Original paper

The Role of Student Satisfaction on Student Commitment during the digital transformation era in Egypt: Higher education Sector

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ABSTRACT: In this article, we will examine whether students are satisfied with and committed to their e-learning experiences using a proposed model. It discusses a variety of variables and their effects on student satisfaction and academic commitment. Second, it examines the relationship between student satisfaction and commitment and each of the three variables examined, namely the course structure, the flexibility of online tutorials, and the quality of technology. The purpose of this research is to determine whether students are satisfied with and committed to their online learning experiences. Seven faculty members from an Egyptian higher education institution participated in a semi-structured interview with the researcher. This study analyses qualitative data collected online and via phone calls through interviews. The research is primarily concerned with students' commitment as behavior in e-learning, as well as their satisfaction with specific variables. The study focuses on a single institution of higher learning that utilizes e-learning technologies. The data analysis was conducted qualitatively rather than quantitatively, which may result in different interpretations of the results, which is considered a contribution. Other Egyptian higher education institutions' key variables require further investigation, with the possibility of expanding the investigation to other countries. Participants in this study will be individuals who are interested in student behavior in the digital age of e-learning and will find this research valuable

Keywords: Satisfaction, commitment, online learning, course structure, online tutorial flexibility, technology quality

INTRODUCTION

Electronic learning allows students to access a wide range of online resources whenever and wherever they choose. Students now have more control over their learning and course completion in online classes. To succeed in online courses, students must possess a wide range of skills, including technological proficiency, time management/organization, and online engagement (Joosten and Cusatis, 2020). Students may display varying readiness levels and preparedness for e-learning, which may impact their academic performance (Yeh et al., 2019). Higher education institutions can provide resources to help students assess their readiness and make preparation recommendations to increase their engagement (Joosten and Cusatis, 2020). Regarding instructional support, lecturers can help students improve their chances of succeeding in an online course by engaging them in activities that assist them in determining whether they are prepared and ready, acquiring the necessary skills (e.g., orientation), and managing their expectations about online learning (e.g., course tours and tips) (Agormedah et al., 2020; Joosten and Cusatis, 2020).

In March 2021, the Ministry of Communications and Information Technology (MCIT) reported that mobile subscriptions increased from 96.42 percent in March 2020 to 99.82 percent in March 2021, while mobile penetration increased from 96.01 to 97.99 percent. Additionally, mobile internet users increased from 40.70 million to 55.98 million, and subscriptions to USB

modems increased from 2.43 million to 3.30 million, according to the International Telecommunications Union. Aside from that, the number of ADSL subscribers increased from 7.53 million to 9.26 million, and the proportion of mobile Internet users in total mobile subscriptions rose from 42.21% to 56.08 % (Nashaat et al., 2021).

It is crucial to develop high-calibre, well-educated individuals and meet the world's growing demand for e-learning, which can be delivered online or through a blended learning environment. Numerous options are available to faculty members and students regardless of how the online content is produced (Alshehri, 2017). In addition, because students are not required to attend classes on campus, e-learning is a widely used tool for achieving educational standards. As a result, it is appropriate for students who wish to study while juggling other commitments (El-Ebiary et al., 2016; Nashaat et al., 2021).

For example, the world's most prestigious universities have begun to develop online programs and curricula, abandoning physical space in favor of digital platforms lowering educational investment costs while simultaneously providing students with more free time (Almashat, 2020). Since the COVID-19 crisis rocked the world, university students in Egypt have been taught entirely or partially/hybrid online courses in response to government directives (Mekky, 2021; Nashaat et al., 2021).

Institutions of higher education undergoing digital transformations must address issues such as integrating information and communications technology (ICT) into all phases of the teaching and learning process. The capacity of universities to prepare professional staff and students to face challenges and find solutions is critical (Bond et al., 2018; Sandkuhl and Lehmann, 2017). As a result, management must work collaboratively to implement any necessary changes because of recent technological advancements and the pandemic outbreak (Abad-Segura et al., 2020; Kopp et al., 2019; Leszczyński et al., 2018; Nashaat et al., 2021).

According to the results, this online delivery method is preferred by students and appears to be as useful as physical instruction in some cases. While students communicate with their instructors via screen sharing rather than in person, this approach, as opposed to a physical class in groups, may have made students feel less exposed when they sought assistance from their instructors. In addition, a more direct method of requesting help, such as asking questions online, may be preferred by students seeking assistance. This method of questioning may inspire greater confidence in the students rather than physically with their peers. Latest studies have stated findings similar to these (Davison, 2020) using online chat functionality to encourage student interaction was found to be effective (Dwivedi et al., 2020; Nashaat et al., 2021).

