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STUDENTS' WITH SPECIAL NEEDS' PERCEPTIONS OF USING THE VIRTUAL CLASSROOM AS A DISTANCE LEARNING PLATFORM AND INTENT FOR ITS FUTURE USE: AN ANALYSIS OF THE TECHNOLOGY ACCEPTANCE MODEL.

Dr. Munthir Alblaihed
Educational Technology Assistant Professor, Hail University- KSA
m.Alblaihed@uoh.edu.sa
P.O.Box: 2240, Hail, Saudi Arabia 81451

Abstract

One of the most important criteria for the success of virtual classrooms for students with disabilities is the satisfaction of the beneficiaries and their acceptance of it, so the study aimed to identify the perceptions of students with special needs about the use of virtual classrooms as a platform for distance learning and the intention to use it in the future by analyzing the technology acceptance model. (5) Hypotheses, and the research group consisted of 1,727 students with disabilities in ten Saudi universities who had previous experience and the ability to deal with virtual classrooms. In the future to know the effect of the behavioral factors of the model, which included (perceived ease of use- perceived usefulness of use- perceived Self-Efficiency of use-perceived enjoyment of use - perceived of efficacy of use).

The results of the field study demonstrated the validity of the technology acceptance model as a theoretical basis that can help in understanding and clarifying the behavioral intentions of students towards the use of virtual classrooms in the future.

In light of the results, the study recommended the necessity of providing more courses available through the Blackboard platform for students with disabilities and the need to help them confirm or increase their positive perceptions about virtual classes by developing e-learning content to be easier and more user-oriented.

Keywords: Virtual classes; e-learning; distance learning; Technology Acceptance Model (TAM).

Introduction

At the end of 2019, the Coronavirus pandemic started to spread all over the world just after it was identified in China. The outbreak of the new disease early 2020 has reshaped the world's systems forcing many countries to take actions that would prevent or slow down the outbreak of the virus imposing suspension of work, quarantine, lockdown, travel ban, and many other restrictions. These restrictions have affected nearly all systems including educational systems worldwide leading to a nearly complete closure of schools and universities in many countries. According to the UNESCO (2020) reports, most countries have suspended attendance to educational institutions as an attempt to control the outbreak of Coronavirus pandemic. This suspension of physical attendance to schools and universities has affected more than 90% of the students' population worldwide, according to the UNESCO, leaving millions of students and teachers with so many significant issues. As a result, most educational institutions have set urgent alternative plans moving from face-to-face teaching to online teaching (Bolton, 2020). This reaction, and huge shift that it has made on education system, has raised serious concerns among students and teachers about the process of learning and the nature and characteristics of this emerging education system.

Although most university students are familiar with online learning which has been already introduced as part of majority of courses around the world for many years, the paradigm of the integration of online tools into education has significantly been affected by this unexpected sudden shift mentioned earlier. Online tools have been already used by majority of university students as supportive tools supporting on-campus teaching and learning process. However, when online learning has taken over the whole educational process and replaced physical attendance to the university and its classrooms, many aspects has been affected including the quality of education, content delivery, interaction, teaching methods, responsibilities, assessment, and many other aspects. A huge body of literature has investigated the students' attitudes, beliefs, and acceptance of e-learning as a tool among other traditional channels of interaction between students and educational systems. However, this huge shift in the role of e-learning in education during the spread of Coronavirus pandemic and its replacement of all other channels might have changed the position of students from campus students to a 'sort of' distance learning students. This could make curial changes on the students' perceptions about e-learning and its tools as a distance learning tool. This study aims to investigate the students' perceptions of using virtual classes as a distance-learning platform during the suspension of university attendance becausethe outbreak of Coronal virus pandemic.

Literature review

E-Learning

New technology has been providing people with many emerging opportunities that facilitate communication and interaction. As a result of the emergence of many forms of technology, educational institutions have adopted different forms of these technologies to facilitate and enhance teaching and learning experiences and to take advantages of their affordances as tools and environments for e-learning. E-learning in general was defined as "the employment of advancements in electronic technology to create, deliver, and manage learning content, to facilitate communication and collaboration between parties involved, and to manage the learning activity itself" (Punnoose, 2012). This application of technology in education took different forms among institutions according to their students' needs and their program's structure. For example, e-learning adoption varied from a supporting environment of courses presented on-campus, to the main educational environment as in distance education. However, a wide range of literature has shown interest among students on e-learning and its applications. For example, Butorac, Roncevic, Nemcanin and Nebic (2011) argued that university students in general prefer to deal with e-learning environments as part of their courses. They usually show more interest in doing some tasks online to complete their course work in more convenient way of study (Alqirnas, 2014).

One powerful e-learning tools that has been introduced in the late nineties is the Blackboard platform. According to El Zawaidy (2014), one of the most e-learning platforms used worldwide, and in Saudi Arabia particularly, is Blackboard. It has been used by many Saudi Arabian universities as a supporting environment and helping in blended learning. El Zawaidy (2014) stated that "The Blackboard Learning System is a virtual learning environment and course management system developed by Blackboard Inc. It is a Web-based server software which features course management, customizable open architecture, and scalable design that allows integration with student information systems and authentication protocols" (p.124).

Distance learning and e-learning platforms

Many universities worldwide designed and offer distance-learning courses for those who cannot attend on-campus courses for any reasons. It became popular around the world due to its value in providing education to a wider population of students. Researchers identified many advantages of distance learning (e.g., Alqirnas, 2014; Dyrbye, Cumyn, day & Heflin, 2009; Echo, 2011). It is argued to provide learners with the opportunity to get lower cost courses compared to on-campus courses. Researchers also stated that those who need to attend courses while working can benefit from distance learning programs. Another advantage that distance learning provides learners with is overcoming geographical issues by joining courses in overseas universities. However, distance learning seems to face many pedagogical and technological challenges that need to be consideredto provide high quality education. Mathew and Iloanya (2016) argued that teachers' pedagogical skills could be a significant challenge when teaching an online course where they need to have specific skills that allow them to provide a high-quality teaching that is different from real class teaching. The role of learners is meant to shift to a more active responsible agent to cope with the requirement of the distance courses. Researchers highlighted that when online courses provide a high level of interactivity; this usually increases distance-learning quality. It was found that the interactivity in online courses could increase students' motivation and satisfaction and improve the quality of the course outcomes (Espasa & Menses, 2010;Mathew & Iloanya, 2016; McGraw, 2011).

