campus for students on this issue.

Following are the conclusions drawn from the above data analysis:

The students reported that the access to the Entrance of the building is difficult, Office counters are not adequate, Classrooms are not spacious enough, Laboratories are not good; also seating arrangements, library facilities, prayer room, canteen, toilets, parking, auditorium, recreational areas, and clinics are not satisfactory. They also report that transportation to and from university is not available, room (p value: .000) and furniture (p value: .001) are not modified regularly, and the dining hall is adequate.

Section.6B: Rate your opinion on the Infrastructure access on campus for students with determination in the hostel**.** Scores are received using Likert scales SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

Table 26 Test Statistics

	Room	Furniture	Dining Hall	Toilets	Recreation
Chi-Square	19.900[a]	17.200[b]	1.200[b]	1.200[b]	4.800[b]
df	2	3	3	3	3
Asymp. Sig.	**.000**	**.001**	.753	.753	.187

We observed from the output presented in the Table 26, most of the Chi-square values are significant ($P < 0.05$, Highlighted in the Table 25). Therefore, it can be concluded that there are significant differences in the 'rate your opinion' on the Infrastructure access on campus for students with determination in the hostel and the results show that University decided to provide infrastructure access on campus for students with determination in the hostel on this issue.

5.3.2 Kruskal–Wallis Test:

The Kruskal-Wallis test is a method for comparing more than two independent groups, within a categorical variable and assessing whether there is a statistically significant difference between them in relation to a continuous, interval-level dependent variable. The Kruskal–Wallis test is a non-parametric statistical test that evaluates whether the mean rank scores of a categorical variable differs between more than two groups, testing the null hypothesis of no difference between the mean ranks.

In this study, it was suitable to use a one-way MANOVA to understand the differences in the score of provisions in the University and Respondents. The researcher had considered 7 dependent variables which are scores regarding provisions regarding the university (scores of sections 1-7, named P1,P2,P3,P4,P5, P6A and P6B) While the independent variable is "Respondents", which has three independent groups: "Student", "Faculty" and "Specialist").

The appropriate test here is the Kruskal-Wallis test. With three separate groups of respondents, each of which gave a single score on a rating scale. Ratings are examples of an ordinal scale of measurement, and so the data are not suitable for a parametric test. The Kruskal-Wallis test informed the researcher the differences between the groups are so large that they are unlikely to have occurred by chance. Below is the analyses of Kruskal-Wallis test:

Table 33 shows the result of the Kruskal-Wallis test as a value of Chi-Square; the number of d.f. associated with it and the significant level (an exact p-value, as opposed to the approximate value that we have to use if we do the test by hand and use a table to look up its probability value).

5.3.3 Hypotheses:

Null Hypothesis:

H_0: Student median test scores = Faculty median test scores = Specialist median test scores

Alternative Hypothesis:

Ha: Student median test scores ≠ Faculty median test scores ≠ Specialist median test scores

Table 33

Test Statistics[a,b]

	P1	P2	P3	P4	P5	P6A	P6B
Chi-Square	37.900	57.568	46.305	60.313	34.928	16.312	23.061
df	2	2	2	2	2	2	2
Asymp. Sig.	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**	**.000**

a. Kruskal Wallis Test
b. Grouping Variable: Respondents

Note:

P1	Opinion about University's approach to Students of Determination in Application, Admission and Interview stage
P2	Opinion on the services provided by the Accessibility/Disability unit at your university.
P3	Opinion on the Academic Services Provided by the University.
P4	Opinion on financial support provided by the University
P5	Opinion on relationship with peers and Faculty in the University
P6A	Opinion on the amenities in the University for students with disability for Campus Approaches and pathways to building
P6B	Opinion on the amenities in the University for students with disability for Hostel Room

*** All relevant questions attached in the appendix**

Based on the above results, p-value = 0.000 ≤ 0.05 (value shaded in Table 33) for all provisions based the respondents, the null hypothesis is rejected at 5% (0.05) level of significance.

There exists sufficient evidence to conclude that there is a difference in the median test scores (refer mean test scores in Table 23). Hence among the provisions of University differ from the respondents based on the rating score.

5.4 Findings from the Quantitative analysis:

Findings based on the Student Survey:

Section – I: Frequency analysis and Diagrammatic representation

Frequency tables and the corresponding Bar charts determined the categorical variable (ordinal) for faculty survey. From these analyses the researcher identified the highest respondent through the demographic variables and response variables.

Section – II: Parametric Test

1. **Independent samples t - test**

   The University's approach to Students of Determination in Application, Admission and Interview stage

   In this test, t value of 3.216 and a 2-tailed *p*-value of .002. This would almost always be considered a significant result (p-value less than the standard alpha level is 0.05). Therefore the researcher was confident in rejecting the null hypothesis regarding the accessibility of provisions at the University.

This was in reference to the query: Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage and the response: I disclosed my disability during the Admission process.

2. **One Way ANOVA**

The researcher rated the opinions of the participants regarding factors influencing provisions at the University. The conclusions are as follows.

Part-1: One way ANOVA for Rate of Provisions at the University with age as a factor:

There is a significant difference between the means of the different levels of the age variable, based on the dependent variable. A Tukey post hoc test indicated that the provisions barrier for the 18-19 age group is significantly statistically more than the 22-23 age group (p = .034). There was no statistically significant difference between the other groups.

The query was: Rate your opinion on the amenities in the University for students with disability. The responses according to age were considered.

Part-2: One way ANOVA for the rate of provisions in the University with Nature of Disability as a factor

There is statistically insignificant difference between the means of the different Nature of Disabilitiesvariable (factor) based on the dependent variable.

The query was: Rate your opinion on the amenities in the University for Students with Disability and the response measured was according to differences in nature of disabilities.

Part-3: One way ANOVA for rate of service provisions in the University for Students of Determination

There is statistically insignificant difference between the means of the different services provided by the University to Students of Determination.

The query was: Rate your opinion on the amenities in the University for students with disability for different services.

Part-4: One way ANOVA for rate of provisions in the University ~~when~~ these are not available, to overcome the concerned barrier

There is statistically insignificant difference between the means if the different provisions are not available, in the method to overcome the concerned barrier variable (factor) based on the dependent variable

The query was: Rate your opinion on the amenities in the University for Students with Disability for how to overcome the barrier if the provisions are not available.

Part-5: One way ANOVA for rate of provisions in the University with assistive technology as a factor

There is statistically insignificant difference between the means of the different assistive technologies as a variable factor, based on the dependent variable.

The query was: Rate your opinion on the amenities in the University for students with disability with respect to assistive technologies.

Section – III: Non-Parametric Test:

1. **Friedman Test**

The Friedman test, which evaluated differences in medians among the provisions in the university, is significant $\chi 2$ (6, N = 52) = 302.420, p < .000, (Refer Table 6) i.e., all of the medians are not equal (Refer Table 3) indicating fairly strong differences among the provisions in the university.

2. **Wilcoxon Signed Ranks Test**

The pairs 2 to 21 significantly differ from the medians, p < .01, but pair 1 did not differ significantly from the median concern p =0.152.

3. **Kruskal-Wallis Tests**

Since *p*-value = 0.000 ≤ 0.05, the researcher rejected the null hypothesis at 5% (0.05) level of significance as there exists enough evidence to conclude that there is a difference in the median test scores among the provisions in the University.

4. **Mann-Whitney Test**

Mann-Whitney test output may include different 2-sided p-values. Fortunately, they all lead to the same conclusion by following the convention of rejecting the null hypothesis if p < 0.05:

I didn't disclose my disability during the admission process rated the "opinion about University's approach to Students of Determination in Application, Admission and Interview stage " more favorably than I disclosed my disability during the admission process (p = 0.002). The others didn't show a barrier difference (p > 0.10).

Findings based on the Faculty Survey:

Section – IV: Frequency analysis and Diagrammatic representation

Frequency tables and the corresponding Bar charts have been determined for the categorical variable (ordinal) for faculty survey. From these analyses was determined and highlighted the highest respondent through the demographic variables and response variables.

Section – V: Non-Parametric Test

1. **Chi-Square Goodness-of-Fit Test**

We have identified more significant factors ($p < 0.05$) using Chi-Square test. It means that there are differences in the University provisions based on the score values. The following are the insignificant factors are as follows.

1) The University has a clear and transparent Inclusion Policy for addressing the needs of Students of Determination
2) Department/Unit has a Handbook on the policies and procedures for reference which is available to all the stakeholders
3) University arranges for on-campus and/or off-campus training in life skills for Students of Determination
4) The University offers counseling services for Students of Determination
5) The performance of this University in providing provisions is satisfactory
6) The contents of the course followed by the Students of Determination is adjustable/modified when required
7) Lectures PPTs are given for reference after the session
8) The Students of Determination are able to follow classroom teaching without any difficulty
9) Students can choose/substitute modules when they cannot study **a** current module due to their disability
10) Students of Determination are provided with their IEP (Individualized Educational Plan)
11) Work load is reduced for Students of Determination if required
12) Staff are trained to support the students using assistive technology
13) Students of Determination do not use all of the accommodations which they are eligible for.
14) Some students take undue advantage of their accommodations
15) Effectiveness of accommodations is monitored regularly
16) Written exams are replaced with an oral exam or vice versa when required

17) Scribes are provided to write the exams if needed
18) Alternative evaluation is available, if needed
19) The Disability Unit supports students for internship placements
20) Faculty collaborations with students, faculty, staff, and the campus community for the full inclusion of People with Determination.
21) Faculty offer a welcoming and encouraging environment for Students of Determination for equal access and full participation
22) Communication interaction is limited between the faculty and students because of language barriers
23) Faculty's effort are valued by the Disability advisor/ coordinator to ensure that Students of Determination have equal and fair access to University curriculum
24) On campus activities are planned to provide adequate opportunities to Students with Determination to mingle with students without disabilities to develop social skills.

2. Friedman Test

The Friedman test, which evaluated differences in medians among the provisions in the university, is significant $\chi 2$ (6, N = 20) = 116.712, p < .000, i.e., all of the medians are not equal indicating fairly strong differences among the provisions of the University for Faculty survey.

3. **Wilcoxon Signed Ranks Test**

Pair wise comparisons were conducted using a Wilcoxon test and controlling for the Type I errors across these comparisons at the .05 level using the LSD procedure. The pairs 1 to 21 significantly differ from the medians (p < .01). The significant pairs are listed below.

Table 34:

Pair1	Provisions provided by the Accessibility/Disability Unit at your University - University's approach to Students of Determination in Application, Admission and Interview stage

Pair2	Academic Services provided by the University - University's approach to Students of Determination in Application, Admission and Interview stage
Pair3	Financial support provided by the University - University's approach to Students of Determination in Application, Admission and Interview stage
Pair4	Relationship with students and rest of the faculty in the University - University's approach to Students of Determination in Application, Admission and Interview stage
Pair5	Infrastructure access on campus for Students of Determination – University's approach to Students of Determination in Application, Admission and Interview stage
Pair6	Infrastructure access to hostel for Students of Determination - University's approach to Students of Determination in Application, Admission and Interview stage
Pair7	Academic Services provided by the University - Provisions provided by the Accessibility/Disability Unit at your University
Pair8	Financial support provided by the University - Provisions provided by the Accessibility/Disability Unit at your University
Pair9	Relationship with students and rest of the faculty in the University - Provisions provided by the Accessibility/Disability Unit at your University
Pair10	Infrastructure access on campus for Students of Determination - Provisions provided by the Accessibility/Disability Unit at your University
Pair11	Infrastructure access on hostel for Students of Determination - Provisions provided by the Accessibility/Disability Unit at your University
Pair12	Financial support provided by the University - Academic Services provided by the University
Pair13	Relationship with students and rest of the faculty in the University - Academic Services provided by the University
Pair14	Infrastructure access on campus for Students of Determination - Academic Services provided by the University
Pair15	Infrastructure access on hostel for Students of Determination - Academic Services provided by the University
Pair16	Relationship with students and rest of the faculty in the University - Financial support provided by the University
Pair17	Infrastructure access on campus for Students of Determination - Financial support provided by the University

Pair18	Infrastructure access to hostel for Students of Determination - Financial support provided by the University
Pair19	Infrastructure access on campus for Students of Determination - Relationship with students and rest of the faculty in the University
Pair20	Infrastructure access to hostel for Students of Determination - Relationship with students and the rest of the faculty in the University
Pair21	Infrastructure access to hostel for Students of Determination - Infrastructure access on campus for Students with Determination

Findings based on the Specialist Survey

Section – VI: Frequency analysis and Diagrammatic representation

Frequency tables and the corresponding Bar charts have been determined for the categorical variable (ordinal) for Specialist survey. From these analyses, determined and highlighted the highest respondent through the demographic variables and response variables.

Section – VII: Non-Parametric Test

Friedman Test:

The Friedman test, which evaluated differences in medians among the provisions in the University, is significant $\chi 2$ (6, N = 10) = 60, $p < .000$, i.e., all of the medians are not equal indicating fairly strong differences among the provisions of the University for Specialist survey.

Wilcoxon Signed Ranks Test:

Follow-up pair-wise comparisons were conducted using a Wilcoxon test and controlling for the Type I errors across these comparisons at the .05 level using the LSD procedure. The pairs 1 to 21 significantly differ from the medians, $p < .01$. The significant pairs are listed below

Table 35:

Pair1	Provisions by the Accessibility/Disability Unit the University - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage

Pair2	Academic Services provided by the University - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair3	Rate your opinion on financial support provided by the University - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair4	Rate your opinion on relationship with students and rest of the faculty in the University - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair5	Infrastructure access on campus for Students with Determination - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair6	infrastructure access to hostel for Students with Determination - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair7	Academic Services provided by the University – Provisions provided by the Accessibility/Disability Unit at your University
Pair8	Rate your opinion on financial support provided by the University – Provisions provided by the Accessibility/Disability Unit at your University
Pair9	Rate your opinion on relationship with students and rest of the faculty in the University – Provisions provided by the Accessibility/Disability Unit at your University
Pair10	infrastructure access on campus for Students with Determination - Provisions provided by the Accessibility/Disability Unit at your University
Pair11	infrastructure access on hostel for Students with Determination - Provisions provided by the Accessibility/Disability Unit at your University
Pair12	Rate your opinion on financial support provided by the University - Academic Services provided by the University
Pair13	Rate your opinion on relationship with students and rest of the faculty in the University - Academic Services provided by the University
Pair14	infrastructure access on campus for Students with Determination- Academic Services provided by the University.
Pair15	infrastructure access on hostel for Students with Determination - Academic Services provided by the University.
Pair16	relationship with students and rest of the faculty in the University - financial support provided by the University.
Pair17	Infrastructure access on campus for Students with Determination - financial support provided by the University.

