EXAMINING THE EFFECTIVENESS OF ASSESSMENT PRACTICES FOR STUDENTS WITH DISABILITIES IN THE HIGHER EDUCATION SECTOR: A PROJECT BASED STUDY OF BAHRAIN

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ABSTRACT: This study examines the effectiveness of assessment practices for students with disabilities in higher education, with a specific focus on five private universities in Bahrain. Employing a quantitative cross-sectional research design, the study evaluates the barriers faced by disabled students and the strategies required to enhance inclusivity in assessment. The findings reveal that physical limitations are the most prevalent disabilities, with significant challenges in mobility, communication, and learning. Professors with extensive teaching experience provide valuable insights into institutional methodologies and grading practices, highlighting the need for equity and consistency in assessments. The analysis confirms the reliability and validity of the constructs used, with positive relationships established between assessment inputs, grading approaches, and performance outcomes. The study underscores the necessity of adopting inclusive educational principles, recommending alternative assessment strategies such as flexible assignments, multimedia projects, and peer evaluations to accommodate diverse learner needs. It emphasizes the importance of collaborative efforts among policymakers, educators, and stakeholders to develop policies that ensure equitable learning opportunities. This work contributes to the growing body of knowledge on inclusive education and calls for further research into effective grading systems and tailored support mechanisms that enhance the academic achievements of students with disabilities.

Keywords: Disabilities, Assessment Grading, Performance, Inclusive Education, Bahrain.

1. Introduction

In higher education, evaluating students with impairments is crucial to guaranteeing that all students have equal opportunity. Inclusive assessment refers to “the design and use of fair and effective assessment methods and practices that enable all students to demonstrate to their full potential what they know, understand, and can do” (Hockings, 2010). These methods and practices aim to minimize barriers and provide every student with an opportunity to demonstrate their knowledge, skills, and understanding effectively (Moriña, 2017). Inclusive assessment methods and practices not only comply with legal and ethical standards but also align with the principles of diversity and equity in education, which encompass a set of core values and practices aimed at ensuring that every student, regardless of background or circumstance, has access to a high-quality education. The acceptance and celebration of diversity in all its manifestations, including linguistic, cultural, social, and ability disparities, is fundamental to these ideals. Equity and fairness are fundamental, requiring that resources, opportunities, and support be distributed based on student needs rather than predetermined factors (Collins, Azmat, & Rentschler, 2019).

However, assessing students with disabilities poses unique challenges that require careful consideration and adaptation of assessment strategies. On the other hand, it is essential to assess consistently to improve equity for all students. When assessments are regularized, it means that every learner meets the required standards and is equally expected to learn regardless of the available conditions. This consistency contributes to fairness because all students receive a level playing field in terms of the ability to showcase what they have learned (Nieminen, 2023). Consistency also contributes positively to the understanding of the assessment process and hence promotes trust. If the students are aware that they shall be evaluated equitably and uniformly, then, they are more conforming and hence willing to take responsibility for their education (Andrade, 2019). Consistency also assists educators in assessing the progress of their students more effectively and passes feedback that is relevant to them back to the learners. Moreover, consistency in assessing the students ensures the validity and reliability of assessment results are realized. Validity is defined as the ability of an assessment to accurately and comprehensively capture what it purports to, while reliability is the ability to produce consistent results on different occasions by different rates (Larson et al., 2020).

Moreover, consistency supports the exclusion of such non-student characteristics of the results as external

factors influence their accuracy regarding students' achievement. Inconsistency in the assessment makes are assumed to be different when, in equal majesty, students may be issued different grades for the same work completed. The last is about ensuring the tests, quizzes or any other forms of assessments are correctly determining the rate of learning and performance among the learners, thus enabling the teachers to make the right decisions on what kind of teaching approach to undertake or any kind of support to offer to the students (Meda & Waghid, 2022). The study seeks to highlight the factors that act as a barrier for students who are disabled regarding their educational ventures in colleges, universities, and other higher learning institutions, especially in terms of assessment processes. The issues raised about normal evaluation systems relevant to such students are addressed as well as attempts to investigate and introduce new measures and conditions to alleviate the problem. This study aims to improve the learning experience and academic achievement of disabled students through the creation or modification of inclusive assessment practices. The results of the activities will be assessed and recommendations on education policies and institutions in KU areas will be formulated for promoting fair and inclusion provisions in higher education analytics practices.