The role of technology in distance learning courses and the way that universities employ technology as learning environment seem to be a corner stone in building successful online programs. It is argued that when technology is used to create learning environment properly, it can promote a wide range of the students' skills such as critical thinking and problem-solving skills (Mansbach, 2015; Mathew & Iloanya, 2016). However, the combination of pedagogy and technology, and the way that pedagogy drives technology in distance learning, are the main concern that could contribute significantly to the level of distance education quality and the stakeholders' perceptions of it. Anderson (2012) stated that

For optimal performances, the pedagogy and the technology must create an engaging and compelling dance (Anderson, 2009). The technology is the music setting the tempo, the beat, the timbre, and the compelling melodies. The pedagogy defines the choreography, directing the dancers' sweeping motions, graceful extensions, and enduring embraces. Together, technology and pedagogy reveal and develop our human creativity and responsiveness and allow us to learn effectively and enjoyably.

However, theoretically, there are different forms and models of pedagogy that drive distance education and draw attention to different technology affordances to achieve the distance course objectives and aims (Anderson, 2012). Anderson has summarized these pedagogical thoughts in three models. Firstly, the Cognitive–behaviorist pedagogical model where learning activities occur in an individual base and performed by students alone or by the help of an instructor. Learning events in this model of pedagogy are tightly driven to specific goals and assessed according to the positivist philosophical point of view. This model, according to Anderson, is more appropriate for training courses rather than 'education' where learning outcomes are measured behaviorally. Second pedagogical model of distance education is the social constructivism where the

focus has moved to groups of learners rather than individuals. This model of pedagogy was based on the work of Piaget and his followers to develop a distance course that provide students with learning contexts using many-to-many communication technologies. The third pedagogical model of distance education is the Connectivism model where the focus was shifted to building flexible connections between learners and learning contexts. This model assumes an important shift in the role of learners from memorizing information to finding, filtering, and applying knowledge (Anderson, 2012).

From the above, one can argue that distance learning courses need to be theoretically designed and long-term planned for specific category of learners who seek learning through this type of courses to achieve its quality targets. This highlights the demand for pedagogical planning and stakeholders' skills to reach the formula of mixing technology, pedagogy and learners' needs and characteristics to provide proper distance education. I may argue that it is completely different case when it comes to using technology to provide distance education as a response of emergency situations. Despite the widely reported advantages of distance education in achieving high-level educational goals, the sudden shift from on-campus education to distance education without enough consideration given to the philosophy behind these two different models and the characteristics of the audience being moved between these two models can be seriously problematic.

Emergency e-learning

Natural hazards and pandemics affect many aspects of peoples' lives and force global systems to take fast reactions to avoid their consequences. Educational systems can be seriously affected by such circumstances, which leads sometimes to a complete closure of school and universities as happening during the Coronavirus pandemic outbreak early 2020. Most universities worldwide have set alternative plans shifting educational programs from face-to-face to online teaching. However, this urgent shift has caused many issues among courses as it moved learning context from on-campus to online environments without enough consideration to the underlying aspects that drive these two different models of education: on-campus and distance education. Although online learning tools can provide students with access to learning contexts when they cannot attend physically to universities (Baytiyeh, 2018), this needs to consider many aspects to provide high quality education for students.

It is widely reported in the literature that students can achieve their learning goals effectively when learning online as in learning on-campus (e.g., Baytiyeh, 2018; Cavanaugh et al., 2004; Cavanaugh, 2005; Means et al., 2009). However, according to Baytiyeh (2018), "transforming the traditional educational processes during emergencies into an electronic or online environment is a challenging task that requires teachers to establish the needed interaction with their students". What could contribute on determining the success of such shift is the teachers' deep involvement in the process of transformation in addition to preparation and support provided to students (Mackey et al., 2012, cited in Baytiyeh, 2018).

Hodges, Moore, Lockee, Trust and Bond (2020) argued that the is a big difference between online courses that are well-designed and well-planned in advance and courses that are presented online as an urgent response to emergency situation like Coronavirus pandemic outbreak. They stated that typical online courses are planned, prepared, and developed at least six to nine months in advance, which include teachers' preparation to be ready and comfortable with the course process. In contrast, the sudden shift from on-campus to online course as occurring in the current circumstances would lead to several pedagogical and technological issues among teachers. This sudden shift would consequently affect all the stakeholders' perceptions about online learning including, of course, students. In emergency e-learning, students might develop new attitudes and perceptions which could be different that those attitudes and perceptions they hold about the wider idea of e-learning as part of their on-campus courses. These students' perceptions are likely to be affected by their motivations and degree of engagement during their emergency online learning. Therefore, I may argue that it is crucial at this point to investigate the students' perceptions of using virtual classes as a distance learning platform as a response for university campus closure during Coronavirus pandemic outbreak.

People with disabilities:

Concept:

According to the United Nations Convention on the Rights of Persons with Disabilities (CRPD, 2020), persons with disabilities are defined as those who have long-term disabilities that make it difficult for them to participate fully and effectively in society on an equal basis with others (Article 1). These impairments can be sensory, physical, mental or cognitive. Use of the term "persons with disabilities" in this study follows the recommendations in Hanson et al., 2015)).

Types of disabilities:

It is clear by defining a person with a disability that he suffers from a deficiency or deficiency in his abilities that prevents him from carrying out his activities fully and naturally, as a result of the disability, which is divided into several types, including: intellectual disability, hearing disability, physical disability, language disability, visual disability, and disability Multiple
(Disability Categories Under IDEA, 2021).

The education of persons with disabilities has received great attention in the field of education, given that they constitute a significant number in societies, as they constitute about 15% of the population in society, and according to many statistics, 80% of persons with disabilities are in developing countries, including the Arab countries (BBC Research Centre, 2013).