Pair18	infrastructure access to hostel for Students with Determination - financial support provided by the University.
Pair19	Infrastructure access on campus for Students with Determination - relationship with students and rest of the faculty in the University.
Pair20	infrastructure access to hostel for Students with Determination - relationship with students and rest of the faculty in the University.
Pair21	infrastructure access on hostel for Students with Determination - infrastructure access on campus for Students with Determination.

Combined Statistical Analysis of Student-Faculty-Specialist

Section-VIII: Parametric Test

One-way MANOVA

In the study, one-way MANOVA could be used to understand whether there are differences in the score of provisions in the University and respondents. Here we have taken 7 dependent variables as scores of provisions of University (score of section 1, i.e., provision 1, score of section 2, i.e., provision 2, score of section 3, i.e., provision 3, score of section 4, i.e., provision 4, score of section 5, i.e., provision 5, score of section 6, i.e., provision 6, score of section 7, i.e., provision 7), whilst the independent variable is "respondents", which has three independent groups: "Student", "Faculty" and "Specialist").

It was inferred that there is a statistically significant difference in provisions in the University based on the respondents, F (14, 146) = 91.791, $p < .05$; Wilk's $\Lambda = 0.010$, partial $\eta^2 = .898$. Finally multiple comparisons were made for the response variables. With this most of the mean scores for Provisions are statistically significantly different between respondents ($p < 0.05$), but not between Faculty and Specialists in Provision 1 ($p = 0.347$) and student and Faculty in Provision 6A-University Campus ($p = 0.208$). These differences can be simply pictured by the plots generated by this procedure.

Section – IX: Non-Parametric Test

Friedman Test

Based on Friedman Test result below in Table 3 which evaluated differences in medians among the provisions of the University, it is significant $\chi 2$ (6, N = 82) = 459.344, p < .000, i.e., all of the medians are not equal, indicating fairly strong differences among the provisions of the University.

Wilcoxon Signed Ranks Test:

Based on the results of Wilcoxon Signed rank test, the pairs 2 to 8 and 10 to 21 significantly differ from the medians, p < .05, but pair 9 did not differ significantly from the median concern p =.259, i.e., there is insignificant difference between opinion on relationship with peers and faculty in the University and opinion on the services provided by the Accessibility/Disability Unit at the University. The pairs are listed below.

Table 36:

Pair 1	Services provided by the Accessibility/Disability unit at the University. - University's approach to Students of Determination in Application, Admission and Interview stage
Pair 2	Academic Services Provided by the University. - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair 3	Rate your opinion on financial support provided by the University - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair 4	Rate your opinion on relationship with peers and faculty in the University - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair 5	Rate your opinion on the amenities in the University for students with disability for Campus approaches and pathways to building - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair 6	Rate your opinion on the amenities in the University for students with disability for Hostel Room - Rate your opinion about University's approach to Students of Determination in Application, Admission and Interview stage
Pair 7	Rate your opinion on the Academic Services Provided by the University. - Rate your opinion on the services provided by the Accessibility/Disability Unit at the University.
Pair 8	Rate your opinion on financial support provided by the University - Rate your opinion on the services provided by the Accessibility/Disability unit at the University.
Pair 9	Rate your opinion on relationship with peers and faculty in the University - Rate your opinion on the services provided by the Accessibility/Disability Unit at the University.
Pair 10	Rate your opinion on the amenities in the University for Students with Disability for Campus approaches and pathways to buildings- Rate your opinion on the services provided by the Accessibility/Disability Unit at the University.
Pair 11	Rate your opinion on the amenities in the University for Students with Disability for Hostel Rooms - Rate your opinion on the services provided by the Accessibility/Disability Unit at the University.

Pair 12	Rate your opinion on financial support provided by the University - Rate your opinion on the Academic Services Provided by the University.
Pair 13	Rate your opinion on relationship with peers and faculty in the University - Rate your opinion on the Academic Services Provided by the University.
Pair 14	Rate your opinion on the amenities in the University for students with disability for Campus approaches and pathways to building - Rate your opinion on the Academic Services Provided by the University.
Pair 15	Rate your opinion on the amenities in the University for students with disability for Hostel Rooms - Rate your opinion on the Academic Services provided by the University.
Pair 16	Rate your opinion on relationship with peers and faculty in the University - Rate your opinion on financial support provided by the University
Pair 17	Rate your opinion on the amenities in the University for students with disability for Campus Approaches and pathways to building - Rate your opinion on financial support provided by the University
Pair 18	Rate your opinion on the amenities in the University for students with disability for Hostel Room - Rate your opinion on financial support provided by the University
Pair 19	Rate your opinion on the amenities in the University for Students with Disability for Campus approaches and pathways to buildings - Rate your opinion on relationship with peers and faculty in the University
Pair 20	Rate your opinion on the amenities in the University for Students with Disability for Hostel Rooms - Rate your opinion on relationship with peers and faculty in the University
Pair 21	Rate your opinion on the amenities in the University for Students with Disability for Hostel Rooms - Rate your opinion on the amenities in the University for students with disability for Campus approaches and pathways to buildings

Kruskal–Wallis Test

In this test, p-value = $0.000 \leq 0.05$ for all provisions based on the respondents, the null hypothesis was rejected at 5% (0.05) level of significance. There exists enough evidence to conclude that there is a difference in the median test scores. Hence the provisions of the University differ from the respondents, based on the rating score. The pairs are listed below.

Table 37:

P1	Opinion about University's approach to Students of Determination in Application, Admission and Interview stage
P2	Opinion about the services provided by the Accessibility/Disability Unit at the University.
P3	Opinion on the Academic Services provided by the University.
P4	Opinion on financial support provided by the University

P5	Opinion on relationship with peers and faculty in the University
P6A	Opinion on the amenities in the University for Students with Disability for Campus approaches and pathways to building
P6B	Opinion on the amenities in the University for Students with Disability for Hostel Rooms

In this dissertation, different types of statistical tests were applied for the purpose of identify the significant factors of Provision of Services to Students in Federal Higher Education Institutes in the UAE. From different review of literature researchers was concluded that skill of selecting appropriate statistical test is very essential for making good and specific conclusion. It was also concluded that some statistical software becomes a more important part of data analysis. Thus, in educational research statistics plays an important role for making research successfully.

The analysis of the survey has been categorized in to four sections for the purpose of identifying the significance factors are as follows:

(i) Statistical analysis of student Survey

(ii) Statistical analysis of Faculty Survey

(iii) Statistical analysis of Specialist Survey and

(iv) Combined Statistical Analysis of Student-Faculty-Specialist.

We have analyzed and interpreted the above sections. In the student Survey, we have analyzed Frequency tables and Diagrammatic representations, Independent samples t test, One way ANOVA, Friedman Test and Wilcoxon Signed ranks test, Kruskal-Wallis test and Mann-Whitney U test. Frequency tables and Diagrammatic Representations, Chi-square Goodness of fit test, Friedman and Wilcoxon Signed rank test are analyzed in the Faculty Survey. In the Specialist Survey, Frequency tables and Diagrammatic representations, Friedman and Wilcoxon Signed ranks test are analyzed. Finally, we have done combined Statistical Analysis like One-way MANOVA, Friedman Test and Wilcoxon signed rank test and Kruskal–Wallis Test for Student-Faculty-Specialist survey.

The following conclusions derived from the above analysis:

Using frequency analysis and Bar charts, those given the highest respondent and highest score values for the demographic variables and response variables in the student, faculty and specialist surveys were identified.

Only few significant factors could be determined while using parametric methods like independent sample t- test, ANOVA and MANOVA.

More significant factors were identified using non-parametric approaches like, Chi-Square Goodness-of-Fit Test, Friedman Test, Wilcoxon Signed ranks test, Kruskal-Wallis Tests and Mann-Whitney Test. With these it can be concluded that non-parametric approaches are better than the parametric approaches for identification of significant factors, while using qualitative data [we used the five-point Likert scale values]).

Finally for student, faculty and specialist surveys, many significant factors were identified, based on the scores provided by the respondents. Further, based on the statistical evidence that, we will suggest to modify the existing facilities in the University through this research study.

5.6. Findings of Qualitative Study

The researcher derived multiple main themes and sub-themes from the transcribed audio files. The findings of this research can be analyzed within the framework of the Bio-Ecological Model by arranging the Barriers and Facilitators for Inclusion within the systems presented there.

5.6.1 The Mesosystem:

As per the Bio-ecological model, the university can be seen as a mesosystem. The particular university under observation has campuses located in U.A.E.'s largest twin cities, Abu

Dhabi and Dubai, under one central administration. The university offers a variety of internationally recognized undergraduate and graduate programs at the 7 colleges under it. The Colleges are:

1. College of Arts and Creative Enterprises
2. College of Business
3. College of Communication and Media Sciences
4. College of Education
5. College of Humanities and Social Sciences
6. College of Natural and Health Sciences
7. College of Technological Innovation
8. University College

It is globally recognized as the leading university in the region for excellence in educational Innovation, research and student leadership, serving the changing needs of the nation in the Economic, social and cultural spheres. It has a diverse student intake though the majority is of Emiratis. It is equipped with the most progressive technologies. Education for locals is free. English is the medium of instruction.

The Federal University is one of the higher education institutions catering to the needs of the Students of Determination. However, this service is limited and not country wide, not easily Accessible to those with impairments in States other than Abu Dhabi and Dubai. This is also witnessed by the small percentage of SWD's at the university- less than 1% of the total population. At present the university has a total of 233 SWD's.

5.6.1.1 The Inclusion Policy at the Federal University:

This university has an inclusion policy in place to uphold the rights of Students of Determination. (See Appendix). It pledges to grant the SWD's equal and fair rights and hence has an open-door policy for them. It has an Accessibility Department (See Appendix for a complete description of its activities) set up to assess Special needs, to organize pre-registration workshops; to arrange for meetings with parents and academic staff; to monitor student progress; to provide services and support; making 'reasonable' accommodations for physical, academic, social needs etc. and to provide assistive devices (See Appendix: *Diversity and Inclusiveness*- to know about new technologies to assist the SWD's) as well as training in their usage. It also obligates the preparation of an IEP or an Individual Education Plan for SWD's and for them to become independent learners and be able to complete their studies.

Said one of the interviewees from the students, *'I am aware of the federal policy but have not checked out the university one'* and it seems that most of the students are unaware that the university actually has an inclusion policy in place. It should be mentioned here that the policy exists in English, but needs to be translated into Arabic. In any case, the students should have access to it.

5.6.1.2 Education 2020 Strategy:

Education 2020 strategy as mentioned in the government website for the Ministry of Education of the UAE, which was last updated on the 16th of January, 2020 states: "*Smart learning programs, new teachers' codes, licensing and evaluations systems, as well as curriculum revision (would be undertaken).* ***A key area of focus has been to transform K-12 programs, to ensure that***

students are fully prepared to attend universities around the world and compete in the global marketplace."

If we are talking about equity then there is a marked difference between students exiting from government schools and those hailing from private schools. Students with Determination would not be able to reach parallel levels if their primary and secondary education was from the government schools.

5.6.1.3 UN CRPD of 2006:

The UAE is a signatory to the Convention on the Rights of Persons with Disabilities (CRPD) that was passed by the United Nations in 2006 (See Appendix) to protect the rights and dignity of people with disabilities and to all of the subsequent laws that have been upheld by the UN on the rights of people with Special Needs.

5.6.2 Barriers and Facilitators for Inclusion:

Those with disabilities do not form a homogenous group. They may have sensory and mobility disabilities, specific learning difficulties, have medical conditions; for instance, asthma, diabetes, epilepsy, and mental health difficulties (Shevlin, Kenny, & McNeela, 2004). The need is for comprehensive access services that are: *"both integrated and differentiated, to ensure that common requirements are recognized and addressed as such, and that specific requirements are also appropriately registered and addressed."* (Shevlin et al., 2004) Based on this diversity in this group, Hadjikakou and Hartas (2008) suggested, "*The provision of ICT, counseling and career services should be differentiated for students with disabilities in that (as), providing generic services is less likely to remove obstacles to learning*."

Services have a differential impact according to the nature of disability and hence some of the response statements that seem contradictory in the questionnaires are not actually so. For instance, Physical Accessibility differs for a student with visual or mobility impairment from one with intellectual disability.

Both the Qualitative and Quantitative research data concur and strengthen the claims made except in a few statements that seem to have been made to simply appease the institution.

5.6.2.1 Application, Interview and Admission Procedure

These have been sub-divided in to the following sections

5.6.2.1.1 Discrepancies in Documentation and suggestions for improvement:

Furthermore, documentation regarding the history of the impairment and interventions is not mandatory to submit, and few schools do so. A smooth transition would prevent gaps in the system and would be more cost-effective. This can be achieved by liaison between the secondary and university levels, before admission, to know the procedure and by visits to the higher education institutions, to meet the personnel there and check out the suitability of the premises.

Students may submit files that lack complete evaluations and might not be current (with testing completed some years earlier) or fail to show the early problems faced by students with a learning disability.

Evaluations may vary e.g., between public schools vs. private clinicians, which may lead to discrepancies in the documents. Documentation should be complete and comprises of age -

appropriate reading, mathematics, and written language achievement tests that have been conducted within the previous three years. A university that provides services for students with LD should provide information to parents and prospective students about the types of documentation required and the diagnostic criteria for LD that are necessary for the admission the programs. (Richard L. Sparks, EdD and Benjamin J. Lovett, Ph.D, 2013) Perhaps because of privacy concerns, the required documentation for successful interventions is incomplete or missing. Schools also bear a responsibility in this to maintain and then co-operate in sharing this data with the university bodies. Students mentioned that there is no restriction to apply for Admission and no pre-placement tests are held.

Higher education institutions could be linked to vocational training centers to support initiatives for the employment of students who experience SEND. The universities need to work in partnership with schools to develop vocational and alternative education pathways. Under-graduate level courses associated with inclusive education and related specialist services are to be provided. The aim is to have access to high-quality, cost-effective, time-efficient, and accredited inclusive education training and development opportunities and work placement programs, such as apprenticeships, training contracts, and supervised work programs in the private, public and voluntary sectors. For this, a database would should be developed to register public offices, private companies, institutes, voluntary associations, and other organizations whose activities are suitable for promoting meaningful work placements of students who experience SEND.

Though inclusion is compulsory in the school set-up, it still needs to be well established to prepare individuals of determination to meet higher education requirements. There is a gap between the two levels, which hinders progress at present.