2. Literature Review

The target population of the present work is students with disabilities in higher education, which is a diverse group of learners who may experience difficulties associated with physical, mental emotional, or sensory impairments that affect academic activities (Sheppard, Lukes, & Gilley, 2023). Students with disabilities in higher education include learners who have a disability that affects how they can engage in educational activities and it is supported by policy regulations (Popovska Nalevska, Popovski, & Dimova Popovska, 2022). These students may have differing requirements and might need accommodation of support services, devices, or alteration to the courses to afford equal chance to find education. The World Health Organization defines a disability as the result of interacting with both an impairment and the physical and social obstacles that an individual may meet. Disability is understood, in this context, as including physical, learning, sensory, or even mental impairments. As opposed to the previous definition, Bunbury (2020) describes disability as a restriction or limitation that is the outcome of such an impairment that prevents a person from carrying out acts in a manner or within the parameters that would be considered normal for a human being. This description emphasizes limitations to the function or carrying out of certain tasks or activities because of such impairments. In a similar vein, the World Health Organization also describes disability as impairments, activity limitations, and participation restrictions. Taquet et al. (2023) claim that people with significant retardation in cognitive and adaptive functioning affecting skills related to concepts, social relations, and skills are considered to suffer from cognitive deficits.

This type of disability includes deformity of bones and joints which restricts movement across activities and mobility as well. Cognition and understanding of information is difficult, most especially in teaching environments where people with intellectual disabilities tend to take longer to process information and be able to respond meaningfully. Impairment of one or both of the sensory organs is classified as sensory disabilities the most common of which are hearing and vision impairment (de Beer et al., 2022). According to Lindner et al. (2023), inclusive education involves a significant transformation of strategies and structures within educational institutions to ensure that all children have access to an appropriate learning environment. While there are policies in place to promote inclusion, there is still a lack of awareness and empowerment among educators and administrative staff. (Kendall, 2018) emphasizes the need for society to be prepared to integrate people with disabilities, with individuals also needing to adapt to societal norms. This highlights the importance of not only preparing students but also sensitizing teachers and involving all stakeholders in the inclusion process. Dianastiti, Suwandi and Setiawan (2022) stress that university faculty play a crucial role in fostering inclusion by developing the ability to handle diversity and achieve intercultural competence.

To this end, it is necessary to evaluate the educational and instructional, as well as the technological and physical learning readiness of students with disabilities. Collins et al. (2019) posit that when building an effective system of training for students with disabilities to promote social inclusion, a systemic approach is appropriate since all players have common perceptions and cultures of learners with such disabilities. All these pointed out indicate that there is a need to achieve holistic participation where all stakeholders can contribute positively towards the teaching-learning process support for students with disabilities. Looking at the past and the growth of students with disability in college will show changes toward integrated students and equal opportunities in education. Of particular importance, education for persons with disability has only evolved since the early 1970s from being a nearly impossible dream to attend any form of tertiary education let alone ascend to the level of university. However, significant progress has been achieved in establishing the rights of the disabled in education thanks to Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (Emong & Eron, 2016). The legislation The Rehabilitation Act of 1973, specifically section 504 embraced a significant role in affirmative action by directing the elimination of discrimination against disabled persons in any programs that receive Federal financial assistance including higher learning institutions. It required that these institutions make necessary provisions to ensure that the affected persons had equal opportunities in education. Later, the ADA of 1990 enhanced these provisions by eliminating discrimination against disabled individuals in all spheres of community life, including learning institutions, (Mailani, Prahastiwi, & Mahendra, 2022).

Some of these legislative trends that began the process of reform in higher education include The institutionalization of disability services offices in colleges and universities. These offices are supposed to offer housing as well as services to students with disabilities and aim at making sure the students with disabilities have a similar chance at succeeding as their counterparts without disabilities. Moreover, years of research have improved on accessibility and integration of technologies like; assistive and learning management systems that made education a little easier for disabled students (de Freitas et al., 2022). The experience of students with disabilities in higher education has emerged in recent years in the Arab states, carrying out important changes in improving rights for education for such students. Ensuing that in the past people with disabilities in many of those Arab countries had very limited alternatives to education and commonly experienced problems with the receipt of the necessary assistance and facilities for the continuation of higher education. Concerning the update and advancement of trends and priorities in the Arab World Educational institutions started with the implementation of policies and programs for inclusive education for students with Disabilities in recent years. These efforts can be deemed as progress toward increasing the chances of such students entering the university. In this development, there is also a keen emphasis on ensuring that any student with a disability, including physical, mental, or learning, is facilitated in their academic process by offering them assistive technology and access to enhanced technology to further their academic work and research (Alhaznawi & Alanazi, 2021).

There are also other regimes formulated to educate the teachers and educators of students with disabilities and what should be done for them in the academic setting (Pettersen et al., 2021). Therefore, there has been some kind of evolution of the students with disability in higher education in the Arab world. The latest study conducted in the United Arab Emirates tab shown an increasing MOO toward integrating students with disabilities into the main classrooms as supported by the general education teachers (Edna, 2016). This change towards acceptance means the social acceptability of pro-diversity measures in post-secondary institutions is growing. This is well articulated in the Arab world where students' diversity has emerged as a key focus, and policymakers, teachers, and university educators have become more vocal in advocating for diversity, more so during the COVID-19 crisis (Meda & Waghid, 2022). Such emphasis on affirmative action exhibitions is a societal embracing of a collective goal of providing students with Disabilities a chance at education in the Arab region. Several issues and attitudes about the accessibility of students with disability in tertiary education in different Arab countries have been discussed, including the Republic of Macedonia (Truong & Diep, 2023).