Due to the development of the technological revolution in the education process, the opportunities for persons with disabilities to obtain education have increased, as Kent (Kent, 2016) indicates that there is an increasing awareness of the importance of making information accessible to persons with disabilities and that it is likely to have the use of environments Virtual learning The ability to make teaching content more accessible for people with disabilities, which may suit their different situations in improving learning, as the distance learning system supports students in higher education institutions in a way that makes providing it to them an urgent need, such as supporting the benefit of those cases that face physical or sensory disabilities From attending electronic courses instead of traditional learning, which requires facilities and modifications in the physical environments of those institutions (Brokop, 2008),

This type of system also achieves the principles of Universal Design of Learning (UDL), which is one of the current practices in the field of supporting and educating these students, whose principles are to present ideas and information in multiple ways, diversity in the presentation of forms of presentations, and ease of access to cognitive abilities And the contemplator of these principles notes that they represent the advantages offered by virtual distance education to students with disabilities, as they have the opportunity to access the most appropriate content for them and give them the flexibility to listen, watch, interact and engage with their colleagues and professors without feeling discriminated against or treated differently because of their disability (Kent , 2016).

Students with disabilities face many challenges when they enroll in university education, and many studies have been conducted that sought to identify the most prominent challenges facing students with disabilities, such as: Fathy (2020), Maajini (2011), Mona Al Hammadi (2018), and Al-Quraini. , Hanan Al-Harthy (2020), and Kent study (2016), which are represented in administrative challenges, educational challenges, psychological challenges, social challenges, and finally challenges related to movement to and from the university, and their results revealed the inability of students with disabilities to adapt easily and easily with The general atmosphere in higher learning institutions; Because university life differs in form and content from life in regular schools, and the exacerbation of the responsibilities and requirements expected of the university student.

The study of Wissa & Avdic (2017) aimed to determine the nature of the challenges facing persons with disabilities at the Swedish University of Dalarna, and the results concluded that these students face many challenges represented in the fact that the electronic content provided in those courses did not take into account individual differences and preferences. Which supports each student, in addition to not giving them enough time to perform homework and tests, especially for those cases that may face health or mobility problems, and the results of the study revealed the presence of negative trends on the part of their teachers towards confidence in the abilities and capabilities of these students to participate in those electronic courses effectively.

In the study Al-Moaqel (2017), which sought to know the challenges of implementing the blended education system with students with disabilities, and its results showed that disability is one of the most important challenges that have an impact on the process of receiving their education, as some of them face difficulties in attending lectures, and they also face challenges in practical application. The laboratories are not equipped for students with disabilities.

Some of the results of studies, such as the Al-Muaiqel study (2015), the results of which indicated that the most important obstacles were obstacles related to the student's disability in (laboratories and practical applications).

In view of the development of learning systems and mechanisms and its integration with the information revolution, as indicated by the study of (Zaidan, 2011; Shamis, 2019; Al-Harbi, 2008; Al-Zaidi, 2009; Khalaf, 2015; Al-Qahtani, 2014; Rouhollahi, 2016 Martin, Laciste, & Concepcion 2019) on the importance of virtual classrooms and their positive impact on performance, and the belief in the need to confront the challenges facing students with disabilities in anticipation of a better future, and what this requires in terms of assimilation and dissemination of the contents of the new knowledge revolution and the employment of its technological mechanisms.

Disability statistics in the Kingdom of Saudi Arabia:

In order to reach realistic statistical indicators that reflect the prevalence rates of disability in the Kingdom of Saudi Arabia and the categories of disabilities in terms of the degree of difficulty and spread among members of society, to be a framework for developing policies, making decisions, providing appropriate services for persons with disabilities, and meeting the requirements of planners, researchers and those interested in studies in the field of disability, the General Authority for Statistics (GaStat) issued) Report of the results of the "Survey of Persons with Disabilities in 2020, and in defining disability and classifying the degrees of difficulty in it, the authority relied on the expanded definition of the Washington Group on Disability Statistics

(WASHINQTON GROUP ON DISABILITY STATISTIC), which includes all degrees of disability difficulty; light, severe, and adult. The results showed The survey showed that the prevalence of (extremely) disability among the Saudi population was (2.9%) of the total Saudi population. According to the results, the Riyadh region is considered the highest in the presence of the Saudi population with disabilities among all regions, where the proportion of the Saudi population with disabilities in the Riyadh region (25.13%) of the total Saudi population with disabilities, while Najran region is considered the least in the region The presence of the Saudi population with disabilities in it among all regions, where the proportion of the Saudi population with disabilities reached (0.87%) of the total Saudi population with disabilities, and the survey results showed that the most prevalent difficulties among the Saudi population with disabilities who have one difficulty are difficulties Vision (visual), where the percentage of those who suffer from it is (46.02%) of the total Saudi population with disabilities who have one difficulty and the degree of its severity is distributed: mild (67.8%), severe (28.5%), and (3%) ,7) The most common difficulties among the Saudi population with disabilities who have multiple difficulties are the mobility difficulties, where the percentage of those who suffer from them reached (29.13%) of the total number of individuals with disabilities who have multiple difficulties, and the degree of their light severity is distributed (54.07%).), severe (29.22 percent), severe (16.71 percent)

Education of people with disabilities:

Persons with disabilities differ from others in the presence of a defect or deviation in a particular feature as mentioned previously, which requires special attention by educational institutions to deal with these different cases, as attention to groups with disabilities has become one of the issues that governments and various educational institutions focus on.

This is what Taiba (2017) emphasized, which is to achieve the principle of equal opportunities, which is one of the main pillars of the rights of persons with disabilities adopted by the United Nations, as it is the duty of the state to provide all facilities and remove all kinds of obstacles such as environmental and psychological obstacles ... etc., in order to achieve their access Comprehensive competition for seats and jobs offered as their peers.

In 2008, the Kingdom of Saudi Arabia ratified the United Nations Convention on the Rights of Persons with Disabilities, which guarantees equal rights for persons with disabilities and equal opportunities with the rest of society, whether in services, education or work (Human Resources Development Fund, 2017).

From this standpoint, the Kingdom of Saudi Arabia, in its vision 2030, sought to activate the role of higher education institutions to participate in achieving the comprehensive development vision for the future of the Kingdom, in which persons with disabilities paid great attention to make them good, productive, effective and integrated citizens in society. For this reason, higher education institutions have developed strategic plans for the conduct of staff and students; To carry out their responsibilities and give them their rights in accordance with laws and regulations that all parties abide by, and it has sought to raise the performance of its employees, improve administrative and academic work, and thus produce educational outcomes that are in line with the requirements of the development of the current era.