There is recognition at present of multiple barriers present in the system- negative societal attitudes, physical inaccessibility problems, inequity in the opportunities of education, for instance- the absence of a comprehensive support system and the burden of exorbitant sums of money to pay for disability-related services which in turn affects the general standard and quality of life. The policies and procedures may be restrictive like limited employment opportunities, paucity of quality vocational education, training, and rehab programs for pre and post work placement- concentrating on the improvement of POD skills and readiness to transition to work as well as the absence of a comprehensive, inclusive employment policy concerning POD.

A plan to collaboratively maintain Monitoring and Evaluation systems (M&E), collect and analyze data, track student progress, and share information on students experiencing SEND from birth to adulthood through post-secondary and vocational education and training across all relevant sectors is to be maintained. Maintaining accurate data and its analysis is essential for reform. Specialized software in the present technological era should make this easy. Education practices and their outcomes need to be reported and regularly reviewed.

5.6.2.1.2 Entry Requirements:

At the sample University, all the courses are conducted in English; hence proficiency in the English language is a requirement for admission. For this purpose, candidates must pass the EmSat Test with a minimum of 1250 points. Applicants with an EmSAT score of 1100, IELTS of 5.0, or TOEFL IBT score of 61, may be provisionally admitted to a Preparatory course - The Listening and Speaking Skills course at the University. The students coming from Emirati government schools usually have a low level of competency in the English language, as they are

coming from an Arabic medium school. Student A: "*If we have an entrance test that is a barrier. Yes, not for me but for others. They have to do it and it is tough*."

Student B: "*A barrier to even entering a university could be as simple as an entrance exam that has a very high benchmark."*

Another student said*, "So we all got admitted online, basically. After the EMSAT exam, depending on the score, we enrolled in the foundation courses for 4 months. My friend needed more support. And we picked the university we liked. We did not choose to go abroad.*"

Some students were anxious about the disclosure of disability and if they were going to be accepted to the university on that basis. This is evident from the following statement by a student: "*Yes, there are detailed questions about the nature of the disability. I think they need the medical reports. My disability is obvious. I picked this university because of the major I was interested in- Environmental Science and Sustainability.*

The Entrance exam is made accessible for (vision impaired) students in braille format. Other than this there are no tailor-made versions of the admissions test to suit the needs of Students of Determination, which happens to be a diverse group. The exam must surely be a major hurdle, especially for the wide range of those suffering from learning disabilities. In previous years, the Preparatory English course used to run for a year and a half but has now been slashed to 4 months only. This is an obvious additional disadvantage. During the interviews with students, the researcher realized the low level of competence in English and poor communication skills the students had. University studies require a lot of material to be read and referenced, and to do so in a language one is not well-versed in, is definitely an obstacle in their success. The researcher found this factor to be a major hindrance, as Hofstede also insists (1991) that without linguistic competence, adjustment cannot be achieved (Hofstede, G., 1991)

Despite such hurdles and drawbacks, which the students seemed oblivious to, they were very happy to be at the University. They found the atmosphere welcoming. They got to know from the website that some accessibility accommodations for people of determination were made, but came to know about the Accessibility Unit only on the orientation day. Most of them had registered online.

5.6.2.1.3 Registration and Identification Stage:

Before admission, it would be helpful if the schools liaised with HE institutions and assisted all students in acquiring information about the university and its provisions, and arranged visits to campuses. The University arranges events wherein prospective students can explore the University for themselves, meet the people from the Accessibility Unit, older students, and Faculty members. Prior knowledge can help students access their choices and needs, and thereby benefit from the services offered in an optimum manner. It is up to the students and their parents to avail of these opportunities.

The Accessibility Unit Brochure mentions that they conduct Pre-registration workshops on preparing a schedule and discussing with the advisor and the registration office. New students receive a package from the University at Admission time, which includes the Accessibility Unit Brochure. One case manager is appointed for each student. The student is registered at the Accessibility Unit. So, all of the documents related to that student are provided here.

The Accessibility Unit conducts Awareness campaigns periodically for the general public, as well as in-house students. Students with physical and obvious disabilities, if not yet registered, are advised to do so. Some self-register and others come accompanied by their parents or are

encouraged by friends to do so. There are others, however, who wish not to disclose their disabilities for various reasons. The Awareness campaigns have a role to play in the encouragement of Students of Determination, as also do all other members of the community, the supportive role of the parents, the peer group, and concerned Faculty.

As has been mentioned, most of the students that the researcher interviewed confirmed that they had registered online. The university website is accessible to and inclusive for all its users, including those with special needs. The students praised the Accessibility Unit for their efforts in helping Students of Determination to access educational opportunities equal to those of other students. At admission time, some students directly go to the Accessibility Unit and register, in order to benefit from their services. Others are referred to by the Faculty with the permission of the student. Screening is encouraged at this point; an appointment is scheduled for a consultation with the Specialist of the Unit to explore whether a formal evaluation for a possible disability is needed. Then the Unit generates an IEP which identifies the individual student's strengths and weaknesses, and mentions goals and steps for the student's progressive development. The accommodations are made according to the goals in the IEP's. The relevant section for improvement in studies is shared with Faculty. The Accessibility Unit also welcomes all inquiries about it that are made by the Students of Determination. It appears that the Accessibility Unit at the University prepares IEP's perhaps for Students of Determination with severe disabilities as when queried about IEP's no one had any idea about what an IEP is. In principle IEP's need to be shared with the student and Faculty in order to enumerate the progress the student is making and the document indicates a continual program of development and target goals.

The Disability Advisor/Coordinators ensure that the students receive appropriate accommodations, and with the student's choice and permission, they recommend the right and

effective academic adjustments, provide assistive technology training, arrange transportation, library assistance, and other services for Students of Determination.

The Specialist said, "*When a student is registered with us, if they have a physical disability, we do needs-analysis on what accommodations they require. It might be very simple, for example, the door might be difficult to open, so we take off the door arm. If they are in a wheelchair, they might need access to bathrooms. They need to grab bars in different places, things like that*."

"*There are disabilities however, that might go unnoticed during admission. The Faculty might not know how to deal with such cases. Some students who are deaf or wear hearing aids do not want to be identified. The faculties then inform us or email us, then we go to the Faculty and try to sort out the problem*."

"*We are certain that 95% of all of those with physical disabilities that need our support, are registered with us. Nevertheless, the problem is (still) in finding people with learning difficulties. Furthermore, that is when the faculties help."*

"We do have Learning Difficulty Awareness day, an Ear Care Awareness day, Blind-care awareness day. All of these activities bring people to our area, and we inform them of what else we do as well. In September, we visit as many classes as we can, to promote awareness about the SAS (Accessibility Unit)."

The Specialist informed the researcher: "*We have different handbooks which give very good support information to the students, and we also have outlets for Online Books."*

"*We get the initial list of the Students of Determination from the Ministry. Part of our duty is to release information to Faculty on a needs-to-know basis, but we need permission to release that information from the concerned student. Without the student's signature, even though the student is registered with us, we will not approach the Faculty. We will not do anything for them*

because we cannot do it. (Because) then we would be releasing (sensitive/confidential) information. So, if they're looking for extra time, we cannot give them extra time."

5.6.3 Culture Changes needed within the Context of the Micro and Meso Systems:

Within the context and parameters of Islamic Law, social justice is a foundational principle which upholds the elimination of discrimination and promotes our community's well-being. What is beneficial for the inclusion movement, is that, it does not need to be curtailed by individual preferences and could be promoted by sound laws and by collaboration and cooperation of all concerned sectors. For a holistic perception of the situational context of inclusion, the full-scale application of the Bio-ecological Model seems ideal.

Parents and communities have a responsibility to play a collaborative role in uplifting the nation. Awareness campaigns should encourage people to be more open to being able to benefit the marginalized: in this case, the reference is to those with impairments. Respect and dignity are principles that are enshrined in our faith. Positive acceptance of these diverse states at the individual and societal level; cooperation between different sectors of society and the removal of cultural, attitudinal barriers of indifference and apathy are a priori requirement for the progression of this cause.

Parents also play a pivotal role in instilling confidence and positive traits in their offspring. The emphasis on being positive, and confidence-building exercises for the youth should continue through school and through life within societies that truly care and wish to beneficially utilize their human resources to the optimum.

The attitudinal barriers that those with impairments may suffer need to be attended to, at the level of the family, the school, and the peer groups, during the developmental years. Labeling people as stereotypes is a social evil to be avoided. Denhart, H. (2008).

At the level of Faculty, a culture change is needed to change attitudes and to make the curriculum accessible to all. It would improve teaching and learning for all students. Other areas that need particular attention are monitoring student achievements and provisions for staff development. The first step in the process is establishing the core requirements of a subject or discipline concerning the possible capabilities of groups with disabilities. Once these are identified, alternative assessment methods that do not compromise the standard can be identified.

The biggest hurdle noticed in the system was the lack of Inclusive Education Training amongst Faculty and their resistance to change and this was noticed and commented by both the students and Accessibility staff.

In theory the diverse needs of all are to be met and barriers need to be pro-actively removed for all levels of education. The challenges at each level are formidable- adapting and modifying curricula, teaching and learning strategies to suit each learner- to result in successful learning, providing a safe, supportive, engaging, and appropriately challenging common learning environment, as well as fostering an atmosphere of positive social relationships with peers and others.

Inclusive education should also be a compulsory element in the educational qualifications of the Faculty, made mandatory through federal policy. Faculty should have access to appropriate in-service and on-going training and support, be actively engaged in the use of inclusive instructional strategies- planning of lessons, classroom set-up and student groupings, proficient in the use of new technologies, delivering quality teaching, encouraging and supporting the active

involvement and inclusion of every student – physically, academically, socially, emotionally and culturally. The universal design for learning must be applied in developing individual educational plans (IEP's), using flexible curricula pathways, formative assessments, and learner-centered activities, engaging in coaching and co-teaching when required.

Vocational trainers, teaching staff need to possess the basic knowledge and experience of inclusive education principles and techniques. Accreditation processes for all education certificates need to be revised. Some earlier studies on teachers' attitudes towards inclusion displayed negative sentiments (Al Zyoudi, Al Sartwai, and Dodin, 2011; Al Ghazo and Gaad, 2004; Gaad, 2004b). The inclusion of children with intellectual and severe learning disabilities and behavioral disorders was vigorously opposed as (understandably) teachers with fewer years of experience felt inadequate. They were not equipped with the appropriate training and strategies to meet the educational needs of these children. (Bradshaw, 2009; Gaad and Khan, 2007; Gaad, 2004a; Gaad, 2004b; Alghazo and Gaad, 2004; Alborno and Gaad, 2014).

Training and experience have led to improved attitudes amongst elementary school teachers, making curricular modifications more challenging for higher levels. The Knowledge and Human Development Authority (KHDA) was set up in 2006 to monitor private schools in Dubai. In 2010 MOE introduced the 'School for All Initiative" and simultaneously published the 'General Rules for the Provision of Special Education and Programs and Services for public and private schools and began training programs for staff members. After 2014 the KHDA private school inspection reports included a judgment of a school's effectiveness of SEN provisions.

The above experiences at the primary and secondary education level should be torch-bearers for the action needed at the level of higher education in UAE. For recruitment, employment, and retention policies at the Higher Education level, inclusive education knowledge

and the capacity to demonstrate this in practice, must to be given priority according to the policy adopted in Dubai. There needs to be some common agreement among postsecondary institutions of what it is to be a ‘standard base service’ in inclusive practice.

5.6.4 Reforms needed in the existing Exo-System:

5.6.4.1 Dynamic Leadership:

To bring about the transformative experience of inclusion and to have it firmly rooted requires dedicated leadership at both state and institutional level. There is no doubt about the fact that the country’s top leadership is passionately enthusiastic about inclusion in education. This is apparent from the policies being vigorously initiated and proliferated at the level of private and public schools and diverse activities promoted for awareness. The Dubai and Abu Dhabi campuses of the University are also fortunate in the active roles of senior management, in their attempts to entrench the nascent practices of inclusion, firmly within the bedrock of the institution and thereby act as a benchmark for other institutions of higher learning. The Specialists at both campuses bore witness to the fact that higher authorities at the university and the country’s ministries are very active in motivating change towards inclusion.

The higher management in all universities should enthusiastically uphold an inclusive movement, especially when it involves multiple phases, and requires a high level of concerted effort and patience. They should keep themselves well informed and actively engaged in the implementation of inclusive education through appropriate strategies, and by supporting a

welcoming, sustainable environment for all students, empowering all stakeholders and ensuring compliance to the requirements of the policies by establishing quality inclusive education standards. This needs to be developed. According to (Schuelka, Sherab & Nidup, 2018; Sherab et al., 2015), "*often the most inclusive and high-quality schools are those that have school leaders who lead with vision, inclusive values, motivation, autonomy, and trust in school staff*." The same principle is applicable at the HE level in UAE.

5.6.4.2 Policy and Practice:

Government policies state the mandatory nature of inclusion at all levels of education. At the HE level, although it is being practiced at the sample University, the movement is still in its nascent stage; it is not fully established and has not yet caught on in other higher institutions of learning within the country. Anything novel takes time, but perhaps it could be started elsewhere on an experimental basis, building on the experiences of the sample university. The University is visited once in four years by members from the University's accrediting body. Perhaps this should be more frequent. Inclusion, in its proper and complete sense, is compulsory in the private schools, but it has not yet been fully incorporated there. Hence it may be speculated that such practices will only be gradually institutionalized at the university level at a slow pace, as this work is of much wider scope at the university level than it is at the primary and secondary schools level.

The Emirates of Dubai and Abu Dhabi were instrumental in rolling out inclusive policies. *Dubai Inclusive Policy* is quite comprehensive and aims at a fully integrated, inclusive society by 2020 whereas the *Abu Dhabi Strategy for People of Determination* intends it by 2024. These policies were developed to support the UAE's commitment to the United Nations

Convention on the Rights of Persons with Disabilities (UNCRPD).). However, there is a marked difference between the declared policies of countries on inclusive education and their implementation. (Ramot, & Feldman,2003).

5.6.4.3 Positive Student Self-Image:

By this stage in the student's lives, they must be equipped with a positive self- image, desirable social skills and have the self-determination to advocate for themselves. Often students will not seek accommodations, and this is more marked with those with learning difficulties. They feel self-sufficient or are afraid of stigma or fear negative consequences from Faculty and in the job market later. Self-determination refers to a collection of characteristics: made up of "*decision-making, problem-solving, goal setting, and attainment, self-advocacy, self-awareness, and self-regulation*." According to Schlossberg's transition theory Evans, Forney, Guido, Patton and Renn, 2010, there are four factors which individuals need to navigate, in order to complete their transition to university. These factors are situation, self, support, and strategies (Goodman et al., 2006). Students, particularly those with learning disabilities, must self-identify to the Accessibility Unit, acquire the knowledge of available support, effectively self-advocate for 'reasonable' accommodations before the beginning of the term, and make use of the services provided.