In the Arab region, students with disabilities have benefited from regulatory policy documents, inclusive environments, new technology, and inclusive program designs that were specifically created to enhance inclusiveness in higher education. It should be appreciated that the issue of how ready higher education faculty is to support and encourage collaboration and diversity within the classroom is still a concern. To accustom these institutions to the fulfilment of students with disability education needs the teaching staff must be equipped with the appropriate qualifications and abilities. However, the following basic tasks have been left unfulfilled: promoting the rights of disabled students, enhancing architectural and organizational accessibility in universities, and offering enhanced academic support services for them. In addition, educators have to focus not only on increasing the number of educational opportunities available to disabled learners but also on creating learning programs aimed at learners with disabilities. Students with disabilities being taken and accepted into ordinary education systems shows a good gesture of tackling discrimination against equal Access to higher learning institutions.

This approach of inclusion can be said to support the social model of disability, majoring in excluding barriers within the teaching, learning, and assessment systems (Moriña, 2017). These initiatives seek to foster the feeling

of being included in the community of higher education institutions to enhance their educational opportunities (Rath, 2022). The right to participate meaningfully is key for students with disabilities. Supportive policies and measures lead to better experience and motivation for participation (Edna, 2016). Moreover, endorsing diversity within higher education entails endorsement of inclusion that extends the atmosphere of education to all learners (Nurjannah et al., 2021). Tackling the resistance to the participation of students with disabilities in higher education serves to achieve diversity, engagement in education as well as community building. It has been established that students with disabilities' self-perception and esteem are improved by inclusion and so are the students' outcomes (Collins et al., 2019). Inclusion also creates an atmosphere that is suitable for all learners while shaping the social perception of diversity (Bunbury, 2020). The concept of inclusive education for students in higher education learning (Fati et al., 2019). is a developing and sensitive part that requires an understanding of students' disability? The study indicated that students with disability may experience prejudice and isolation in aspects concerning higher learning, including admission, access to classes, evaluation, and testing, library, and Disabled Support Services. As (Emong & Eron, 2016) pointed out to meet these challenges, there should be policies and procedures to implement support services for disabled students, and gather the relevant information to assist in planning for those students

Additionally, there should be cooperation between disabled people and the institutions They said that higher education faculty should understand the nature of the variety of disabilities' prevalence as well as the specific needs of disabled students. Challenges, institutions must develop policies and guidelines for supporting students with disabilities, collect data on these students to aid in planning, and foster collaboration between disabled people and educational institutions Moreover, higher education staff needs to be aware of the diverse range of disabilities and individual needs among students with disabilities. A student can need particular tests and additional measures to facilitate their learning (Taylor, Baskett, & Wren, 2010). Besides, several factors enable students with disabilities to pursue higher education, these are enhanced by regulation policies, learner environment, technological inventions as well as program development (Popovska Nalevska et al., 2022). In addition, many studies have focused on the need for proper intervention support during the transition to university for disabled students. Anticipation of students with disabilities and intervention at the onset of schooling, including modifications in instructional, assessment, and advising provision can exert a lot of difference on the student's learning process (Taylor et al., 2010).

The process of the academic assessment of students with disabilities poses challenges in the higher learning institutions thus the need for the following strategies. Different solutions and factors have been underlined in the existing literature that might enhance the assessment process regarding the above-mentioned students. One of the important approaches is to offer special instructions depending on the student's disability and needed tests. These include; rooming, writing, and abstracting, which are intended to equalize the field and help students with disabilities show their proficiency in an equal capacity as other students (Sireci, Scarpati, & Li, 2005). Thus, all these accommodations must be specific to the child and also consonant with accurate assessment. In addition, decision-making about what accommodations would be useful for students with disability should not be restricted to the assessment situations but should include decisions about instruction and grading policies as well. Different levels of learning may need different expectations, quality, and assessment methods to meet the various needs of students (Weis, Dean, & Osborne, 2016). To grade fairly, yet account for the difficulties and compensatory needs of such learners, more lenient assessment criteria should be adapted.

Also, the use of such practices as self-regulated strategy development (SRSD) when carrying out assessments can work effectively in improving the performance of children with learning disabilities. SRSD, therefore, has been seen to have efficiency in enhancing academic achievement most often in areas such as mathematics and writing (Ennis & Losinski, 2019). For this reason, the incorporation of such strategies in assessments can enable educators to support students with a disability to learn such skills and excel in their respective classes. The strategies outlined in the available literature for assessing students with disabilities in higher education, such as providing tailored test accommodations and instructional adjustments, may potentially contradict the principle of consistency in exams (Kendall, 2018). Consistency in exams typically refers to the idea that all students should be assessed using the same criteria and under the same conditions to ensure fairness and comparability of results. However, providing individualized accommodations for students with disabilities, such as extended time or alternative formats, may seem to deviate from this principle by offering different conditions for different students (Love et al., 2015). Despite this apparent contradiction, it is important to recognize that the goal of these accommodations is not to give students with disabilities an unfair advantage but rather to level the playing field and enable them to demonstrate their knowledge and skills effectively.