Sustainable Development Goals 2030

In September 2015, the 192 member states of the United Nations, including Saudi Arabia, adopted a resolution committing themselves to the 2030 Agenda for Sustainable Development. The 2030 Agenda and the associated 17 Sustainable Development Goals guide global and national development. Centered on the principle of leaving no one behind, the 17 Sustainable Development Goals is a comprehensive approach to achieving sustainable development for all. In all 17 SDGs, disability is referenced in multiple parts, particularly in relation to education, growth, employment, inequality and access to human settlements, as well as data collection and monitoring of the Sustainable Development Goals (UN.org). Goal 4 of the Sustainable Development Goals states: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.” Specifically, Target 4.5 states: “By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for vulnerable groups, including persons with disabilities.

Tinklin, Riddell, & Wilson, 2005 indicate that students with disabilities face obstacles that prevent the completion of their education, as these obstacles are related to their disability conditions at some point during the study process, in addition to the impact of some educational institutions and the selection of courses on some issues Physical access to the student.

Al-Futtaimani (2017) explains that the skills needed by students with disabilities are different from those needed by the average student, and therefore those skills need different teaching methods to meet those skills.

Al-Hadidi (2003) clarified some challenges for students with disabilities in higher education, including the inability of students with disabilities to easily adapt to the general atmosphere in universities, due to the difference and the exacerbation of the responsibilities and requirements expected of the university student, the weak cooperation of officials and faculty members to provide the appropriate academic environment to take care of these categories.

Studies dealing with the virtual learning environment:

The Shamis study (2019) aimed to present a proposed vision for a virtual university in the Republic of Yemen. The researcher led to a set of results, most notably the proposed vision for the university

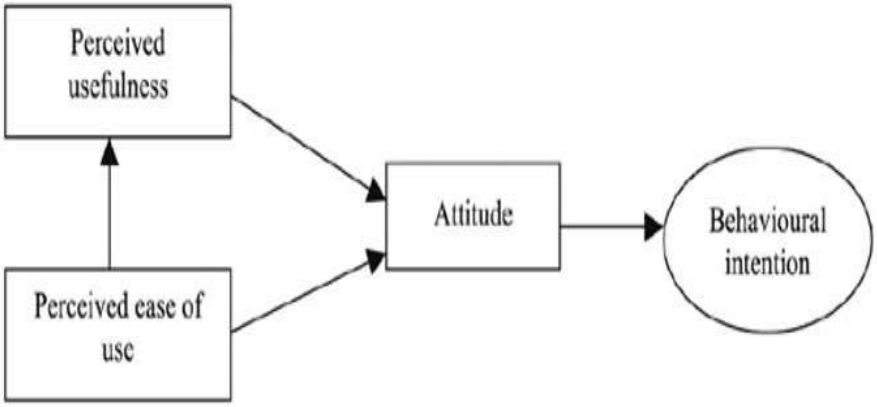
The study of Khalf (2015), which aimed to present a proposed vision for the development of higher education institutions in light of taking advantage of the features of the virtual university in the Republic of Finland, India and Canada, by identifying the philosophy of what the virtual university is in terms of concept, origin, justification, objectives and patterns in the educational literature, and to achieve Research objectives I used the problem-solving method and reached a number of results

Al-Quraini study, Hanan Al-Harthy, (2020), which aimed to reveal the nature of the challenges facing students with disabilities in Saudi public universities to benefit from the distance education system during the Corona pandemic

Mona Mohammed Al Hammadi's study (2018) The study aims to shed light on the challenges and obstacles that stand in the way of promoting and facilitating the access of students with visual disabilities to higher education in the United Arab Emirates and their enjoyment of the highest international standards in this field. The study sheds light on seven types of The challenges and restrictions faced by these students were: challenges related to preparing students with visual impairment for higher education, problems related to the ease of interaction of these students in higher education institutions, challenges regarding methods of facilitating and modifying exams, challenges in the classroom, challenges in studying some subjects, and restrictions in Choosing fields of study and personal challenges The results revealed by the study indicate that creating educational environments that embrace all students with disabilities in the higher education sector in the United Arab Emirates requires cooperation between the various stakeholders.

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is one of the most used models in educational research that seeks to explain and predict how users come to accept and use a technology (Hsu Venkatesh, 2000). Originally, the TAM was derived from the theory of reasoned action (TRA). Later, Davis developed the model in 1989, which aims to understand and predict user's acceptability of a new system. It is used mainly to identify the reasons behind user's rejection or acceptance of the system. This model believes that human behavioral intention is highly influenced with their perceived usefulness and perceived ease of use. Both constructs (perceived usefulness and perceived ease of use) eventually affect learners' attitude towards the system. Themodel has main four constructs, which is perceived ease of use, perceived usefulness; attitudes towards using and behavioral intention of use (see Figure 1).



Many studies adopted Technology Acceptance Model as a framework in their search to identify students' perception and acceptance of technology in the educational and learning environment. For example, Chew, Goh and Jamaluddin (2014) sought to identify students' perception towards lecture capture software and they found that students see recorded lectures as a very useful method that helps them to study better, doing their revision effectively and preparing themselves for examination in a good way. They also found that students see access the lectures anywhere and at any time as an ease of use to them. Thus, the results shows that students have a positive attitude on the use of lecture capture technology in the learning process. Moreover, Abd Majid, Ismail, Kassim, Kassim and Abu Bakar (2018) explored the students' perception in using virtual reality device in English language classroom and they found that students believe using virtual reality technology helps them to understand reading texts effectively and enhances their effectiveness in using different skills and strategies in reading. Overall, the students have positive perceptions in using virtual reality device in English classroom, but they see virtual reality device as a very useful in the classrooms more than see virtual reality device as ease of

use. This might be because students did not inform about the benefits of using virtual reality device in classrooms and how it can add the values in language learning.

However, as the current study seeks the students' perceptions of using virtual classes as a distance learning platform and their intention of usethem in the future, few studies dealt with this aspect, especially in the Saudi contexts. The current study also attempts to understand students' acceptance or rejection of use virtual classes as a distance-learning platform in the future. So, the researcher added perceived enjoyment and self-efficacy as another constructs in TAM that affects learners' attitude towards using virtual classes as a distance learning platform.