The family, the peer group, and the school's programs and culture all influence the individual's self- image and play an important role in nurturing and cultivating positive, worthy, respectable citizens. A culture of showing respect and dignity and equity for others, at the institutional level, can generate an all-round atmosphere of mutual collaboration and cooperation.

Students of Determination may continue to show weaknesses in academic skills in adulthood. They will particularly need the skill of self- advocacy and the awareness about their

strengths and weaknesses, in order to uphold their right to receive appropriate accommodations. Decision making is challenging for them. They may need counseling and specialized academic tutoring to help them to reach their full educational potential. (Getzel and Gugerty, 1996).

A Faculty member mentioned, "*I think my students need more workshops and training for developing their social skills. Some students are not determined and motivated while others do not disclose their disability, fearing stigma and some-a minority – develop a victim mentality."*

5.6.4.4 Accessibility:

'Accessibility' is an umbrella term for all of the support services extended by the institution from the Admission Office, the Accessibility Unit, the physical infrastructure of the institution, the Unit of Assistive Technologies, Advisory and Auxiliary Services- Counseling and Career Advice, the Faculties and the myriad responsibilities that these bodies cater to and also refers to their expertise and their cohesion and mutual collaboration. As referred to in the Quantitative analysis section, there is a lack of collaboration and cooperation between Faculty and Accessibility Staff and Students-specifically those with severe disabilities.

5.6.4.5 The General Services of the Accessibility Unit:

All relevant matters related to students are treated as confidential within the Unit's confines, and the reasonable rights and choices of students are prioritized.

5.6.4.6 The Structure and Composition and Functions of the Accessibility Unit:

The Specialist mentioned the keen interest she has in the betterment of Students of Determination. The researcher found the Specialists to be professionally qualified in their fields

and pleasant, co-operative, sensitive, and responsive - traits required for such work. They organized various activities and events to increase the awareness of students, staff, and the public for a better understanding of how to help people with special needs. It aims at facilitating courses and course materials to ensure equal educational opportunities for Students of Determination.

Universities are willing to participate in public forums regarding special needs. They provide administrative and academic services and social facilities to assist students in learning, research, participation and field training programs at different institutions around the country.

The Unit of Student Accessibility Services (SAS) at the sample University has recently been recognized as an Apple Distinguished School (ADS) for 2018-2021. It has empowered Students of Determination using assistive technologies and apps to successfully pursue their undergraduate studies.

The philanthropic contributions of many donors also help the Unit. This Assistive Technology Resource Center (See Appendix) is one of the major centers that provides training on assistive technology devices. Students attend in-depth workshops on accessibility features and applications that will make their academic life more inclusive and enable them to become empowered members of the sample university community. Besides, the center handles all exams and material accommodations for Students of Determination at the sample University.

The Manager from the Accessibility Unit said, "*We are a young unit, only two years here. We are fine with the staff at present, but more can always help. They range from disability specialists to miscellaneous support staff."*

It did appear that some of the Accessibility Staff were swamped with a lot on their hands. Like this Specialist- she said she has 72 students under her that are divided between her and her colleague. She said that a single IEP might have taken her two hours to create, and they need to be

updated regularly. While the researcher was interviewing, the respondent was being queried by a host of colleagues and perhaps Faculty members. She informed the researcher that each Specialist is loaded with more than 30 cases. Perhaps there is a shortage of staff.

Some Faculty mentioned that there is enough staff in the Accessibility Unit but provision for additional staff will be beneficial including a teaching assistant to support the students.

Faculty A said, "*Definitely there should be an increase in the staff at school but right now the staff is okay, and you know everything is functioning properly as compared to before. We have a learning difficulties Specialist, we have a manager and we have an Accessibility Specialist and every person's function and their job is defined. The staff of SAS are all trained and qualified. Well, I've had a student - a profound case, every class she attended was with a teaching assistant. I mean, I think that's a really, really great level of support*."

For the Specialists, one of their challenges is assessing students with learning disabilities.

The Manager stated, "*So we are more or less certain that we've registered here 95% of all of the physical disabilities students that need our support. But the problem is finding those who we are unaware of. And that is where the faculties help…I suppose if a Faculty faces a difficulty, having a student with learning difficulties then they come and approach us and ask us for guidance*."

The Specialists also make assessments of Specific Learning Disabilities for at-risk students to determine their special educational needs.

The Unit provides mobility training, Braille and computer skills to ensure students' independence. They also accommodate curriculum and other learning materials for students with vision impairment into accessible formats such as enlarged print, audio, and braille, and accommodate exams according to the students' needs and requirements.

The Specialist continued, "*We also provide One-on-One instructional support to unlock curriculum core competencies and conduct periodic academic support meetings for each Student of Determination, to monitor students' progress as well as meetings at the end of the semester to discuss progress, and we might also contact the student's family to discuss any support the student may need.*"

The ministry should make it mandatory to set up of an 'Accessibility Office' in every university to provide support for SEND students. The Accessibility Officer and a properly trained and qualified Inclusion Support Team need to be recruited to facilitate the enrolment of SEND students, provide support to staff in terms of needed curricular adaptations, teaching and learning modifications, provide assistive technologies and devices, collaborate in identifying and dealing with problems and challenges that emerge for students and encourage and support parent/family participation in the education process. Students of Determination have the right to be admitted to their preferred institution of choice, and those with 'invisible' disabilities need to be identified and supported too.

5.6.5 Faculty's Awareness of Inclusion Policy:

The Specialist informed the researcher, "*We have a policy of positive reinforcement, in that we should make sure all Faculty take whatever is given to them. We don't have a policy of teaching any students separately. We can do tutoring to support what they're learning. When the new Faculty comes in, we have lots of information meetings."*

A support staff also added, "*I'm not really up on the policies of the university to be honest. And because I'm not really full time in this unit, I don't really know. I'm not a Faculty. Should we*

be aware of it? I mean, I don't know. I don't know what the inclusion relative to the university is, but I know what the law is. I don't know anything that happens before they get here. I'm not very well-informed on choosing their courses."

Globally wherever inclusion has been introduced at the Higher education level it has faced the entrenched attitude of Faculty members, with their particular mode of teaching by the lecture method. Assistive technologies have rapidly developed to offer variable modes of presentation and become part of regular practices. Students with sensory impairments can be easily catered to by making use of the technologies. The problems arise with having to attend to those with learning difficulties. Faculty members are catching up with inclusion. However, they are faced with challenges with the latter group, and some other faculty members will take time to pick up with rapidly developing technologies. Then there is the problem of student-teacher adjustment. This student that I interviewed said, "*I have a problem every semester- the new teachers do not know how to work with me. I have special needs, and although the Specialist sends emails to the Faculty before the semester starts, the Faculty members take time to understand my needs*."

Training sessions are conducted for the Faculty too, and they can avail of them to improve their skills. When faculties make recommendations, they must make sure to request for the right accommodations. This student said, *"The coordinators are sensitive to our needs and helpful. The specialists and Faculty provide extra remedial classes for us. For students with learning disabilities, sometimes, the Faculty considers the impact of the disability on written work, and they give them extra time for assignments."* Another student with Attention Deficit Hyperactive Disorder was appreciative of Faculty extending help, by letting students go to her during office hours to discuss marks and give feedback.

Another student mentioned, *"The Specialist staff is trained in assistive technology but there is not enough training for the Faculty. So, I think often, they need to be trained further."*

Yet another student mentioned that *"There are few teachers that are aware of what students are going through."*

However, they said that, *"Faculty sends mail to Specialists to get their recommendations. The Faculty doesn't know how to use braille"* This becomes a challenge for the students as they need support from the Faculty on using assistive technology too.

One student also said, *"Not all faculties understand their needs for a few weeks. However, as they get trained it helps them to understand the needs of Students of Determination."*

The brochure mentioned that The College of Education at University provides the best academic and training programs to Students with Determination who focus on developing their abilities and talents. Perhaps it can also act as an advisory source to the Accessibility Unit and the faculties.

The Faculty must inform the Accessibility Unit for all materials that need to be modified and presented to the SWD's in a suitable format at least three days before the session, for the students to be able to access them. Braille needs to be transcribed.

In various studies that included students with disabilities' positive experience, one of the factors identified was *"well-informed academic staff, aware of the students' diverse learning requirements."* (Holloway (2001) And Shevlin et al. (2004), Shevlin, M., Kenny, M., & McNeela, E. (2004)).

In any higher education setting, it is the Faculty that plays a significant role in the quality of education imparted. The challenge of diversity is a worthy challenge to embrace. Perhaps

international conferences and examples of best practices in order to create awareness at a global level could help.

The faculty members do not have special needs training like the one I interviewed, who professed: "*I don't really know how to help these students. I just try to figure out what it is that would help for what they need*."

Workshops are provided by the staff of the Accessibility Unit on awareness of issues faced by students with disabilities, but these are not mandatory for the Faculty to attend. Some Faculty members do not find the time to collaborate with the Accessibility Staff. When the new Faculty are recruited, the Accessibility Unit does induction sessions with them to preempt the possibility of any problems later, to avoid what happened before in the case of two blind students, who were refused extra help by Faculty- a situation like that just creates an unhealthy environment.

Some of the faculties are also not ready for the change. They feel they don't know how to deal with inclusive methods, in particular those concerning the curriculum. Others do not find the time to collaborate with the Accessibility staff and feel that students with disabilities consume a lot of their time, when they have to explain or re-explain things in class, which takes away from the time of other students. They feel that the modification of class notes daily is not always possible either. Some Faculty also believed that some of the students are taking undue advantages of the provisions granted and that they are themselves equally determined and motivated.

The Accessibility Unit informs the Faculty by email that a student in their class has a certain kind of impairment. They might say something like they may need to leave the classroom regularly, or that they may need to sit near the front or need extra time for assignments and exams. Such accommodations may be easier to attend to.

5.6.6 University's Physical Accessibility:

The first campus of the University was built in 1977 when there was not the awareness about ease of accessibility to all groups of people, but subsequently, ramps and railings were added to the infrastructure to make for ease of accessibility. The other two campuses are later additions from 2008 and 2011.

The students with physical disabilities do face issues at the older campus. They complained that the distances they have to cover are large, and the classes are not at close proximity to other areas that they might need to visit, like the Accessibility Unit. This physically impaired student said: "*Student volunteers help me, but I do get exhausted. The hallways are long, and the structural changes at present make it difficult, as I am blind. The lifts do not have audio for the visually impaired*."

Another student who is also physically disabled finds it difficult to do her exams in the labs as the benches are high and inconvenient. She said, *"I can't use the microscopes in the labs because they are high above me because of the height of the benches. They did change my classroom to the ground floor and that is their policy for the visually and physically impaired students."* From a comment made by one student, it appears the University has become crowded. She said, *"The SAS unit needs to arrange more rooms for the sessions and exams. They need to expand to accommodate all of us*." One of the challenges faced by the Students of Determination is having sufficient space during examinations.

A number of students with physical disabilities who use wheelchairs, mentioned that the auditorium is inaccessible for them, so they always sit in the front row and are uncomfortable about it, as there are no separate places to park their wheelchairs. As Holloway (2001) emphasized in her study that the need to raise lecturers' awareness about students with mobility disabilities, as

this group of students often feels marginalized. The researcher agrees with Holloway, who stressed that not getting to sit with other students, but always sitting in one place is by itself a divisive experience.

According to the Specialists the infrastructure for Students of Determination is generally all quite good and accessible. Faculty also mentioned, "*Classrooms are fine and spacious, Library facilities are very good*."

About sports facilities, they said, "*There are no playgrounds only a gym which can also be used by the mobility impaired for physiotherapy*." Another student was very grateful, as due to her condition, the people from the Unit visit her frequently in class. They bring her the materials she needs and talk with Faculty members to see if she needs more help.

One student's experience can vary from another. Sometimes fewer students might be enrolled in one particular courses, and the researcher observed that another student found the classrooms very spacious. The library facilities were found to be adequate, and office counters are easily within reach. However, transportation is a problem as the buses are not custom made for those with impairments. The steps are difficult for them to climb.

The Specialist continued, "*The Facilities Unit has worked hard for students. Buildings are very good. There are endless office counters. Classroom numbers are in Braille, but it is a huge campus. Classrooms can be difficult to reach as they are located far apart. We then request to change classrooms for the visually impaired and those with mobility problems. The bigger challenge for us is to have more space to accommodate students during activities. We have ways of getting them into auditoriums through different entrances for them. We are working on the laboratories now. The canteen has good water dispensers. All the toilets have disability hoses, and there are special extra-wide parking spaces for the Students of Determination."*

5.6.6.1 The Accessibility of Premises and the Inclusive Education Improvement Plan:

The Policies stress the importance of the accessibility of premises following the accepted Universal Accessibility Code. (The legal framework was laid by the passage of laws between 2006 and 2014 to foster a cultural change and create an infrastructure to implement inclusivity practices). There are barriers to participation in public life, such as in the arts, recreation, sports, and volunteer work.

Initiatives like 'My Community' and 'A City for Everyone' were launched in 2013 to make Dubai disability-friendly by 2020. At the Higher education level, there is awareness about SWD's. Students in categories like those with visual impairment and those with mobility problems – can be seen in college corridors, and others with invisible disabilities, i.e., intellectual disabilities, may also be present. Their presence helps in the awareness of the non-disabled about humane feelings and empathy for others that are unlike them. Some universities do have Accessibility Rooms, and in the newer universities, efforts have been made to ensure physical accessibility too.

5.6.6.2 Academic Services Provided by the University:

The Academic services provided by the Accessibility Unit are excellent. One particular student chose to study at this University and was happy to do so as she had an obvious, visible disability. Her passion was to major in Environmental Science and Sustainability, and she got the opportunity to do so, as the subject was also being offered here.

Another student was very motivated about her university studies. She intends to graduate and work in the field of broadcasting. However, other students can be limited in the choice of

subjects if the major they wish to pursue is not available at the University, although a wide range of options is offered.

From a student's account of the range of services she uses at the University, much work supports those with special needs. She said, *"PDFs are converted for me. I use a screen reader on my iPhone or access the material in the library. I use my iPhone, but when the charge is gone, I use the iPad. I use my braille machine to write notes in classes. I do my assignments and my exams with my braille touch machine*."

From the choice of subjects, it appears that these Students of Determination are a progressive group and are career oriented.