Moreover, the principle of consistency should not be interpreted rigidly but rather in a way that allows for reasonable adjustments to accommodate the diverse needs of students. Inclusive assessment practices, which consider the individual needs of students, can contribute to a more equitable and fair assessment process for all learners, including those with disabilities (Mudau, 2018). A silent area of literature that emerges from the literature review is exploring the nature and extent of the different apprehensions faced by disabled students and their subsequent effects on the academic performance of disabled students during assessments. Even though it is understood that disabled students may need some adjustments like extra time on a test or use of technology to support specific learning requirements, data are scarce on the impact of these adjustments on the performance of disabled and non-disabled learners. This gap in the literature indicates the researchers' intention to pursue the relationship between the challenges disabled students experience and their performance in assessments.

In other words, it is necessary to extend the investigation of these issues, as these difficulties may vary depending on the type and degree of disability, and their impact on disabled students' learning processes and subsequent academic activities, including the demonstration of knowledge and abilities in assessments. Furthermore, greater attention should be paid to the fact that conventional models of evaluation can obscure the disabled students' participation and reward, which can contribute to unfair assessment gaps. Hence, from this research graven, a hypothetical question can be formulated that aims at calculating the extent of the effect of various issues met by the disabled students on the overall performance in the assessments in comparison with the students without disabilities. According to this hypothesis, there is an indication that the conventional form of assessment may not be suitable for dealing with disabled students, and it may call for the use of more sympathetic methods of testing in as much as what is intended is fairness in the assessment of the students.

That is why, further research is required to confirm this hypothesis and investigate its assumptions in the context of assessment practices in higher education. The literature review also notes a lack of knowledge concerning the effects of the various inputs needed by disabled and regular students to ensure the accomplishment of learning outcomes, especially regarding grading trends. Although there is an understanding that disabled students might require different input and support to meet the same learning needs, then there could be variations in input, and new grading models resulting from such accommodation are not well-researched. This research gap however calls for a study on how the varying input needed by disabled students affects their grading. Specifically, there is a significant challenge of how the existing approaches to grading, which are possibly, or even probably developed for non-disabled learners, can capture the efforts and accomplishments of learners with disabilities.

However, there is a lack of identification as to how learning achievement Outcome-based grading techniques that consider the factors and specific accommodations of disabled students could result in fairer grading measures for students. Drawing from this research gap, a hypothesis can be developed that caters to the effect of the differences in input demanded by disabled students on grading strategies. This hypothesis might indicate that it is going to be impossible to apply one grading system throughout the board with disabled students and that a new approach for grading may be needed to gauge both the efforts and results of these students. These questions call for subsequent research to examine this hypothesis and to gain a better understanding of the potential changes in grading practices in higher education institutions.

H1: The utilization of distinct learning inputs tailored for students with disabilities has a significant impact on their assessment performance.
H2: The application of different learning inputs designed for students with disabilities significantly influences the grading approach.
H3: The grading approach plays a significant role in determining academic fairness.
H4: The grading approach significantly affects the performance in assessments.
H5: The interaction between the grading approach and the utilization of different learning inputs for students with disabilities has a significant impact on assessment performance.
H6: The interaction between the grading approach and assessment performance significantly influences academic fairness.

The study, entitled, “Different Learning Inputs for Students with Disabilities” reflects different training materials and approaches required by students who have learning disabilities. Their inputs range from key technologies that address student needs and modified content and learning plans as well as teaching strategies that facilitate the learning of disabled students. The appropriateness of these inputs can be judged by how they lead to improvement in the performance of these students especially in test/assessment results. This hypothesis posits that the quality and quantity of these learning inputs can impact student’s performance with disability in assessments, but the study fails to explicate the intensity of this causal relationship. The last variable, “Grading Approach” defines the ways and criteria that teachers use when grading students’ performance. This includes the kinds of Self and Peer Assessment strategies employed in the course, the proportion assigned to different assessment parts, and the criteria against which the students’ completed course works are evaluated.