Aims of the study:

The study aimed to recognize the perceptions of students with special needs about the use of the virtual classroom as a platform for distance learning and intent for its future use by analyzing the technology acceptance model.

The study will seek to explore the following points:

1) The relationship between perceived ease of use and attitude of students with disabilities towards using the blackboard platform in the future.
2) The relationship between perceived usefulness of use and attitude of students with disabilities towards using the blackboard platform in the future.
3) The relationship between perceived Self-Efficiency of use and attitude of students with disabilities towards using the blackboard platform in the future.
4) The relationship between perceived enjoyment of use and attitude of students with disabilities towards using the blackboard platform in the future.
5) The relationship between perceived of efficacy of use and attitude of students with disabilities towards using the blackboard platform in the future.

Methodology:

In this scale quantitative study, the instrument that has been designed to meet the purposes of the study is a closed ended questionnaire; this research design is appropriate for studies that seek to obtain a numeric description of trends, attitudes, or opinions of a population by studying a sample from this population.

Participants:

The 863 available sample was chosen from university students, and the tool was applied electronically through the Google Form platform. The participants were informed of the objectives of the study. The sample was divided by gender into 319 (36.9%) males and 544 (63.1%) females. Participants divided by college type into 174 (20.2%) health colleges, 316 (36.6%) humanities colleges, and 373 (43.2%) engineering colleges.

Table (1)

Demographic characteristics of students with disabilities

variable	Categories	Repetition	Percentages
gender	Male	319	% 36.9
	Female	544	% 63.1
The University	Hail	56	% 6.4
	Princess Nourah bint Abdulrahman University	49	% 5.6
	Northern borders	45	% 5.2
	King Abdul-Aziz University	251	% 29.1
	Imam Abdulrahman bin Faisal University	85	% 9.8
	Al-Qassim	116	% 13.4
	Teba	63	% 7.3
	Tabuk	38	% 4.4
	Jazan	34	% 3.9
	Imam Muhammad Bin Saud Islamic University	125	% 14.4
Type of Disability	Blindness	261	% 30.2

	Hearing impairment	308	% 35.6
	Locomotor Disability	250	% 28.9
	Other disabilities	44	% 5.09

Black board usage as a necessary educational platform scale:

26 items distributed into six subscales as perceived efficacy, perceived of usefulness, attitudes, behavioral intension, perceived enjoyment, and perceived self-efficacy. The Perceived of efficacy has 4 items (1- 4). And perceived of usefulness was 5 items (5- 9). Then attitudes component has 5 items (10- 14). Whereas behavioral intension has 4 items (15- 18). The items of perceived enjoyment were 19 to 22. Finally, the perceived self-efficacy consisted of 4 items (23- 26). The items were positive wording. The five-point Likert scale (5 = always, 1 = never) was formulated to respondent item.

Statistical analysis:

Confirmatory factor analysis was used to test the construct validity of the scale. The internal consistency was calculated using Cronbach's alpha coefficient for the subscales. Descriptive indices of subscales, such as mean, variance, skewness, and kurtosis, were calculated. Cases that contained data outliers were excluded. Linear and multivariate normality calculated for the data. Structural equation modeling was estimated to verify the effects between the variables as assumed in the previous studies.

Results:

Construct validity:

CFA verified the scale's structure. Due to the heterogeneity of multivariate normality, the analysis performed using unweighted least square (ULS) method. The goodness of fit indices of the scale's structure was RMSEA= ,078; $X^2(284) = 3248.6$, P=.0000; NFI= .99; NNFI= 1; CFI= 1; GFI= 1; AGFI= .99. The fitting indices was best according to its criteria cut scores. The CFA factor loadings shown in Table 2.

Table 2

factor loading of

Component	No.	loadings	Std. error	t-value
Perceived of efficacy (α= .95)	1	.90	.0081	112.19
	2	.92	.0081	112.96
	3	.93	.0081	113.69
	4	.92	.0081	113.24
Perceived of usefulness (α= .89)	5	.85	.0084	101.76
	6	.79	.0082	96.18
	7	.72	.0081	89.11
	8	.75	.0081	91.66
	9	.80	.0082	96.67
Attitude (α= .73)	10	.89	.0081	110.31
	11	.89	.0081	109.77
	12	.89	.0081	109.93
	13	.81	.0077	104.09
	14	.25	.0065	38.92
Behavioral intension (α= .92)	15	.83	.0081	102.83
	16	.91	.0085	108.01
	17	.86	.0082	104.96
	18	.83	.0081	102.79
Perceived enjoyment (α= .93)	19	.90	.0082	109.66
	20	.78	.0077	101.29
	21	.90	.0082	109.66
	22	.90	.0082	109.31
Perceived Self-efficacy (α= .87)	23	.90	.0093	96.14
	24	.82	.0089	92.20
	25	.73	.0084	86.40
	26	.70	.0083	83.88

The perceived efficiency item factor loadings ranged from 0.90 to 0.92. The perceived usefulness loadings ranged from 0.72 to 0.85. The attitudes loadings ranged from 0.25 to 0.89. The behavioral intention loadings ranged from 0.83 to 0.91. The perceived enjoyment loadings ranged from 0.78 to 0.90. The perceived self-efficacy loadings ranged from 0.70 to 0.90.

The reliability coefficient using Cronbach's alpha coefficient was calculated for the items of the scale as a whole, and its value was 0.93. The alpha coefficient of the perceived of efficiency dimension was 0.95. The alpha coefficient of the perceived of usefulness dimension was 0.89. The alpha coefficient of the attitudes dimension was 0.73. The alpha coefficient of the behavioral intention dimension was 0.92, and the alpha coefficient of perceived enjoyment was 0.93. The perceived self-efficacy alpha coefficient was 0.87.

Descriptive statistics of the blackboard usage as educational platform Scale:

Averages, variance, skewness, and kurtosis were estimated for the variables. The results are as shown in the table 3.