Some of the students were not aware of the individualized learning plan, IEP perhaps because of their poor English language skills or for some other reason. This is a disadvantage, as the purpose of the IEP is to inform the student and the Faculty about the periodic goals and the on-going interventions and the academic and social development of the student, which he requires to be actively involved in. When asked about IEP's she said, "*No individualized education plans. No, maybe not applicable" Another student added, "Now my goal is to graduate from university and my goal is to work at the radio and I want to send my messages for special needs and tell them they can do what they want without depending on others. Nobody can tell them you can't do this. Yeah. They can do everything*."

Students are allowed to substitute course modules if they are not able to manage with their choices. The researcher wonders if they are initially helped in the choice of their majors, as in the absence of collaboration on transition, they might need this service, if the school has failed to prepare them with social skills and the preparation for adult life, which includes following a path

that would take them to the career appropriate for them. However subject choices suitable for SWD's are not offered at this university, at least not those that lead up to vocational training.

The Specialist said, "*I go through lectures and PowerPoints that they've already had, and they didn't quite get to understand and explain things in a bit more depth and in a bit more time. But sometimes they need more time and extra help. They might come to me then to go over it again, you know, or to explain it in a different way*."

He continued, "*Many of our students with low vision or who are blind prefer the content to be digitally generated. We have provided scribes in the past, but we are finding that if we train our students to use the computer, it is fine, and so they are being given special training*."

He said, "*Siri app is very good for people with dyslexia and dyspraxia and can keep them organized. Someone who has a memory issue can be helped by reminders on the phone to set up a schedule*."

IEP goals are according to the students' requirements and are based on the curriculum. If a student has a problem with math or needs extra help in some other subject, they provide academic support from the Accessibility Unit. He said, "*We are very lucky that we have Faculty who volunteer to come to the center to provide free classes in their own time. If the student isn't working and they're complaining that they don't understand we involve the Faculty. Sometimes the parents unreasonably push for us to make the curriculum easier, but that is a no-go area*."

According to a Specialist, "*The academic side of support needs expanding, but the one thing we don't want to do is to have to teach them separately. It's because often I'm so booked up, and I'll still have students queuing up.* "

According to a Student *"I also read Braille, but they need to translate it in Braille (*by the Accessibility Unit*) three days before* (class*). So, all materials from the Faculty need to be submitted at least 3 days before the session for me to access the material."*

Students are sometimes given advance presentations and advance lecture notes so that they come prepared for the lecture. The workload is reduced for Students of Determination if required, and the contents of the course may be modified but they do the full curriculum. Gardener (1998) asserts that Students of Determination are more likely to participate in the university when they are actively engaged in learning.

No vocational courses are offered for Students with severe disabilities.

5.6.6.3 Provision of Assistive Equipment:

The Specialist informed me, "*We're very keen to introduce technology into students' lives, especially dyslexic students, and devices like voice to text. It's very important that they have access to technology. So, we're constantly providing workshops on these devices."*

State of the art equipment is provided free of cost for locals and others can choose to purchase such equipment. The white cane for the visually impaired, reading aids for specific learning disability, wheelchair, crutch, adjustable table chair and a special mouse. For the physically impaired and hearing aid, speech to text software, electronic lesson materials and a sign language dictionary for those with auditory impairments. All Students of Determination are given the necessary training to enhance their technical skills. A student informed me, "*I get support with assistive technology for the visually impaired, a braille machine, text to speech software, braille books, audio books, and a screen reading program."* Lecture summaries are given through copies

of lecture notes, copies of presentations, or lecture recordings. Students of Determination can also be granted a personal Learning Support Assistant to facilitate their learning. Some students may need an assistant in class for note-taking, but as they feel uncomfortable, they refuse this help and suffer.

Some of the students acknowledged that Specialist staff are giving them the right accommodation and support. They said that, *"The coordinators here are sensitive to your needs. They are not arrogant. And they're very happy to help you."*

The array of technologies that the students are exposed to, and provided with, is an important step in the empowerment of the Students of Determination. The Manager also added that,

"*There's no modification of the curriculum. They do full curriculum. However, what we will do is we will provide extra time for them. For the blind students, we transcribe the exam into braille but many of them now prefer it digitally generated. We have in the past provided scribes. So, depending on when they come in here that they have this set schedule, that's when they come in and get trained in different kinds of assistive technologies. According to the needs analysis that's done initially we see where the deficits in their knowledge are, especially with technology. We're very keen to introduce technology into their lives, especially dyslexic students, you know, voice to text, things like that. It's very important that they have access to technology. So, we're constantly providing individual workshops and group workshops.*"

It is clear that, the training in the use of smart technologies is imperative for speedy access to knowledge and services, and for those in the field of education it is a necessary requirement.

5.6.7 Relationship with Peers and Faculty:

It is a positive need that humans must relate with others, which helps them to build bonds and create social groupings, to interact with each other, to be accepted, and to be accepting. Most of the students on campus are comfortable with interacting with Students of Determination and can obtain assistance from other students without disabilities. This one said, "*I do have friends, but they are usually like the girl over here. We meet here (in the Accessibility Unit) because we have different majors. Not all students with disabilities come to the center as they are shy."*

Like all groups of human beings, there must be some of them who like to socialize while others who are loners or introverts and may also lack access to social networks and, consequently, be uninvolved in extracurricular activities, thus reducing opportunities for informal learning. The importance of social networks and social relations was highlighted by Roux and Burnett (2010) and C. Burnett (2010). They concluded that students with disabilities should be encouraged to participate in decision-making to meet their special needs.

According to a Faculty "*You must be careful about how you handle Students of Determination in a mainstream classroom because some other students might act strange towards them, but others are very friendly and quite helpful. If the student looks like they do not mind sitting next to that student, and they get on quite well, then I'll encourage that relationship. However, I will myself not say to a student, can you sit next to her and help her, as it is not their liability. So, you have to be a bit careful, and we've had cases of bullying, but I always let the classroom dynamics develop itself. The higher goals for inclusion are the cultivation of social justice and always a humane disposition towards others.*"

The Specialist continued, "*I think we've got a very positive relationship with the students, and they feel comfortable with us because we can laugh and joke with them as we see them quite regularly, and there are areas here to relax. So, you get to know them because they come and*

spend their free time here. Furthermore, so I am here every day and that room in there that you were sitting in, that's also for relaxing. So, there's quite a lot of socializing that goes on, which is good. They can have a little sleep on the comfy chairs over there, if they are really tired, and they can also socialize inside the assistive technologies area. We have probably got three or four students on very strong medication, and they get very tired. So, they can either sit in those reclining chairs over there or have a little sleep."

According to a student *"I don't have any issues with the teachers. They are sensitive to your needs" Student C added that, "My teacher, they tell me, come to my office hours and they will discuss with me about my marks and, and they give me their feedback*." Another student added about the attitude of clinic staff, *"People in the clinic are approachable. Yeah. If I am tired or not feeling well, I go to see them. They give me medicine. They say you cannot live in the clinic. Also, they see if you have any emergencies.*"

A Specialist also mentioned about the attitude of some Faculty towards Students of Determination. "*So, there are some Faculty that are very open. They really want you to learn. They want to do their best, but you always will find some Faculty who are not into it because they are not prepared for it. And they don't know how to deal with it*."

5.6.8 Provisions for Examinations:

Most of the necessary arrangements are made for the ease and comfort of SWD's but certain loopholes were pointed out by the students. Questions on the exam paper are simplified and made clear, while still following the curriculum content, to suit the diverse needs of student disabilities. This is the account of a visually impaired student: *"My papers are converted to Braille. I am given extra time to submit my exam. The mode of responding to the exam (written/oral/computer) is also*

altered according to the need of the student. If I do not understand the questions, a prompter is provided to explain to me."

Another student mentioned that, *"We can take an exam in a separate room under staff supervision, but there is not enough space to accommodate all of us. The room becomes noisy.*

One of the students remarked that*, "We can hear each other. It is confusing sometimes. I did my exam in Braille, but it takes a long time. I think it lasted for six hours when every exam lasts for only two hours. In Braille, it is harder because I have to read a lot."* Now, the visually impaired find using digital technology easier than braille.

Another student said*, "They assigned someone to sit with just one Specialist and us," said the candidate who took the Bar exams. "Exam papers are modified in terms of simplifying the questions not the curriculum content and they give extra time for responding to computers."*

One Faculty stated that, "*Some papers are moderated. Like if they are visually impaired, they'll have enlarged the size of what they are reading. Mainly it's just format or time. If they have charts, they would need to be explained."*

The Faculty can request exam accommodations for up to 5 courses. After requests are submitted, they are reviewed and processed by an SAS staff.

5.6.9 Extracurricular Activities:

One of them said, *"We do have field trips to the desert or a park or a university. It's a bit hard for me though to move in those places. They make sure that I am included even if I sit in the car. I am involved with whatever they're doing, I can see."* Care is taken to involve everyone in extracurricular activities.

5.6.10 Counseling and Career Services:

Counseling services are provided for emotional support, and career counseling is provided for finding employment. They co-ordinate with different organizations to ensure job opportunities for University graduates of Determination.

5.6.11 Financial Support:

For all Emiratis, education is free, and they get financial support for equipment and assistive technology. 5% of the student body is international students, and they pay tuition fees. If these students require assistance to purchase equipment, then several philanthropic organizations provide free assistance. NGOs can supply them with computers and other devices. There is also a loan system whereby sponsors provide up to date computers.

5.7 Examples of Identification, Referral Process, Evaluation & Determination of Eligibility:

These are explained with three different kinds of scenarios in which student needs are identified and catered to.

5.7.1 Scenario 1: Faculty referral

In case the Student of Determination encounters social, behavioral, emotional, or academic challenges the Faculty may recognize the Student of Determinations in class and get in touch with the Accessibility Unit staff. The Specialist from the Accessibility Unit arranges for a meeting with the Student of Determination. However, at the university level, it is the Student of Determination's

choice to grab the opportunity of the various provisions provided by the university. Once the Student of Determination agrees, a member of the Accessibility team or counselor from the Counseling unit is assigned by the unit's respective managers. He or she will be primarily responsible for communicating with parents and managing conversations with other members of the inclusive education action team. Before the Specialist sets out to provide intervention, the Student of Determination's level of need is also decided by observation. Faculty member's feedback are also taken into consideration.

The team reviews a Student of Determination's social, emotional, behavioral, academic performance, medical history (if appropriate), and they will conduct a functional assessment. The assessment helps the team to evaluate and determine the eligibility of the level of support requested. The university may conduct a psychological evaluation by an in-house psychologist too.

5.7.2 Scenario 2: Referral by the Admission Officer:

If the Student of Determination discloses his or her disability to the Admission Officer, he/she gathers the essential documentation from the Student of Determination and makes his/her file. The Student of Determination is admitted based on his exam result i.e., the EMSAT. The team from the Accessibility unit organizes a meeting with the Faculty regarding academic support concerns, and then decides the best class placement and support program.

5.7.3 Scenario 3:

Another scenario is that when the team from the Accessibility Unit makes one of their routine visits for observation in the classrooms, they may identify the student who needs special

attention, and arrange a meeting with him/her to discuss this further. The team evaluates needs by conducting assessments with the student's permission. Additional educational services will then be made available based on individual requirements with the Student of Determination's consultation.

5.8 Level of Support for the Students of Determination

5.8.1 Description of Support:

An Individualized Educational Plan (IEP) is formulated for a Student of Determination with Specific Learning Disabilities using the report's information, which touches upon specific, measurable, obtainable, realistic, time-bound smart goals. The IEP goals are primarily focused on skills. The IEP document is then circulated amongst the Faculty members. Support for Students of Determination takes the form of both pull-out sessions and push-in support sessions (depending on the Student of Determination's need and schedule) in the Accessibility unit and classroom. A follow-up meeting is arranged periodically to assess the Student of Determination's progress or to make necessary changes to the IEP. Orientation is provided for the Student of Determination for the newly enrolled student. Workshops are carried out for both students and staff (Appendix) on related topics.

5.8.2 Summarized Account of Accommodations:

These are alterations in how a student accesses information and learning. The changes do not considerably alter the level of instruction, content, or performance benchmarks. Accommodations give the pupil equal opportunities and equal access to learning. The Specialist decides the need for accommodations and documents these in the IEP. Accommodations can consist of changes in the following:

A. Presentation and response format

B. Instructional strategies

C. Time / Scheduling

D. Learning Environment / Setting

E. Architectural modifications

These accommodations permit students to access instructions and help those who are unable to read print due to physical or sensory disability.

- Magnification devices (enlarged computer monitors)
- Spelling and grammar checking devices
- Visual organizers (highlighters, graph paper, color coding)
- Graphic organizers (flowcharts, diagrams, mind maps)
- reformatted course materials provided in a different format according to the need of the Student of Determination (for example, note takers large print, text to speech, speech to text, braille format, and large prints)
- One to one support in the class according to the level of difficulty of the Student of Determination.
- Access to online course materials.

- Faculty members and specialists make themselves accessible for academic support.
- Push in and pull-out sessions by the Specialist
- Remedial courses from the Faculty members
- Counseling sessions

5.8.3 Access to Assessment:

- Extra time for writing exams.
- Due dates for the task are extended.
- Formats of the evaluation are changed (for example, using a computer rather than written presentation).
- Separate seating space for writing exams.
- Scribe (to write as the student dictates)

5.8.4 Instructional Strategies:

These are accommodations that match the learning style of the individual students. Examples of instructional accommodations are:

- Visual cues (printed copy of lessons given to the student such as notes, outlines, written instructions)
- Auditory cues (summarizing or repeating directions)

5.8.5 Description of Support:

- Kinesthetic cues (braille globe) and multi-sensory experiences in the classroom.

5.8.6 Time / Scheduling:

Examples of time/scheduling accommodations are:

- Providing extended time (the IEP team decides exactly how much extra time a student should be given for class assignments, homework, projects, based on the disability
- Providing multiple or regular breaks (assignments broken into sections or made shorter)
- Alter schedule or order of activities (utilizing peak performance time if the student is on medication, or if the concentration is low at specific times of the day: the move to plan complicated classes first).

5.8.7 Learning Environment / Setting:

Accommodations to the learning environment may include changing the location in which the student with disabilities gets instruction or assessment.

- Easily distracted students, students with physical disabilities, or students with health impairments might require accommodations: Examples of learning environment/setting accommodations provided are:
- Decreasing distractions to the student (e.g., putting students in front of the class)
- Decreasing distractions to other students (e.g., using study carrels if the student needs to speak aloud or utilize noisy equipment)

- Change location to increase access (e.g., change the place of instruction for the student in a wheelchair and visually impaired)
- Other adjustments can be made (e.g., lighting, temperature or ventilation may need to be checked for students of visual impairments, severe health disabilities).

5.8.8 Architecture:

These accommodations are structural and require planning to ensure access and comfort. Examples of architectural accommodations are:

- Installation of a lift for students with physical disabilities
- Broader doorways for entry
- wheelchair ramps
- room signage
- Visual emergency alarm systems.