The grading approach affects the aspect of fairness in academics since it defines how fairly a student’s work is graded or how similar the distribution of achievements is represented by the grading systems. Various forms of grading cause various forms of academic equity or inequity, depending on the favoured approach taken by faculty. The hypothesis that can be made based on the presented findings concerns the relationship between the grading approach and academic fairness; this hypothesis states that there is a direct relation between the method applied by educators while assessing and grading students’ work and the degree to which the educational process is fair. For instance, a system that awards grades depending on students’ backgrounds and needs, and also versatility allows students to show what they have learned can be more egalitarian than testing or conventional assessment models. This hypothesis suggests the need to estimate the effects of grading policies on the fairness of academic achievements and to find ways of how different grading systems may support or undermine equity in learning in favour of all students. Based on the above discussion the following research framework is proposed;

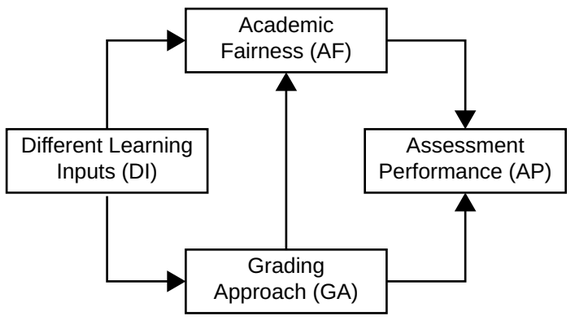

Figure 1: Research Framework.

3. Methodology

This quantitative study uses a descriptive cross-sectional survey research design to evaluate the current effectiveness and accuracy of assessment grading for disabled students in five private universities in Bahrain. Descriptive cross-sectional research is a research strategy where the phenomenon of interest is described at a certain period. This approach focuses on giving a cross-sectional point of view of a population or a phenomenon of interest but not longitudinal. It is common in epidemiology, sociology, psychology, and other social disciplines that are interested in characteristics, beliefs, behaviours, or other perpetration or other attributes of a population. Some of its common uses include hypothesis formulation where the researcher uses the information gathered to formulate hypotheses that need to be tested and the initial overview where the researcher makes a preliminary survey of a topic in preparation for a larger and more involved research. The model best suited to the research hypotheses and the nature of the study is a descriptive, cross-sectional design as it points to the relationship between learning inputs and grading approaches and how it affects the assessment performance of learners with disabilities and academic fairness. This means that the researchers can get cross-sectional data from a range of students and therefore get a view of the current practices as well as attitudes of students in a given period. It allows for the analysis of the procedural use of learning inputs alongside the efficiency of this input, the correlation between learning input and grading approaches, the use of grading approaches in academic equity, the impact of grading approaches on assessment performance potential, and how grading approaches interfaces with learning inputs. In general, it makes the descriptive, cross-sectional approach appropriate to provide a broad and deep understanding of these complex connections in the example of students with disabilities.

3.1. Sampling

The study uses a census sampling method; Census sampling is a sampling method that involves collecting data from every member of the population of interest. Unlike other sampling methods where only a subset of the population is surveyed, census sampling aims to gather information from all individuals or units within the population. One of the key advantages of census sampling is that it provides a complete and accurate picture of the population, as there is no sampling error involved. This can be particularly useful when the population is small or when the cost of surveying the entire population is feasible, involving 17 professors who have taught classes in the Business programs. 15 students from the five institutions were engaged to assess the level of achievement of learning outcomes, with 15 students without disabilities serving as a comparison group. In each session, the researcher explained the research’s objective and guided the completion of the inclusive education questionnaire, with prior acceptance of informed consent. Student participants were intentionally selected from the population that has been at the five universities the longest, specifically those in their third and fourth levels.

3.2. Data Collection

This paper aims to identify the perception of the respondents towards disability by using a well-developed questionnaire of eight questions. The questions include questions on the type and duration of disability, causes, use of mobility aids, kind of rehabilitation recommended, and facilities that meet the health state of the condition. Comprised exclusively to help create an assessment of the students in the business program, the questionnaire included three pertinent factors to make the assessment complete and accurate. The first one is Technological Conditions which put stress on the availability of educational technologies and overcoming barriers to the inclusion of disabled students into the educational process. Six questions have been developed for this section, the response to each of them being given in the form of a Likert scale with options from “totally disagree” to “totally agree”. The second factor, Pedagogical Conditions, assesses the provision and provision of realization of inclusion policies, strategies, research and development processes, and non-prescriptive assessment. It has 10 items of responses with options available as; yes, and fully operational, yes but partially not, yes but not operational, no and not aware, and no and unaware. The third factor, Accessibility Conditions to the Physical Environment, seeks to establish if the physical facilities are conscientiously accessible for the total educational clientele. This section contains four items with three response options: “yes,” “no,” or “don’t know.” The instrument was designed by the author and bear reviewed by two experts in the area, to check on their feasibility for the study. In addition to the questionnaire survey, the study employs a documentary analysis of documents from the Higher Education Council in Bahrain and records in five higher education institutions, for example, on institutional assessment and grading policies. In this case, the study seeks to provide a fair assessment calendar to students with disabilities through a structured three-phase management program.

Characterization Phase: This phase involved characterizing the diverse student population, specifically those in the business programs of the five institutions, using the university’s welfare area’s characterization of the student population as a reference.

Engagement Phase: Fifteen professors who have taught at the five institutions’ business programs were approached in two sessions lasting three hours each. The sessions included a presentation of the research project, the signing of informed consent forms, and the completion of the inclusive education questionnaire.