Components	Mean	Variance	skewness	Kurtosis
Perceived of efficacy	12.41	24.66	.20	1.03
Perceived of usefulness	17.90	22.98	.60	.03
Attitude	16.20	21.49	.23	.41
Behavioral intension	12.80	20.83	.28	.72
Perceived enjoyment	12.34	22.97	.19	.92
Perceived Self-efficacy	14.25	16.69	.66	.02

Outliers: the outlier's points conducted for cases data to recognize the extent in the black board usage as the educational platform subscales. The outliers as in figure 1.

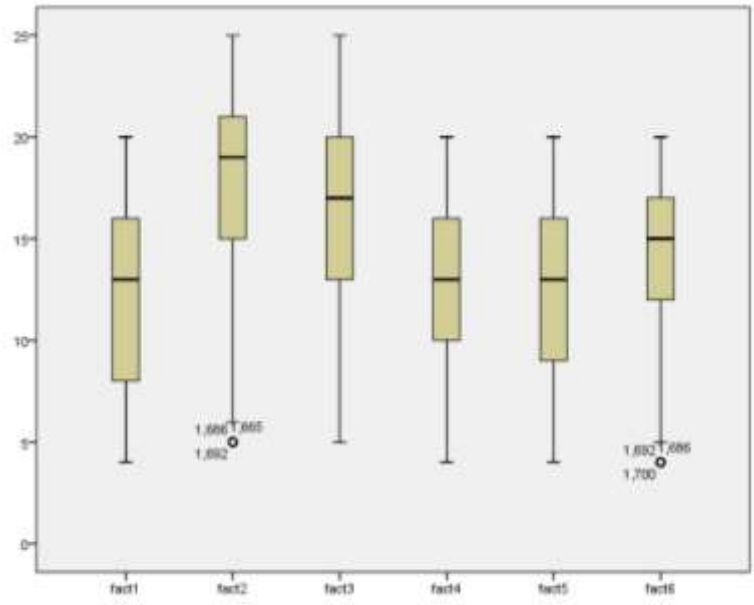


Figure 1.

The outliers of black board usage as the educational platform subscales.

As it possible to omitted negative outliers in the perceived of usefulness and perceived self-efficacy subscales. The study conducted the standardized data of that subscales to transformation data to omit the outliers.

Linearity: due to determination of the association between gender and the subscales, linearity test conducted these relationships as it shown in table 4.

Table 4.

Linearity test for the association between gender and subscales.

		Sum of Squares	df	Mean Square	F	Sig.
Perceived of efficacy	Between Groups	490.76	1	490.76	20.12	.000
	Within Groups	42079.89	1725	24.39		
	Total	42570.65	1726			
Perceived of usefulness	Between Groups	95.83	1	95.83	4.18	.041
	Within Groups	39559.44	1725	22.93		
	Total	39655.27	1726			
Attitude	Between Groups	222.51	1	222.51	10.41	.001

	Within Groups	36874.77	1725	21.38		
	Total	37097.28	1726			
Behavioral intension	Between Groups	45.99	1	45.99	2.21	.137
	Within Groups	35905.68	1725	20.82		
	Total	35951.67	1726			
Perceived enjoyment	Between Groups	93.26	1	93.26	4.07	.044
	Within Groups	39551.81	1725	22.92		
	Total	39645.07	1726			
Perceived Self-efficacy	Between Groups	27.11	1	27.11	1.63	.203
	Within Groups	28777.31	1725	16.68		
	Total	28804.42	1726			

The results revealed that relationships between gender and subscales isn't linear. The condition of linearity was violated.

Structural modeling of the study:

The unweighted least square (ULS) method used due to the analysis of structural equation modeling revealed the multivariate normality violation. The structural model has bad fit according to RMSEA= .85 and X^2 (2) = 2467.7, P= .000 because the analysis was sensitivity with normality violation. The model has best goodness of fit considering NNFI= .99, GFI= 1, SRMR= .038, AGFI= .99. The paths model as it shown in figure 2.