5.8.9 Financial support:

- Fees exemption for Emiratis
- Loans provided for buying Assistive Technology devices

The university is providing all these accommodations to increase the accessibility of "barrier-free" learning environments for Student of Determination and thus support increased inclusion.

5.9 Limitations of the Study:

It is not possible to generalize from a study conducted on a very small sample of the total population of Students of Determination, Faculty, and Specialists. The main reason for this was that the researcher could only conduct the survey and interviews at the Dubai campus, and not the Abu Dhabi campus, due to the unprecedented COVID 19 pandemic. Abu Dhabi was on a strict lockdown, and the permission to interview there was not given.

Furthermore, no observations could be witnessed in classroom practice, as permission for this was also refused to the researcher by the University's Ethics Board. Furthermore, A study like this should be conducted over an extended period of time and a number of times for a comparative analysis so as to arrive at firm, reliable data. A couple of universities approached by the researcher refused to provide ethical clearance for the study due to the fact that the respondents fell under the category of 'high-risk'. Another reason given by one of the university did not want to be compared to other universities.

As mentioned earlier, due to the COVID scenario, the researcher was unable to survey the co-ed campus of this Federal University. The researcher was able to interview the Faculty and Specialists, but since permission to have direct contacts with the Students of Determination online was not given, they could not be included in the survey.

Nevertheless, it is important to carry out such research to inform policy and to make it possible for inclusion to become more prevalent at the University level in UAE or other countries.

5.10 Future Research:

To have the practice of inclusion be tested and firmly established at the University level a large-scale study needs to be conducted at not just the sample University, but also a few other universities who may have started including inclusion amongst their policies in the future. In such

studies, the involvement of a larger number of students and staff over some time to gauge the outcome in terms of progress and achievements may also be recorded, along with the life journeys of the alumni Students of Determination who graduated from there. Furthermore, researches such as this one, and other variations including cultural aspects may also be done on other universities across the Gulf States and the MENA region, where these practices are being initiated, in order to inform best practices and form policies.

5.11 Linking the Quantitative and Qualitative Research:

It is evident from the details presented above, from the perspective of the two methods of research in both tabular and descriptive form, including the statements of practitioners and beneficiaries about their experiences at the university, that the results concur and overlap except in the case of some stray positive statements by students wherein it seems they are simply trying to appease the administration for having granted them placement here. The evidence proves the presence of inclusive practices present at the Federal University. This is yet a rudimentary form of inclusive practice for the two important pillars of inclusive education/curriculum modification and diverse assessments, are missing from the equation due to a serious lack of training at the level of the faculties which should ideally be made mandatory in the years to follow.

5.12 Recommendations:

The recommendations are based on my experience dealing with SWD's as a Special Education Teacher at a reputed primary and secondary school in Dubai, and are relevant to the findings of my research study. While inclusion has become a catchword in practice, some loopholes need serious attention.

The apriority factor to attend to is accepting disability as a facet of diversity by the individual at the grass root level and by society at large, and hence to realize that the disabled are at par with all in the sphere of rights, honor, and dignity. A positive, healthy attitude in the individual builds up self-worth, confidence, motivation, and perseverance- qualities needed to achieve higher aspirations.

Inclusion is internationally recognized as a civilizing force. It is only rejected by those who wish to stubbornly hold on to their pinnacle of privilege, those who have not yet mastered the art of it and are stuck in their old ways, or the truly ignorant. The philosophy of inclusion has been wholeheartedly embraced. The stigma present in cultures has to be dispelled through a national and international dialogue using the various media outlets- for inclusion is truly a right and not a privilege for a select few.

For inclusive education policies, whether at the national or institutional level, to become an established norm, the transformation required is enormous. Hence, it must be afforded a duration of time to materialize. Patience and a flexible approach are required initially for understanding and experimentation to take its due course. It would be true to claim that at the HE level at present, inclusive educational policies are almost non-existent.

Policies cannot be general statements but need to be clear, and should include specific details. The letter of the law would need to be firmly established once the probationary period is over, and the consequences of breach of service of the required code must also be mentioned.

However, for the above to happen, all of the pre-requisites for inclusive education would need to be complied with: a) the required training for faculty and support staff, b) adequate and cost-effective resources, and c) curriculum and assessments modification for diverse needs.

Transformation requires a charismatic, committed, enthusiastic leadership role with a burning zeal for inclusive education that catches on and spreads through the institution like a lit flame. A collaborative chain of service is needed crossing the boundaries of institutions, nations, and races, to make the movement truly successful. Seminars, webinars, practical workshops, sharing of materials and expertise by visits to lecture halls displaying inclusion, providing advisory services is the way ahead.

Empty claims of inclusion are to be rejected, for the road ahead to it lies in sincere intentions and persistent hard work. The two pillars of this change - curriculum and assessment require mounds of earnest ongoing research. The UDL principles need to be the starting point for this.

Supervision and monitoring at regular intervals need to be an integral part of institutions to guide them to the path of continued progress. Earnest research also needs to be carried out for other universities in the region- to study existing provisions for inclusive education and prepare feasibility plans for the future. Institutions need to have permission in the system to openly permit researchers to do their research unhindered.

In my study of Disability Models, the application of the Bio-Ecological Model with its Micro, Meso, Chrono, and Exo systems appeared to be a comprehensive means for getting insight into the workings of an entire institution.

To reinstate, inclusion will be a success with clear policies and guidelines, appropriate training, genuine enthusiasm and communication, cooperation, and collaboration at all levels. For

us as human, equity as a principle, pre-dates to centuries ago as compared to the current universal declarations made by world organizations. We need to connect to our rich cultural heritage and truly revive this honorable principle.

5.13 Conclusion:

There is a plethora of information about the subject of inclusive education today as the move to recognize equal opportunities for those with disabilities and its importance for all, has become a global voice now. It has been a welcome humane move, as it does away at least in principle, with the discrimination of a particular group. It has been a positive step.

This study focused on the challenges faced and the current level of satisfaction among the Students of Determination in utilizing the provisions offered by the sample university. Additionally, it concentrated on the barriers encountered by the Faculty members and Specialists in providing the interventions for the Students of Determination and multiple factors that determine the success or failure of inclusion for students of Determination in higher education. It is the researchers hope that the sample Federal university shall be a role model for other universities in the UAE with its Inclusion Policy in place, to uphold the rights of Students of Determination. It has an open-door policy and pledges to grant the Students of Determination equal and fair rights. There is a convenient Accessibility Unit carrying out multiple functions for the support and assistance of Students of Determination at the University. However, the Federal University is one of the universities catering to the needs of Students of Determination and it is in its initial stage of inclusion. It should develop to provide an encouraging example for other institutions of HE to replicate the process. The Accessibility Unit leads in providing Support services for Students of Determination, focusing on providing personal assistance to overcome

institutional barriers as the institution is still a long way from being truly inclusive. The students need to be heard as Dutta et al., 2009; claimed; '...the voices of people with disabilities themselves are rarely heard and much of the research thus far has proven to be both inadequate and inequitable.' Student responses revealed obstacles and gaps between policy and practice, which need to be looked into seriously by policy-makers. Access for some to the physical environment and to the curriculum without modifications as well as delayed delivery of materials in accessible formats caused hindrances. The most urgent and central problem inclusion faces in this university, and in the researcher's view- a mammoth task- is the faculty's lack of training for inclusion.

Students of Determination are a diverse group with varied impairments. While some might be able to take the challenges of high-level academic choices, others would fare better with vocational courses. The gifted need their potential to be recognized and developed.

Possibly the question needs to be posited as well about whether the policies of 'inclusion' can be applied wholesale right across the board, for those with the severest disabilities that do need specific attention and which in a regular setting might be difficult to achieve and may also affect general progress. This is what has been partially referred to by (Calculator 2009) regarding students with grave to profound intellectual disabilities and associated challenges with adaptive behaviors, including communication, that they require comparatively high levels of support from family, educators, related service providers, classmates, and others, to be efficiently included in general education classrooms, alongside meeting the needs of daily living and enjoying the most excellent possible quality of life. Those with severe disabilities need tailored down versions of the curriculum to meet individual needs and general education, and some will still need specific help in a unique setting. Life and social skills training and counseling for attitude reforms should continue.

For further research the researcher recognizes and would recommend as a comprehensive framework, the Bio-ecological theoretical model, as it has the possibilities of depicting all the systems involved and is built on the premise of close-knit linkage between them. This will help to create more clarity regarding each tier, and assist in leading cultural change amongst the general public, administrators, faculty, and the Students of Determination themselves. It may also help in providing the much-needed opportunities for this marginalized group and prepare them for the next tier- the work place - to the best of their potential, as the right to a rich and fully self-actualized quality of life is not the reserve of the few, but the inalienable right of all.

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APPENDICES

CONSENT FORM FOR FACULTY

You are invited to participate in the research project entitled, "Investigation of Provision of Services to Students of Determination in the Federal Higher Education Institute in the UAE"

Investigator: Farhana Nadeem
Supervisor: Professor Eman Gaad
Study-Related phone number of the Researcher: 0508412181

Purpose of the research:

Students of Determination face multiple challenges in classes that need accommodations if they are to be actively engaged in learning and receiving the same experiences as their peers. However, providing appropriate instructions to Students of Determination can be challenging for the educators (Fatkullina, Morozkina, and Suleimanova 2015). Although there is a plenty of literature on education for Students of Determination existing internationally, there is little awareness regarding this problem in higher education settings in the UAE. The purpose of this study is to explore the barriers encountered to learning that affect the experiences of the Students of Determination, in accessing higher education and thedisabilitiesews of stakeholders on the inclusion policy, services and facilities for the Students of Determination in the Federal Institution of UAE.

Why is this study needed?

- There is a rise in the enrolment number of Students of Determination in higher education institutions.
- The researcher could find only two found relevent studies on this subject from UAE's context. Thus this study will throw more light to our understanding of the situation in UAE's context.
- The present study is an attempt to explore the problem of Students of Determination, their experiences, and also to propose implications to their problem.

- Finally, the policy makers could use this study to develop government policies that promote better institutional services and facilities to assist Students of Determination in higher education, especially at University level.

How will I be helping the researcher?I will be completing the Faculty questionnaire and participating in an interview of 40 minutes. The interview will take place in the University's campus at a time and place convenient to me and audio recorded so that it can later be transcribed for data analysis.

Permission to record: Tick the appropriate option box

☐ I do give permission to be audio recorded during this research procedure.

☐ I do not give permission to be audio recorded during this research procedure.

Confidentiality, Anonymity and storage of data.

With regards to the confidentiality and/or anonymity of the study, the researcher will ensure that the name of the university and participants will not appear in the thesis or any other publication related to this study. The information collected will be used only for the purpose of this research. The interview would be arranged at a time and place that is convenient to the participant's schedule. The researcher assures that a copy of thesis will be shared with the research unit of your University after the submission to the researcher's University in UAE. The audio recording and the data will be confidentially stored with a password lock in the researcher's computer

Informed Consent

- I have had time to think about participating in the research project and had the opportunity to ask questions and have those questions answered to my satisfaction.
- I understand that participating in the project is entirely voluntary and that I may end my participation at any time without any penalty or negative consequences.
- With regards to the confidentiality and/or anonymity of the study, the researcher will ensure that the name of the university and participants will not appear in the thesis or any other publication related to this study.
- Information about the research study has been explained by the researcher and understood by me.

I agree to acknowledge this informed consent form with my signature and date.

SIGNATURE SECTION

Name of Participant _____

Signature/ Date _____

APPENDIX A

FACULTY – QUESTIONNAIRE

1. Designation: _____
2. Age: _____
3. Gender: _____
4. Nationality: _____
5. Subjects taught: _____
6. Years of teaching experience: _____
7. How many Students of Determination are you handling currently? _____
8. You came to know of services provided by the University to Students of Determination through:

    a. Determination/Accessibility Unit ☐
    b. Counsellor ☐
    c. University website ☐
    d. Other students ☐
    e. Brochures ☐
    f. Majors Day/Orientation ☐
    g. Other sources ☐

If the provisions are not available, how do you overcome the concerned barrier?

9. Avail of the facilities ☐
10. Manage on my own ☐
11. Approach the disability unit ☐
12. Approach the Faculty ☐
13. Approach both determination unit and Faculty ☐

Please specify for the following questions

SD - Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable

SECTION 1

1. Rate your opinion about **University's approach to Students of Determination**in **Application, Admission and Interview stage***(Please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	There are restrictions for Students of Determination when applying for admission at the university.						
2.	University is easily accessible for seeking admission and completing the process.						
3.	There are tailor made versions of the admissions test to suit the needs of Students of Determination.						
4.	Personal interest of the Student of Determination is a big influence in choosing their course.						
5.	The University offers various courses which are not offered in other Universities for Students of Determination.						
6.	The University conducts special pre-placement training for Students of Determination.						

SECTION 2

2. Rate your opinion on the **Provisions provided by the Accessibility/disability Unit at your University.** *(Please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	University has a dedicated unit/unit for meeting the objectives for Students of Determination.						
2.	The university has sufficient number of staff (disability advisor/coordinators and other support staff) in the unit to meet the demands of the Students of Determination.						
3.	The staff (disability advisor/coordinators) in the accessibility unit are trained to support Students of Determination.						

4.	The disability advisor/coordinator makes sure (with the students' permission) accommodations and recommends the right and effective academic adjustments, assistive technology training, transportation, library assistance and other services.						
5.	The disability advisor/coordinators hosts seminars and informal meetings, or speak with Faculty/instructors about accommodating students' disabilities in classrooms.						
6.	The disability advisor/ coordinators act as a resource to coordinate and facilitate improvement of physical access and assist in the planning and execution of accommodations.						
7.	The present resources adequately addresses the needs of the Students of Determination.						
8.	Staff in the University are sensitive and responsive when attending to needs of the students.						
9.	The University has a clear and transparent Inclusion Policy for addressing the needs of Students of Determination.						
10.	The Unit/Unit has a Handbook on the policies and procedures for reference which is available to all the stakeholders.						
11.	The University arranges for on-campus and/or off-campus training on life skills for Students of Determination.						
12.	The University offers counseling services for Students of Determination.						
13.	The performance of this University in providing provisions is satisfactory.						

SECTION 3

3. Rate your opinion on the **Academic Services provided by the University.** *(Please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	The Faculty is knowledgeable of disabilities, accommodation, technology and other related issues to meet the requirements of Students of Determination.						