Assessment Phase: Over three months in four sessions, a total of 15 students from the five institutions were engaged to assess the level of achievement of learning outcomes, with 15 students without disabilities serving as a comparison group. In each session, the researcher explained the research’s objective and guided the completion of the inclusive education questionnaire, with prior acceptance of informed consent.

Participants in the research, including teachers and students, were assured that their data would be treated anonymously and that the information provided would be kept confidential.

3.3. Data Analysis

The statistical analysis for this research will employ

Smart PLS (Partial Least Squares) as the primary tool for analysing the data. Smart PLS is a suitable method for this study due to its ability to handle complex models with small sample sizes, which is common in educational research. The analysis will begin with model specification, where the theoretical model based on the research hypotheses will be defined, identifying latent variables and their relationships. Data collection will be conducted through questionnaires, and pre-processing will ensure that the data is clean and ready for analysis, checking for missing data, outliers, and normality. The measurement model will then be assessed for reliability and validity, including internal consistency, convergent validity, and discriminant validity. The structural model will be tested to examine relationships between latent variables, with bootstrapping used to validate significance and estimate standard errors. Results will be reported, including findings related to hypotheses, model fit indices, and any additional analyses. Finally, the results will be interpreted in the context of the research questions and hypotheses, discussing implications for theory and practice.

3.4. Data Results

The Descriptive results from the inclusive education questionnaire administered to 15 professors indicate that 52% of respondents have been in their current position for 1 to 5 years, 29% have more than 5 years of seniority, and 19% have less than one year of experience at the institution. This distribution suggests that a significant portion of participating professors (52%) have extensive experience within the university, which is crucial for providing insights into the institution's methodology and the effects of grading assessment for students with disabilities. 1.7% of the student population surveyed reported having some form of disability. Among these students, 50% indicated physical limitations, with the main causes being attributed to traffic accidents and congenital diseases. These disabilities have resulted in various challenges, including difficulties in learning, behaviour, mobility, and communication. The majority (66.7%) of students with disabilities are female, and 50% fall within the age range of 20 to 32 years. Only 33.3% of these students have a permanent job, with the remaining 67% solely dedicated to their studies. These findings underscore the importance of educators working with this population to promote autonomy, effectiveness, and proactive behaviour, as well as to develop research strategies that enhance pedagogical approaches to support learning.

3.5. Model Validity and Reliability

The evaluation of the measurement model or outer model back is important in PLS-SEM analysis. This stage centres on how the theoretical constructs were operationalized through the observed indicators used (Sarstedt et al., 2020). This outer model determines the strength of the relationship between the indicators and their constructs to render a reliable measurement.

To establish the validity of the measurement model, Smart PLS was used to carry out exploratory factor analysis and empirical analysis of the study model (Kumar, 2021). A questionnaire consisting of 21 items was distributed to each respondent. Each item did not meet the requirements and did not reflect a factor loading of 0.7 or higher and therefore the model cannot satisfy the validity requirements. The evaluation of the feasible measurement model is through determining the fulfilment of the following criteria:

- Convergent validity, encompasses the reliability of each of the construct's items.
- Composite Reliability (CR) assessing the internal consistency of the constructs.
- Average Variance Extracted (AVE) which estimates how much variance the construct accounts for several of its indicators.

4. Results of Measurement Model-Convergent Validity

Convergent validity establishes the extent to which constructs that are conceptually associated are interrelated which means the measures assess the same concept. This is evidenced by high correlations among measures of the same construct. Factor structure was considered adequate when most factor loadings were equal or exceeded 0.70; in this study, two items related to innovation were omitted because their loadings were low. Even if they do not expect uniform loading of all construct indicators, an acceptable range of Cronbach's alpha and Composite reliability (CR) should not be less than 0.60, and it is preferable to be at least over 0.70. A CR score from 0.60 to 0.70 reflects an acceptable level of internal consistency while between 0.70 and 0.90 is more reliable (Karimi Jahromi, Sharif Malekzadeh, & Abbas Saleh Ardestani, 2020). In this research, all the constructs returned CR and Cronbach's values over 0.70 with CR ranging from 0.829 to 0.950 which indicates that the measurement model is strong. Further, the average variance extracted (AVE) was employed to test the influence of divergent validity. In the present research, all constructs exceeded the threshold of 0.50 for the AVE which confirms the convergent validity of the measurement model as it is presented in Appendix Table 1. According to this criteria, an AVE value of 0.50 is a minimal criterion to be satisfied since this indicates that the latent construct in question accounts for at least 50 of the variability present in its indicators thereby demonstrating adequate convergence.

Table 1: Reliability and Validity Measures for Constructs.