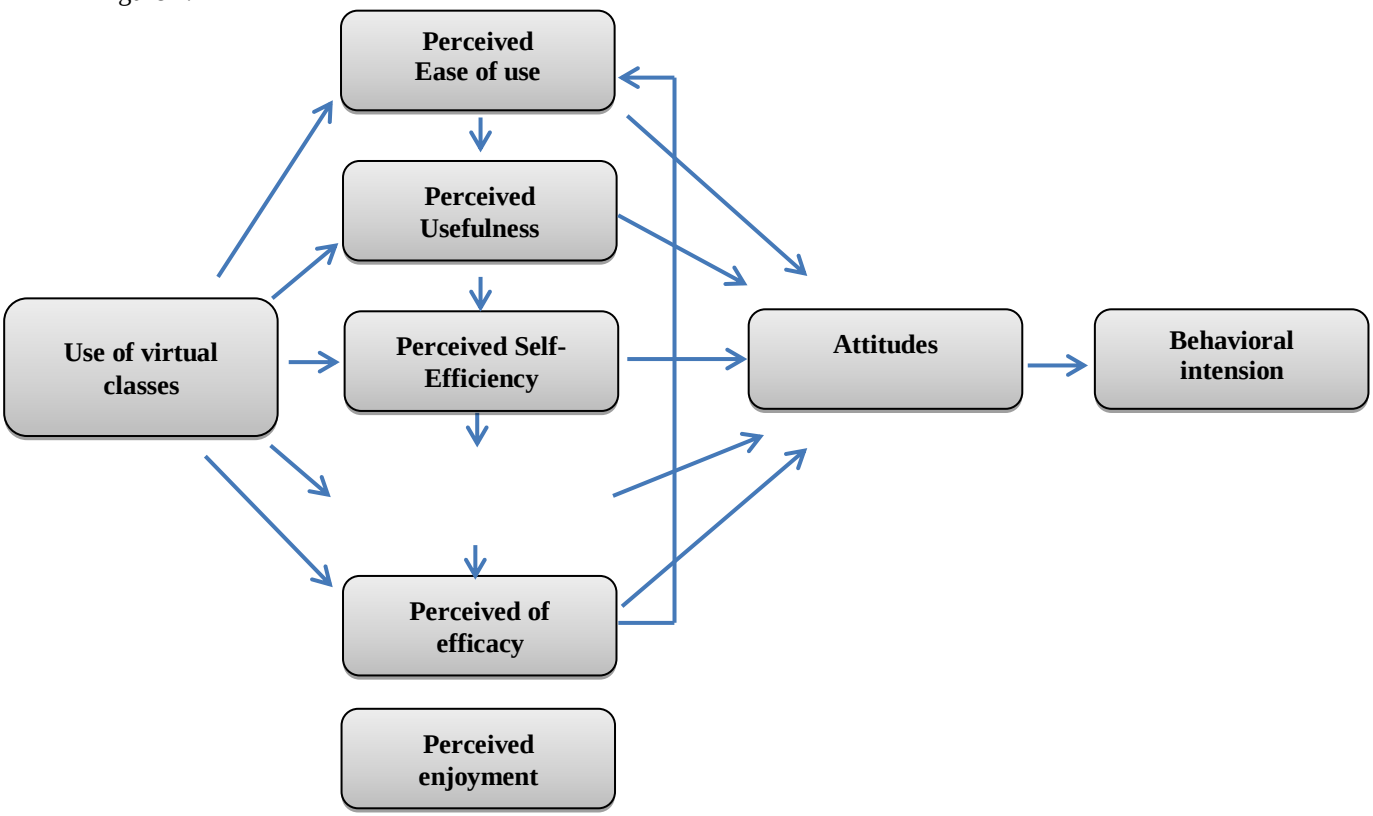


Figure 2. the structural modeling of study variable.

There is a direct, positive causal effect from the perceived ease of use to the perceived usefulness, meaning that an increase in perceived ease of use leads to more perceived usefulness. On the other hand, there is a positive effect from perceived ease of use to attitudes meaning that ease of use leads to an improvement in attitude towards blackboard use. A positive causal effect was found from perceived usefulness to attitudes, meaning that increasing perceptual feedback leads to improved attitudes toward the blackboard. Finally, a positive causal effect was found from attitudes to behavioral intention, meaning that the improvement in using Blackboard as an educational platform necessarily leads to an increase in intent to use the technology.

Validation of the first hypothesis

H1 "Perceived ease of use would positively influence students' with disabilities Attitude to use the Blackboard platform in the future".

To verify the validity of the first hypothesis, the researcher used Spearman's correlation coefficient to measure the relationship between perceived ease of use and the students' with disabilities attitude to use the Blackboard platform in the future, as shown in the following table:

Table (2) Spearman's correlation coefficients to measure the relationship between perceived ease of use and the students' with disabilities Attitude to use the Blackboard platform in the future

Variables	correlation coefficient	Significance level	Relationship Description
Perceived ease of use factor x Attitude factor towards using blackboard in the future	0.2673	Not statistically significant	A positive correlation

It is clear from Table 2 that there is a positive relationship between the scores of students with disabilities in the perceived ease of use factor and their scores towards using the Blackboard platform in the future, which indicates that the higher the scores of students with disabilities in the perceived ease of use factor, the higher their attitude towards using the Blackboard platform in the future. However, this relationship was not statistically significant, and the first hypothesis of the study is rejected, and this result can be attributed to the fact that the Blackboard platform is similar in its external design to social networking sites, which means that students with disabilities feel familiar with it, and this is reflected in its easy use by them.
This result is in agreement with the results of the study of...

Validation of the second hypothesis:
H2 ”Perceived usefulness positively affects the attitude of students with disabilities towards using the blackboard platform in the future.
To verify the validity of the second hypothesis, the researcher used Spearman's correlation coefficient to measure the relationship between perceived usefulness of use and the students’ with disabilities attitude to use the Blackboard platform in the future, as shown in the following table:

Table.(3) Spearman's correlation coefficients to measure the relationship between perceived usefulness of use and the students' with disabilities attitude to use the Blackboard platform in the future.

Variables	correlation coefficient	Significance level	Relationship Description
Perceived usefulness of use factor x Attitude factor towards using blackboard in the future	0.8070	Statistically significant at (0.01).	A positive correlation

It is clear from Table 3 that there is a positive relationship between the scores of students with disabilities in the perceived usefulness of use factor and their scores towards using the Blackboard platform in the future, which indicates that the higher the scores of students with disabilities in perceived usefulness of use factor, the higher their attitude towards using the Blackboard platform in the future, This relationship was positive and statistically significant at the level (0.01). thus, the second hypothesis of the study is accepted, and this result can be interpreted in light of the diverse learning resources available to students with disabilities through the platform’s library and are not restricted to a specific place or time, in addition to their ability to communicate through them with course professors and their colleagues and ask their questions and inquiries either in general or private
This result is in agreement with the results of the study of...

Validation of the third hypothesis:
H3”Perceived Self-Efficiency positively affects the attitude of students with disabilities towards using the blackboard platform in the future.
To verify the validity of the third hypothesis, the researcher used Spearman's correlation coefficient to measure the relationship between perceived self-efficiency of use and the students' with disabilities attitude to use the Blackboard platform in the future, as shown in the following table:

Table.(4) Spearman's correlation coefficients to measure the relationship between perceived self-efficiency of use and the students' with disabilities attitude to use the Blackboard platform in the future.

Variables	correlation coefficient	Significance level	Relationship Description
Perceived Self-Efficiency of use factor x Attitude factor towards using blackboard in the future	0.4773	Statistically significant at (0.05)	A positive correlation

It is clear from Table 4 that there is a positive relationship between the scores of students with disabilities in the perceived self-efficiency of use factor and their scores towards using the Blackboard platform in the future, which indicates that the higher the scores of students with disabilities in perceived self-efficiency of use factor, the higher their attitude towards using the Blackboard platform in the future, This relationship was positive and statistically significant at the level (0.01).
Thus, the third hypothesis is accepted, and this can be traced back to the fact that the study sample has gone through a variety of knowledge and skill experiences, which helped them acquire criteria that enable them to develop their sense of self-efficacy, and that the person's intrinsic motives become stronger with age, which increases his efficiency and ability to judge them.
This result is in agreement with the results of the study of...