2.	Faculty in the University are sensitive and responsive when attending to needs of the Students of Determination.						
3.	The Faculty is well aware of special requirements to be given to the Students of Determination.						
4.	The contents of the course followed by the Students of Determination is adjustable/modified when required.						
5.	Lectures PPT's are given for reference after the session.						
6.	The Students of Determination are able to follow classroom teaching without any difficulty.						
7.	Students can choose/substitute modules when they cannot study current module due their disability.						
8.	Students of Determination are provided with their IEP (Individualized Educational Plan).						
9.	Students of Determination are allowed to set a flexible time frame for his or her studies.						
10.	Work load is reduced for Students of Determination if required.						
11.	University provides assistive technology whenever needed for Students of Determination						
12.	Staff are trained to support the students using assistive technology.						
13.	Students of Determination have the possibility of personal assistant (Learning Support Assistant) to facilitate their learning.						
14.	The university provides extra academic support classes for the Students of Determination.						
15.	I find that Students of Determination do not use all of the accommodation for which they are eligible for.						
16.	Some students take undue advantage of their accommodation.						
17.	Effectiveness of accommodations is monitored regularly.						
18.	Accessibility of exam papers are moderated according to the student's needs.						
19.	Additional time is given when needed (assignments /exams)						
20.	Written exams are replaced with an oral exam ordisabilitiesce versa when required.						
21.	Scribes are provided to write the exams if needed.						
22.	Alternative evaluation is available, if needed.						
23.	Career services are provided in finding employment.						
24.	Counseling services are provided for emotional support						
23.	The Disability Unit supports students for internship placements.						

SECTION 4

4. Rate your opinion on **financial support provided by the University** (*please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	The Faculty gets financial support to attend training/workshop to acquire/update knowledge to support Students of Determination.						

SECTION 5

5. Rate your opinion on **relationship with Students of Determination and rest of the Faculty in the University** (Please tick one option for each row).

S.N.	Statement	SD	D	N	A	SA	N/A
1.	Faculty collaborations with students, Faculty, staff, and the campus community for the full inclusion of People with Determination.						
2.	The Faculty get adequate support from the Faculty and other unit to ensure the removal of existing barrier for full inclusion.						
3.	Faculty encourages and motivates Faculty guidance in showcasing the balance between accommodating Students of Determination and preserving academic standards.						
4.	Faculty provide a welcoming and encouraging environment for Students of Determination for equal access and full participation.						
5.	Communication interaction is limited between the Faculty and students because of language barrier.						
6.	You are able to obtain assistance from other students without disabilities to help out Students of Determination when required.						
7.	Faculty's effort are valued by the Disability advisor/ coordinator to ensure that Students of Determination have equal and fair access to University curriculum.						
8.	It is imperative to instill awareness on issues faced by Students of Determination among staff and also among students without disabilities in the university.						
9.	On campus activities are planned to provide adequate opportunities to student with determination to mingle with students without disabilities to develop social skills.						

SECTION 6

6. Rate your opinion on **the Infrastructure access on campus for Students of Determination** *(please tick one option in each row).*

S. N	Infrastructure	SD	D	N	A	SA	N/A
A	**Campus**						
1	Approaches and pathways to building						
2	**Entrance to the building**						
3	**Corridors**						
4	**Office counters**						

5	**Classroom**						
6	Laboratories						
7	Seating arrangements						
8	**Library facilities**						
9	**Prayer room**						
10	**Canteen**						
11	**Water Dispensers easily accessible**						
12	**Toilet**						
13	Parking						
14	**Auditorium**						
15	Recreational areas						
16	Clinics						
17	Transportation to and from University						
18	Recreational facilities						
B	**Hostel**						
19	Room						
20	Furniture						
21	Dining Hall						
22	Toilets						
23	Recreation						

7. What needs are being addressed successfully?

_____

_____

8. What needs are not being addressed adequately? And why?

_____

_____

9. What are the key challenges faced in providing provisions for Students of Determination?

_____

_____

10. What are the improvements you would like to bring in your services?

_____

_____

APPENDIX A

HEAD OF ACCESSIBILITY UNIT/SPECIALIST– QUESTIONNAIRE

1. Age _____
2. Gender _____
3. Nationality _____
4. Number of students on roll _____
5. Number of Students of Determination _____

6. Which of these are your responsibilities? *(can tick more than one)*
   - Academic Accommodations like note-taking, extended time for tests ☐
   - Physical Accommodations ☐
   - Academic Advice ☐
   - Individual Counselling Support ☐
   - Advocacy/liaison with instructors ☐
   - Others: specify ☐

7. How do Students of Determination come to know of services provided by the University :
   - Determination/accessibility unit ☐
   - Counsellor ☐
   - University website ☐
   - Other students ☐
   - Brochures ☐
   - Other sources ☐
   - Majors day/Orientation ☐
   - Others specify

Please specify for the following questions

SD- Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA - Strongly Agree, N/A – Non-Applicable

SECTION 1

1. Rate your opinion about **University's approach to Students of Determination** in **Application, Admission and Interview stage***(Please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	There are restrictions for Students of Determination when applying for admission at the university						
2.	University is easily accessible for seeking admission and completing the process						
3.	There are tailor made versions of the admissions test to suit the needs of Students of Determination.						
4.	Personal interest of the Student of Determination is a big influence in choosing their course.						
5.	The University offers various courses which are not offered in other Universities for Students of Determination.						
6.	The University conducts special pre-placement training for Students of Determination.						

SECTION 2

2. Rate your opinion on the provisions provided by the **Accessibility/ Unit for Students of Determination at your university**. *(Please tick one option for each row).*

Please specify for the following questions

SD- Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA - Strongly Agree, N/A – Non-Applicable

S.N	Statement	SD	D	N	A	SA	N/A
1.	University has a dedicated unit/unit for meeting the objectives for Students of Determination.						
2.	The university has sufficient number of staff in the unit to meet the demands of the Students of Determination.						
3.	The disability advisor/coordinators provide (with the students' permission) accommodations, and recommend the right and effective academic adjustments, assistive technology training, transportation, library assistance and other services for Students of Determination.						

4.	The disability advisor/coordinators hosts seminars and informal meetings, or speak with Faculty/instructors about accommodating students' disabilities in classrooms.						
5.	The disability advisor/ coordinators act as a resource to coordinate and facilitate improvement of physical access; and assist in the planning and execution of accommodations						
6.	The staff (disability advisor/coordinators) in the accessibility unit are trained to support Students of Determination						
7.	The present resources adequately addresses the needs of the Student of Determination.						
8.	Staff in the University are sensitive and responsive when attending to needs of the students.						
9.	The University has a clear and transparent Inclusion Policy for addressing the needs of Students of Determination.						
10.	The Unit/Unit has a Handbook on the policies and procedures for reference which is available to all the stakeholders.						
11.	The University arranges on-campus and/or off-campus training on life skills for Students of Determination.						
12.	The University offers counseling services for Students of Determination.						
13.	The performance of this University in providing provisions is satisfactory.						

SECTION 3

3. Rate your opinion on the **Academic Services Provided by the University.** *(Please tick one option for each row).*

Please specify for the following questions

SD- Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA - Strongly Agree, N/A – Non-Applicable

S.N	Statement	SD	D	N	A	SA	N/A

1.	The Faculty is knowledgeable of disabilities, accommodation, technology and other related issues to meet requirements of Students of Determination.						
2.	Faculty in the University are sensitive and responsive when attending to the needs of the students.						
3.	The Faculty is well aware of special requirements to be given to the Students of Determination.						
4.	The contents of the course followed by the Students of Determination is adjustable/modified when required.						
5.	Lectures PPT's are given after the session.						
6.	The Students of Determination are able to follow classroom teaching without difficulty.						
7.	Students can choose/substitute modules when they cannot study current module due to their disability.						
8.	Students of Determination are provided with their IEP (Individualized Educational Plan).						
9.	Students of Determination are allowed to set a flexible time frame for his or her studies.						
10.	Work load is reduced for Students of Determination.						
11.	University provides assistive technology whenever needed for Students of Determination.						
12.	Staff are trained to support the students using assistive technology.						
13.	Students of Determination have the possibility of personal assistant (LSA)) to facilitate their learning.						
14.	The university provides extra academic support the Student of Determination.						
15.	I find that Students of Determination do not use all of the accommodation for which they are eligible for.						
16.	Some students take undue advantage of their accommodation provided.						
17.	Effectiveness of accommodations is monitored regularly.						
18.	Exam papers are modified according to the student's needs and difficulties.						
19.	Additional time is given when needed (assignments / exams)						
20.	Written exam are replaced with an oral exam ordisabilitiesce versa when required.						
21.	Scribes are provided to write the exams if needed.						
22.	Alternative evaluations is available if needed.						
23.	Career services are provided in finding employment.						
24.	Counseling services are provided for emotional support.						

25.	The Disability Unit supports students for internship placements.						

SECTION 4

4. Rate your opinion on **financial support provided by the University** (*please tick one option for each row).*

Please specify for the following questions

SD- Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA - Strongly Agree, N/A – Non-Applicable

S.N	Statement	SD	D	N	A	SA	N/A
1.	University offers waivers in tuition fees to support Students of Determination						
3.	University help in overcoming financial needs for Student of Determination is satisfactory.						
4.	University provides financial help for equipment and assistive technology						

SECTION 5

5. Rate your opinion on **relationship with students and Faculty in the University** (please tick one option for each row).

Please specify for the following questions

SD- Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA - Strongly Agree, N/A – Non-Applicable

S.N.	Statement	SD	D	N	A	SA	N/A
1.	Disability coordinator/advisor collaborates with students, Faculty, staff, and the campus community for the full inclusion of People of Determination.						
2.	The disability unit get adequate support from the Faculty and other unit to ensure the removal of existing barrier for full inclusion.						
3.	Disability advisor/ coordinators encourages and motivates Faculty guidance in showcasing the balance between accommodating Students of Determination and preserving academic standards.						
4.	Disability unit ensures in provides a welcoming and encouraging environment for Students of Determination for equal access and full participation.						
5.	Communication interaction is limited between the Faculty and students because of language barrier.						

6.	Disability advisor/ coordinators efforts are valued by the Faculty to ensure that Students of Determination have equal and fair access to University curriculum.						
7.	It is imperative to instill awareness on issues faced by Students of Determination among staff and also among students without disabilities in the university.						
8.	On campus activities are planned to provide adequate opportunities to Student of Determination to mingle with students without disabilities to develop social skills.						

SECTION 6

6. Rate your opinion on **the infrastructure access on campus to Student of Determination** *(please tick one option in each row).*

Please specify for the following questions

SD- Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA - Strongly Agree, N/A – Non-Applicable

S. N	Infrastructure	SD	D	N	A	SA	N/A
A	**Campus**						
1	Approaches and pathways to building						
2	**Entrance to the building**						
3	**Corridors**						
4	**Office counters**						
5	**Classroom**						
6	Laboratories						
7	Seating arrangements						
8	**Library facilities**						
9	**Prayer room**						
10	**Canteen**						
11	Water Dispensers easily accessible						
12	**Toilet**						
13	Parking						
14	**Auditorium**						
15	Recreational areas						
16	Clinics						
17	Transportation to and from University						
18	Recreational facilities						
B	**Hostel**						

19	Room						
20	Furniture						
21	Dining Hall						
22	Toilets						
23	Recreation						

7. What needs are being addressed successfully?

_____

_____

8. What needs are not being addressed adequately? And why?

_____

_____

8. What are the key challenges faced in providing provisions for Students of Determination?

_____

_____

9. What are the improvements you would like to see in your services?

_____

_____

APPENDIX A

STUDENT QUESTIONNAIRE

7. Age: _____
8. Gender: _____
9. Nationality: _____
10. University Name: _____
11. Degree pursuing: _____
12. Major chosen: _____
13. Current Year/Semester: _____
14. Full Time or Part Time course: _____
15. Nature of Disability:
    - Visual ☐
    - Hearing ☐
    - Speech ☐
    - Learning Disability ☐
    - Orthopedic ☐
    - Others ☐

16. Your disability is: ____ Mild ____ Moderate ___ Severe
17. Type of school attended: ____ Regular ____ School for Special Needs
18. Residence: ____ At home ____ Hostel ___ Other

You came to know of services provided by the University to Students of Determination through:

- Accessibility unit/Disability unit ☐
- Counsellor ☐
- University website ☐
- Other students ☐
- Brochures ☐
- Majors Day/Orientation ☐
- Other sources

19. If the provisions are not available, how do you overcome the concerned barrier?

- Manage on my own ☐
- Approached the Accessibility unit /Disability unit ☐
- Approached the Faculty ☐
- Approached both accessibility unit and Faculty ☐

20. I disclosed my disability during the admission process. Yes _____ No_____

21. Write the names of the assistive technology you use?

a) _____

b) _____

c) _____

d) _____

e) N/A

Please specify for the following questions **SD- Strongly Disagree, D – Disagree, N- Neutral, A – Agree, SA Strongly Agree, N/A – Non-Applicable**

SECTION 1

1. Rate your opinion about **University's approach to Students of Determination**in **Application, Admission and Interview stage***(Please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	University is easily accessible for seeking admission.						
2.	Students of Determination give entrance exam for admission.						
3.	There is a tailor made version of the entrance exam to suit your needs.						
4.	The University offers various courses according to your needs which are not offered in other Universities.						
5.	The University conducts special orientation/induction before the beginning of the semester.						

SECTION 2

2. Rate your opinion on the services provided by the **Accessibility/Disability unit at your university**. *(Please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	University has a dedicated unit/unit for meeting your needs.						
2.	The University has a clear and transparent inclusion policy for addressing needs of Students of Determination.						
3.	The disability advisor/coordinators ensure (with the students' permission) accommodations, and recommend the right and effective academic adjustments, assistive technology training, transportation, library assistance and other services for Students of Determination.						
4.	Disability coordinator/advisor collaborates with students, Faculty, staff, and the campus community to deliver information regarding relevant matters for the full inclusion of Students of Determination.						
5	The quality of provisions provided by the university for you is adequate which helped me achieve my success in the university.						

SECTION 3

3. Rate your opinion on the **AcademicServices Provided by the University.** *(Please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	Faculty ensure (with the students' permission) for accommodations, and recommend the right and effective academic adjustments.						
2.	Disability Specialist are sensitive and responsive when attending to my needs.						
3.	Faculty in the University are sensitive and responsive when attending to my needs.						
4.	I am allowed to substitute course/module if not able to manage.						
5.	The contents of the course are modified as per my ability.						
	The contents of the course are modified as per my ability.						
6.	Students of Determination are provided with their IEP (individualized educational plan).						
7.	I am provided with adequate academic accommodations for my needs.						