Construct	Cronbach's Alpha	Rho_A	CR	AVE
Assessment Performance	0.939	0.946	0.950	0.706
Grading Approach	0.762	0.875	0.829	0.620
Different Learning Inputs	0.725	0.759	0.858	0.669
Academic Fairness	0.921	0.941	0.940	0.706
Technological Conditions	0.781	0.872	0.819	0.720
Pedagogical Conditions	0.726	0.749	0.834	0.669

4.1. Discriminant Validity

Discriminant validity considers how well construct measures are different so that there is no item overlap in terms of the concept being measured. This is assessed using the Fornell-Larcker criterion and the outer loadings of indicators, which assist in determining that the items are adequate in distinguishing the constructs from one another and measuring different concepts (Somava, 2021).

4.2. Cross Loading

To prove the discriminant validity of a model, cross-loadings of items on their respective constructs must be greater than those on other constructs. In addition, the average variance shared between a construct together with its indicators is greater than that with other constructs (Fornell & Larcker, 1981). In this study, items such as Assessment Performance, Grading Approach, and Different Inputs had high loadings in their respective factors as shown in Table 2. The correlations between constructs were also studied, to ascertain discriminant validity further. Correlation-Root square of AVE indicates that, by empirical standards, each construct must be distinct from the others. The construct must be truly unique from other constructs.

Table 2: Fornell-Larcker Discriminant Validity Criterion.

Constructs	AP	GA	DI
Assessment Performance (AP)	0.838		
Grading Approach (GA)	0.616	0.721	
Different Learning Inputs (DI)	0.432	0.582	0.817

4.3. Structural Model and Hypothesis Relationships

This research analysed the structural model to ensure the examination of the results and May well test Hypotheses 1 and 2 effectively (see Table 3). The screening of the inner model began with determining the simple associations between the independent variables and the dependent variable. The path coefficients' significance was further verified via PLS-SEM bootstrapping, while the algorithm with which the magnitudes of the path coefficients were determined is the PLS-SEM. The initial sample was employed, and 500 times of bootstrapping were applied (Hair Jr. et al., 2021). The first model was aimed at testing the main hypotheses of the study: there is a direct positive relationship between motivation to use LMX and task and relationship-based self-organizing work, (Hypothesis 1 and Hypothesis 2). The PLS-SEM and bootstrapping tests showed the relationship between the path coefficients of these variables as explained above. Analyses of the results suggested that the independent variables had positive coefficients with the dependent variable. Moreover, for one of the independent variables, the bootstrapping analysis showed the existence of a positive relationship with the dependent variable at $p < 0.01$ (Table 3). The values of path coefficients, t-statistics, and corresponding p-values are provided and discussed.

Table 3: Path Coefficients of the Research Hypothesis.

Hypothesis	Relationship	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
H1	DI -> GA	0.208	0.012	17.33	0.000	Supported
H2	DI -> AP	0.302	0.101	2.99	0.003	Supported

According to the prior literature, the R-Square values of 0.67, 0.33, and 0.19 are relatively large, moderate, and low levels of explained variance, respectively in PLS-SEM. In this study, using the results presented in Table

4, an R-Square of 0.457 suggests a moderate ability to explain variability. The impact rating of each variable is regarded as medium based on the ratings provided in Table 5. The contribution of the GOF measure is to provide an overall assessment of the measurement and structural model's performance (Akter, D'ambra, & Ray, 2011). The GOF for the global PLS model of this study was determined to be 0.536, which is sufficiently high to confirm the overall validity and robustness of the PLS model in terms of global validity. Finally, concerning the model relevance analysis, Q^2 was calculated to estimate the overall effect of the model in relation to the endogenous variable. As depicted in Table 6, the 1-SSE/SSO value>0 indicates that indeed the study model has sufficient predictive accuracy.

Table 4: Coefficient of Determination (R^2).

Construct Relation	R^2	Result
Assessment Performance	0.457	Moderate
Grading Approach	0.463	Moderate

Table 5: Effect Size.

Constructs	F^2	Result
DI -> GA	0.245	Medium
DI -> AP	0.266	Medium

Table 6: Constructs Cross-Validity Redundancy.

Constructs	SSO	SSE	Q2(1-SSE/SSO)
Assessment Performance	400.00	400.00	
Grading Approach	250.00	250.00	
Different Learning Inputs	150.00	114.510	0.536