Fourth hypothesis validation:
H4 **"Perceived enjoyment positively affects the attitude of students with disabilities towards using the blackboard platform in the future**.
To verify the validity of the Fourth hypothesis, the researcher used Spearman's correlation coefficient to measure the relationship between perceived enjoyment of use and the students' with disabilities attitude to use the Blackboard platform in the future, as shown in the following table:

Table.(5) Spearman's correlation coefficients to measure the relationship between perceived enjoyment of use and the students' with disabilities attitude to use the Blackboard platform in the future.

Variables	correlation coefficient	Significance level	Relationship Description
Perceived enjoyment of use factor x Attitude factor towards using blackboard in the future	0.5768	Statistically significant at (0.01)	A positive correlation

It is clear from Table 4 that there is a positive relationship between the scores of students with disabilities in the perceived enjoyment of use factor and their scores towards using the Blackboard platform in the future, which indicates that the higher the scores of students with disabilities in perceived enjoyment of use factor, the higher their attitude towards using the Blackboard platform in the future, This relationship was positive and statistically significant at the level (0.01).
Thus, the fourth hypothesis is accepted, and this can be traced back to the fact that the study sample has gone through a variety of knowledge and skill experiences, which helped them acquire criteria that enable them to develop their sense of self-efficacy, and that the person's intrinsic motives become stronger with age, which increases his efficiency and ability to judge them.
This result is in agreement with the results of the study of...

Validation of the fifth hypothesis:
H5**"Perceived of efficacy positively affects the attitude of students with disabilities towards using the blackboard platform in the future**.
To verify the validity of the fifth hypothesis, the researcher used Spearman's correlation coefficient to measure the relationship between Perceived of efficacy of use and the students' with disabilities attitude to use the blackboard platform in the future, as shown in the following table:

Table.(6) Spearman's correlation coefficients to measure the relationship between Perceived of efficacy of use and the students' with disabilities attitude to use the Blackboard platform in the future.

Variables	correlation coefficient	Significance level	Relationship Description
Perceived of efficacy of use factor x Attitude factor towards using blackboard in the future	0.4238	Statistically significant at (0.05)	A positive correlation

It is clear from Table 4 that there is a positive relationship between the scores of students with disabilities in the perceived of efficacy of use factor and their scores towards using the Blackboard platform in the future, which indicates that the higher the scores of students with disabilities in perceived of efficacy of use factor, the higher their attitude towards using the blackboard platform in the future, this relationship was positive and statistically significant at the level (0.01).
Thus, the fourth hypothesis is accepted, and this can be traced back to the fact that the study sample has gone through a variety of knowledge and skill experiences, which helped them acquire criteria that enable them to develop their sense of self-efficacy, and that the person's intrinsic motives become stronger with age, which increases his efficiency and ability to judge them.

This result is in agreement with the results of the study of...

Discussion:

The study confirmed that the Technology Acceptance Model (TAM) is an ideal theoretical framework, which helps to understand students with disabilities' use of virtual classrooms as an alternative to real classrooms, The validity of the model has been proven (Al-Faraih and Al-Kandari, 2014), (Earls Cowan, 2016, Dizon, 2016).

In light of the above, the researcher believes that the previous result indicates the importance of using virtual reality technology with Students` with disabilities, which can be considered as a tool that opens new horizons towards more effective learning, making Students` with disabilities feel as if they are part of the learning environment with what it can perform as an almost complete simulation. The educational situation has a significant impact on the senses, making Students` with disabilities more motivated to learn, as virtual reality environments are characterized by many characteristics that allow Students` with disabilities, including coexistence and immersion, ease of navigation, cooperative learning, and interaction, and the results are consistent with the study of (Salem, 2011, Brooks, Jain, & Brahnam, 2014 , Pons, & Torricelli, 2014).

The results showed that perceived ease of use has a positive and statistically significant effect on the trend towards using virtual classrooms, as these results indicate that students' positive view of the benefits and ease of use of the system helps create positive attitudes among students towards using virtual classrooms. Students are further identified according to the ease of use expected from a virtual classroom, which is a primary motivating factor in favor of a virtual classroom. Thus, student trends are determined based on the characteristics related to the system, which confirms the importance of clearly identifying students with those characteristics, and this is consistent with the study that confirmed that ease of use affects the level of student satisfaction, as they usually need an effort-free educational system.

The results of the study also agree with what was stated by (Saleh, 2017, Shmeis, 2019, Khalaf, 2015) that the virtual college is based on providing a type of indirect educational service that meets the needs of learners, which was demonstrated by the responses of the study sample members with disabilities.

Conclusion:

The present study may theoretically contribute to educational technology, particularly the use of virtual classrooms by college students as an alternative to real classes.

In general, students with disabilities have positive perceptions of using virtual classrooms as an alternative to real ones. According to the results, the perceived usefulness is seen as an important factor compared to the perceived ease of use, which positively influences students' attitude towards the use of virtual classrooms that leads to the intent to use it in the future. However, it is preferable that students need support and encouragement from both the faculty and the university on how to use the virtual classroom to succeed in achieving the educational goal.

Pay attention to perceived ease of use when designing courses using virtual classes because this factor has a positive impact on the actual and real use of students with disabilities.

The results showed the role of the perceived benefit factor in accepting technology based on virtual classrooms for people with disabilities, and therefore it is important to take into account the usefulness and value of applications that will be designed for people with disabilities so that the courses in virtual classrooms contribute to helping them solve problems and rely on themselves.

Conduct training courses for people with disabilities on the use of virtual classrooms so that they can be employed and enhance their use, and train faculty members and motivate them financially and morally to design courses to suit the needs of students with disabilities.

It is the perfect solution to some of the obstacles facing the traditional education system by providing the possibility that helps the learner to obtain data, information, communication and training through the Internet.

To gain insight and further understanding on this issue, qualitative methods, such as interviews, are needed to understand their views on using virtual classrooms as an alternative to real ones.

Suggestion for Further Study:

- It is suggested to present a more comprehensive and rich study, which is another field of future research, which is the need to conduct more studies directly related to the subject of the current study in order to gain a broader understanding of the role of virtual classrooms in developing the capabilities and development of personalities with disabilities.
- Expansion of studies that deal with standards for building electronic courses for people with disabilities, according to their type of disability.
- The foundations of developing interactive and non-interactive educational materials for people with disabilities in higher education.
- The effectiveness of virtual reality technology applications for people with disabilities in pre-university education and university education.

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