8.	Lectures summaries are given through copies of lecture notes /copies of presentations or lecture recording.						
9.	Staff in the accessibility unit are trained to support the students using assistive technology.						
10.	The university provides extra support classes to the Student of Determination.						
11.	Exam papers are modified according to the student's needs and difficulties.						
12.	I am given extra time to submit my assignment/Exam if needed.						
13.	The mode of responding to the exam (written/oral/computer) is changed according to my need.						
14.	Scribes/prompter are provided during the exams if needed.						
15.	I am allowed take an exam in a separate room under the supervision of a staff.						
16.	The Faculty take into consideration the impact of disability that may have had on your written work (applicable for students with Learning disability)						
17.	Career services are provided in finding employment.						
18.	Counseling services are provided for emotional support						
19.	Students with Determination have the possibility of personal assistant (Learning Support Assistant) to facilitate their learning.						
20.	Overall, the performance of this university in providing accommodation or modification is effective to you as student.						

SECTION 4

4. Rate your opinion on **financial support provided by the University** (*please tick one option for each row).*

S.N	Statement	SD	D	N	A	SA	N/A
1.	University offers waivers in tuition fees.						
2.	University provides scholarship for eligible students.						
3.	University provides financial help for equipment's and assistive technology						

SECTION 5

5. Rate your opinion on **relationship with peers and Faculty in the University***(Please tick one option for each row).*

S.N.	Statement	SD	D	N	A	SA	N/A
1.	I feel alienated when I am in the company of students with no disabilities.						
2.	I am comfortable interacting only with Students of Determination in the campus.						

3.	I am able to obtain assistance from other students with no disabilities whenever required						
4.	The university provides me with a welcoming and encouraging environment for equal access and full participation.						
5.	The Faculty are sensitive to the needs of the Students of Determination.						
6.	Communication interaction is limited between me and the Faculty/Staff because of language barrier.						
7.	It is imperative to instill awareness on issues faced by students with determination among students with no disabilities in the university.						
8.	It is imperative to instill awareness on issues faced by students with disabilities among Faculty in the university.						
	It is imperative to instill awareness on issues faced by students with disabilities among Faculty.						
9.	My opinion is taken into consideration by disability advisor/staff on relevant matters.						
10.	On campus activities are planned to provide adequate opportunities to Student of Determination to mingle with students without disabilities to develop social skills.						

SECTION 6

6. Rate your opinion on the **amenities in the University for Students of Determination** *(please tick one option in each row).*

S. N	Infrastructure	SD	D	N	A	SA	N/A
A	**Campus**						
1.	Approaches and pathways to building						
2.	**Entrance to the building**						
3.	**Corridors**						
4.	**Office counters**						
5.	**Classroom**						
6.	Laboratories						
7.	Seating arrangements						
8.	**Library facilities**						
9.	**Prayer room**						
10.	**Canteen**						
11.	Drinking water (taps easy to handle and reach)						
12.	**Toilet**						
13.	Parking						

14.	**Auditorium**						
15.	Play ground						
16.	Clinics						
17.	Transportation within University						
18.	Recreational facilities						
B	**Hostel**						
19.	Room						
20.	Furniture						
21.	Dining Hall						
22.	Toilets						
23.	Recreation						

7. What needs are being addressed successfully by the university?

_____

_____

8. What needs are not being addressed adequately by the university? And why?

_____

_____

9. What are the key challenges faced in the availing the provision provided by the university?

_____

_____

10. What are the improvements you would like see in your services?

_____

_____

APPENDIX 1 (STUDENT FOCUS GROUP INTERVIEW)

- What field of study are you specializing in?
- Which year did you start your course in this University?
- Is any special training provided to Students with Determination by the University? If Yes, can you name them?
- Is your University equipped with proper infrastructure to assist your movement in the campus independently? Please explain
- Can you list the main services for SWD you can avail in your University?

- Who is the person Incharge responsible for taking care of the special needs of a SWD. ?
- Do you feel your university treats you any differently from the other students because of your disabilities?
- Are you aware of the Federal Law No. (29) of the Year 2006 regarding the rights of Persons with Disabilities in the UAE?
- What are the main challenges you face in your lectures or classes?
- Are the faculty sensitive to your needs and aware of the difficulties you face?
- What are the main concerns of your relationship with the staff of the University?
- What are the main concerns of your relationship with the staff of the University?
- What are the emotions you face when you ask for help when you need it?
- What are the problems you face to access the library?
- What are the problems you face in preparing for your assignments?
- What are the problems you face in preparation and giving your examinations?
- What are the main problems you face while using the study area?
- Are you easily able to access your University's Website for any information? If no, what are the difficulties?
- What are the different assistive technology you use to help you in coping with your course studies?
- Can you please tell us whether the provisions offered in your university is enough to meet your special needs?
- How can your University solve the challenges you face in regards to studies and other matters?
- What is the reason for choosing this university to study?
- Please tell us about the type of accommodations your university provides you in your study materials.
- Does your family members support you at all times to cope with your challenges in University and at home?
- Has there been a situation where you had to contact other organization for your study and financial support?
- When you enrolled in this university what were you expecting in terms of support studies and were these expectations fulfilled during the course of your study?

APPENDIX 2 (FACULTY INTERVIEW QUESTIONS)

- Which field of studies are you specialized in?
- What is your job profile in the University?
- During your teaching career, how many SWD have you taught?
- Can you tell us as to what is the level of support services that SWD need at the university level?
- Are you also qualified with any special training to teach SWD.
- Having SWD in your class can add a lot of pressure. Do you agree with this? Why? Why not?

- Give us your opinion about the educational capabilities of SWD as compared to students with no disabilities?
- What are your thoughts on the Federal Law No. 29 concerning the rights of Persons with Disabilities in the UAE.
- What are the general/basic provisions offered to SWD in your University?
- What are the modifications in the lectures/study material you make to cover the special needs of SWD?
- What are the various ways your University supports you to make your teaching experience to SWD worthwhile?
- What are the various accommodations and modifications you offer to SWD?
- In your capacity as a lecturer in educating SWD, what are your main challenges?
- What are the challenges a SWD faces in your University?
- How satisfied are you with the support services provided to SWD in your university?
- How can your university improve the level and quality of provision for SWD?

APPENDIX 3 (HEAD OF INCLUSION INTERVIEW QUESTIONS)

- Which field of studies are you specialized in?
- What is your job profile in the University?
- How long have you been working in this area of education?
- Could you please shed some light on the educational policy for Students with Determination generally in your institution?
- Are you familiar with the Federal Law No. (29) of the year 2006 concerning the rights of Persons with Disabilities in the UAE?
- How has this law on educational policy relating to Students with Determination effected the UAE Higher Education Sector?
- Is your University having a disability department?
- Are the Students with Determination offered financial support by the University? If yes what kind of support?
- Do you think Universities have a responsibility to admit and accommodate Students with Determination?
- To provide more support for Students with Determination in future, what are the strategies your institution is working on?
- Can you give us your evaluation on the educational policy for Students with Determination in the UAE Higher Education System?
- Can you evaluate the level of provision for Students with Determination in the UAE Higher Education System?
- Give us your recommendations (for Ministry of Higher Education) on how to improve the support services for Students with Determination.
- Give us your recommendations on how to improve the support services for SWD in the Universities in UAE

CONSENT FORM FOR HEAD/ COORDINATOR OF ACCESSIBILTY UNIT

You are invited to participate in the research project entitled, “Investigation of Provision of Services to Students with Determination in the Federal Higher Education Institute in the UAE”

Investigator: Farhana Nadeem
Supervisor: Professor Eman Gaad
Study-Related phone number of the Researcher: 0508412181

Purpose of the research:

Students of Determination face multiple challenges in classes that need accommodations if they are to be actively engaged in learning and receive the same experiences as their peers. However, providing appropriate instructions to Students of Determination can be challenging for the educators (Fatkullina, Morozkina, and Suleimanova 2015). Although there is plenty of literature on education for Students of Determination existing internationally, there is little awareness regarding this problem in higher education settings in the UAE. The purpose of this study is to explore the barriers encountered to learning that affect the experiences of the Students of Determination, in accessing higher education and the disabilitiesews of stakeholders on the inclusion policy, services and facilities and utility perspective among the students with determination in the Federal Institutions of the UAE.

Why is this study needed?

- There is a rise in the enrolment number of Students of Determination in higher education institutions.
- The researcher could hardly find relevant (only two found) studies on this subject from UAE’s context. Thus this study will throw more light on our understanding of the situation in UAE’s context.
- The present study is an attempt to explore the problem focused by Students of Determination their experiences.
- Finally, the policy makers could use this study to develop government policies that promote better institutional services and facilities to assist Students of Determination in higher education, especially at University level.

How will I be helping the researcher? I will be completing the Head questionnaire and participating in an interview of 40 minutes. The interview will take place in the University’s campus at a time and place convenient to me and audio recorded so that it can later be transcribed for data analysis.

Permission to record: Tick the appropriate option box

☐ I give permission to be audio recorded during this research procedure.

☐ I do not like to give permission to be audio recorded during this research procedure.

Confidentiality, Anonymity and storage of data.

With regards to the confidentiality and/or anonymity of the study, the researcher will ensure that the name of the university and participants will not appear in the thesis or any publication related to this study. The information collected will be used only for the purpose of this research. The interview would be arranged at a time and place that is convenient to the participant's schedule. The researcher assures that a copy of thesis will be shared with the research unit of your University after the submission to the researcher's university, UAE. The audio recording and the data will be confidentially stored with a password lock in the researcher's computer

Informed Consent

- I have had time to think about participating in the research project and had the opportunity to ask questions and have those questions answered to my satisfaction.
- I understand that participating in the project is entirely voluntary and that I may end my participation at any time without any penalty or negative consequences.
- With regards to the confidentiality and/or anonymity of the study, the researcher will ensure that the name of the university and participants will not appear in the researcher's thesis or publications related to this study.
- Information about the research study has been explained by the researcher and understood by me.

I agree to acknowledge this informed consent form with my signature and date.

SIGNATURE SECTION

Name of Participant _____

Signature/ Date _____

CONSENT FORM FOR STUDENTS

You are invited to participate in the research project entitled, “Investigation of Provision of Services to Students of Determination in the Federal Higher Education Institute in the UAE”

Investigator: Farhana Nadeem
Supervisor: Professor Eman Gaad
Study-Related phone number of the Researcher: 0508412181

Purpose of the research:

Students of Determination face multiple challenges in classes that need accommodations if they were to be actively engaged in learning and receiving the same experiences as their peers. However, providing appropriate instructions to Students of Determination can be challenging for the educators (Fatkullina, Morozkina, and Suleimanova 2015). Although there is a plenty of literature on education for students with Determination existing internationally, there is little awareness regarding this problem in higher education settings in the UAE. The purpose of this study is to explore the barriers encountered to learning that affect the experiences of the Students of Determination, in accessing higher education and the disabilitiesews of stakeholders on the inclusion policy, services and facilities for the Students of Determination in the Federal Institution of UAE.

Why is this study needed?

- There is a rise in the enrolment number of Students of Determination in higher education institutions.
- The researcher could find only two found studies relevent on this subject from UAE’s context. Thus this study will throw more light on our understanding of the situation in UAE’s context.
- The present study is an attempt to explore the problem of Students of Determination, their experiences, and also to propose implications to their problem.
- Finally, the policy makers could use this study to develop government policies that promote better institutional services and facilities to assist Students of Determination in higher education, especially at University level.

How will I be helping the researcher? I will be completing the student's questionnaire and participating in a focus group interview of 40 minutes. The focus group interview will take place in the University's campus at a time and place convenient to me and audio recorded so that it can later be transcribed for data analysis.

Permission to record: Tick the appropriate option box

☐ I do like to give permission to be audio recorded during this research procedure.

☐ I do not give permission to be audio recorded during this research procedure.

Confidentiality, Anonymity and storage of data.

With regards to the confidentiality and/or anonymity of the study, the researcher will ensure that the name of the university and participants will not appear in the thesis or any publication related to this study. The information collected will be used only for the purpose of this research.The interview would be arranged at a time and place that is convenient to the participant's schedule. The researcher assures that a copy of thesis will be shared with the research unit of your University after the submission to the researcher's university in UAE. The audio recording and the data will be confidentiallystored with a password lock in the researcher's computer.

Counselling Support to the participant:

In case of any possible risk factors such as emotional distress or stress during the process of signing the informed consent form, the students will be helped to avail the counselling service available at their University.

Informed Consent

- I have had time to think about participating in the research project and had the opportunity to ask questions and have those questions answered to my satisfaction.
- I understand that participating in the project is entirely voluntary and that I may end my participation at any time without any penalty or negative consequences.

- With regards to the confidentiality and/or anonymity of the study, the researcher will ensure that the name of the university and participants will not appear in the researcher's thesis or any other publication.
- Information about the research study has been explained by the researcher and understood by me.
- In case I have any difficulty understanding the process and giving consent to participate in the researcher's study, a third party witness (staff) from my university's accessibility unit will ensure to explain the process and help me to give the consent.

I agree to acknowledge this informed consent form with my signature and date.

SIGNATURE SECTION

Name of Participant _____

Signature/ Date _____

Statistical analysis for Student-Faculty-Specialist:

Statistical analysis for Student-Faculty-Specialist.docx

INDIVIDUALEDUCATIONALPLAN (IEP)

Name:		**ID:**	
College:	**Strengths & Difficulties:**		
Areas of need (s)	**Measurable Semester Goals**	Effective for	

Faculty Accommodations and Support Strategies:
This student may ask to take exams/test in the Accessibility Center. Please make arrangements with SAS staff 3 days prior to examinations.

Student Accessibility Services Interventions:
Campus Access Arrangements: (Parking, clustered class locations, exit.

External Agencies:

Related documents: (Medical report)

Consultations: (Faculty, other ZU units)

Last reviewed:

Prepared by:

Appendix 2: Matrix of assessment modes Analytical exercise Briefings Computer-based assessments and exercises Continuous assessment Coursework with discussion elements Critical diaries, learning logs and journals Crits Data interpretation exercises Design tasks Dissertation Documentation Electronic presentations: CD, web pages, etc. Essay assignments Examinations (open book) Examinations (seen) Examinations (take away) Examinations (unseen) Exhibition and poster displays Extended investigations (e.g. statistical) Field-work reports Finding primary source material Geological mapping “In class” and module tests Internship diaries Laboratory examinations and practical tests Laboratory practical reports Multiple choice testing On-line assessment Optical Mark Reader assessments Oral examinations Peer and self-evaluation Personal research projects Placement or exchange reports

Portfolios and sketchbooks Practical reports Problem based learning Projects, independent or group Sandwich year reports Simulation exercises Slide and picture tests Student-led seminars, presentations and discussions Synoptic examinations Treatment reports Video formats Viva voce examinations Work books.