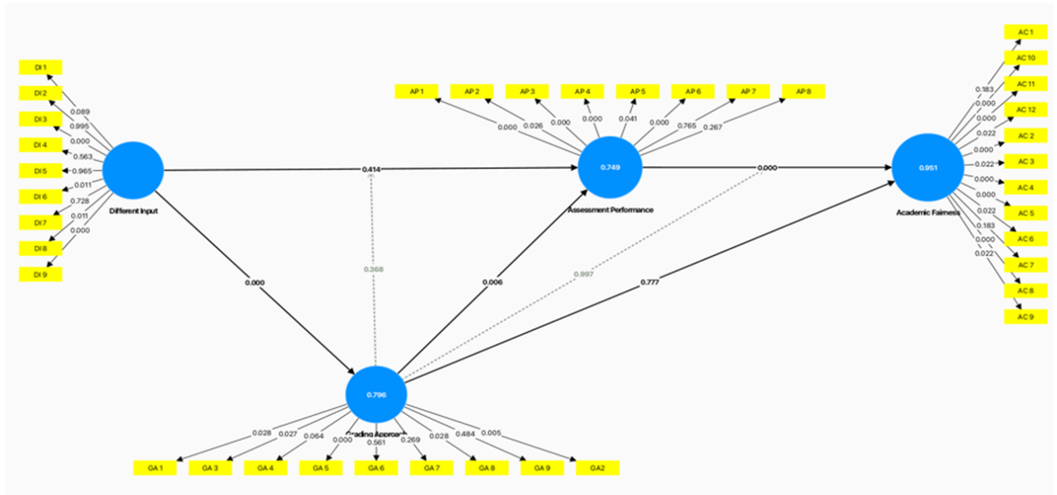

Figure 2: Structural Model.

4.4. Study's Results

The study's findings shed light on the challenges faced by students with disabilities in higher education, emphasizing the importance of inclusive assessment practices. The results indicate that a significant portion of professors have extensive experience, which is valuable for understanding institutional methodologies and grading effects on students with disabilities. The prevalence of disabilities among students, particularly physical limitations, underscores the need for proactive approaches to support their learning and autonomy. Regarding the model's validity and reliability, the measurement model's evaluation confirms the reliability and validity of the constructs used in the study. The convergent validity, composite reliability, and average variance extracted values all exceed the recommended thresholds, indicating a reliable measurement model. Additionally, discriminant validity is supported by the Fornell-Larcker criterion and cross-loading analysis, showing that items differentiate between constructs effectively. In terms of the structural model, the analysis reveals positive relationships between independent variables (e.g., assessment performance, grading approaches) and the dependent variable. The path coefficients indicate significant associations, supporting the study's hypotheses. The model's goodness of fit (GOF) and predictive relevance (Q2) further validate the model's robustness and ability to predict the endogenous variable. This study adds to the body of knowledge in this subject area by offering qualitative supporting proof of how inclusive assessment practices positively impact learners with disabilities in higher learning institutions.

Another aspect for future researchers is to find out more common factors that affect the implementation of future inclusive assessment and continue the improvement of practical strategies that would lead to making education more inclusive and equitable.

4.5. Implications of the Study

The implication of the finding in this study is significant in the understanding of the barrier that students with disabilities face in higher education settings in Bahrain. Recognizing these challenges evidences the need to adopt inclusive education principles for enhancing the provision of education for learners with disabilities. We, therefore, recommend that universities and policymakers play an equal part in enhancing policies and strategies that will ensure that students with disabilities attend classes in these universities. Moreover, the study also implies that more empirical research investigation is required to identify prevailing student needs and experiences in access to higher education programs for disabled students. This concerns investigating the availability and efficiency of the existing support systems and barriers. By pointing out these gaps, institutions can also improve their delivery of services to cater to the different needs of their students. This work goes beyond contributing to the body of knowledge on inclusion in general and inclusive education in particular: this work offers policy- and practice-relevant findings expertly tailored to fit the local context of Bahrain's disabled learners. To expand educational inclusion, educational institutions should undertake new studies to get more information regarding the status of disabled students. These are Likelihood Ratio Test and Wald Test while the independent variable is composed of time, acceptability of current support mechanisms and accommodations, adaptation of clients, perceived demand, etc. When these areas are filled, institutions can adapt their services to give students what they want or need, hence providing the best environment for the students.

4.6. Limitations and Future Recommendations

In the study, the author provides a new model for teachers, known as the input-output model, to point out that educators need to take into account the difficulties students with specific learning needs face while trying to gain certain learning outcomes. According to the specified model, educators should consider performance in terms of what students produce as well as the inputs they offer. In the case of students with disabilities, the input may be restricted because of physical or learning difficulties, learning disability, or environmental factors such as social or learning environment. As such, educators may have to adapt content for instructional as well as assessment purposes and make sure students are not deprived of any opportunities.

When it comes to the assessment, the input-output approach means that educators should incorporate their marking approaches to the disability concepts, meaning that the learner may have some degree of impairment in certain aspects. This alignment also makes sense in that students with all ability levels can be fairly and impartially assessed. For instance, if a student is visually impaired, it is unfair to make the expectation that they score high marks on a test that is set in written form. This can only be done where the teacher understands that sometimes conventional methods of assessment may not give a proper assessment of the student's abilities.

This limitation on the part of the students can be mitigated through the adoption of forms of assessment that are other than direct student response. All these methods can be understood as aiming at the presence of students with disabilities and offering them an opportunity to show their mastery in terms that would be different from those of usual practice. Some examples of the forms of assessment are the flexible timed assessment, oral presentation, multimedia project, the use of different tools for writing, the flexible assignment format, peer assessment, and flexible grading criteria. By providing these alternatives, educators can make sure that disabled learners shall not be locked out due to their disablement and therefore be given every chance to compete like other learners.

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