This study can significantly impact students' satisfaction with and commitment to online courses. This study may also influence academic institutions' online courses, particularly COVID-19. Additionally, this study has implications for university programs and online courses other institutions offer. Tutors and scholars can use the results and the proposed model to better inform their research or instruction to understand student satisfaction with and commitment to e-learning. Thus, while the course is being developed and taught, it can be tailored to the learners' needs and preferences (Nashaat et al., 2021).

The current study examines the relationship between student satisfaction and online tutorial flexibility, quality of online tutorials, and technology quality to understand better the variables affecting e-learning student satisfaction. Online courses in higher education have seen a significant rise in popularity since the COVID-19 pandemic. There is a correlation between students' satisfaction with and dedication to their educational institution and its educational program, explored further in this study. It was found that students' online learning experiences during Egypt's pandemic were shaped by several factors that were studied in a recent study by (Harsasi and Sutawijaya, 2018). The researchers examined the factors that shaped the online learning environment in which students found themselves during Egypt's pandemic when investigated by (Harsasi and Sutawijaya, 2018). They were composed of four distinct variables, one of which had a less significant effect on student satisfaction than the other three. In addition, one of the variables had a less significant impact on student satisfaction than the other three. So this paper will focus on three variables and build an initial model (Nashaat et al., 2021). The study's primary objective is to determine the effect of e-learning determinants such as course structure, online tutorial flexibility, and online tutorial quality on student satisfaction and commitment in e-learning.

In recent years, numerous studies on student satisfaction and commitment in online learning have been conducted. According to the findings of a recent study, the lower students' satisfaction with e-learning, the more likely the e-learning implementation will fail. Numerous variables influence students' satisfaction with e-learning. Furthermore, (Hermans et al., 2009) to successfully advocate for higher education, students must have a positive experience. These researchers examined various factors affecting student satisfaction in online learning environments and discovered that several of these factors are related (Alshehri, 2017; Nashaat et al., 2021).

A firm understanding of what constitutes happiness and a commitment was essential to achieving those goals. Student satisfaction is a metric that indicates how satisfied students are with their educational experience at a particular institution (Li et al., 2016). Universities cannot succeed academically unless their students are satisfied, and student satisfaction has expanded to include assessments in higher education services. According to (Elliott and Healy, 2001), Student satisfaction is a transitory state determined by students' interactions with educational services provided by their educational institutions. According to research, there is a correlation between an individual's commitment to the institution for which they are enrolled and career commitment,

implying that an individual's commitment to their academic institution is a predictor of their commitment to personal development. The term commitment has been redefined to more accurately reflect a student's commitment to his or her institution, and this definition has been updated to reflect this change (Nashaat et al., 2021; Womack, 2016).

Self-regulation in the form of commitment involves setting specific goals and taking concrete steps toward accomplishing them (Human-Vogel and Vogel, 2015). Students' commitment was assessed using a three-component model of effective, continuous, and normative commitment. The model included all three types of commitment: affective, continuous, and normative (Allen and Meyer, 1990). Affective and continuous commitment describe a person's attachment and involvement with a particular organization. Normative and ongoing obligations are distinct. Normative commitment refers to an individual's feelings of support and desire to remain in the company (Nashaat et al., 2021; Wilson et al., 2016). They conducted a study to investigate the factors that influence student satisfaction in e-learning based on previous research by (Sun et al., 2008) and (Eom et al., 2006),

Student satisfaction and course structure

Online learning's success is often attributed to its course design. According to (Moore, 1991), the course structure shows how rigid or flexible an educational program is when it comes to its goals and teaching methods and how it can accommodate or respond to the unique needs of each learner in the classroom. Furthermore, according to (Eom et al., 2006), increased student satisfaction and perceived learning outcomes have been linked to well-organized course materials (Eom et al., 2006; Nashaat et al., 2021).

Hypothesis 1: Course structure has a significant impact on student satisfaction.
Student satisfaction and online tutorials flexibility

Flexibility in terms of time, location, and method enhance student satisfaction and participation in online learning courses (Arbaugh, 2000; Arbaugh, 2002; Berger, 1999). Collaboration and interaction are encouraged by the absence of a traditional classroom setting. Students can communicate with one another at different times and locations thanks to the convenience of the Internet. Because the Internet is virtual, there is no need to deal with the awkwardness of traditional classroom communication. Students who participate in discussion groups have complete latitude in expressing themselves and conducting their chosen research. A flexible e-learning course is one in which students' views of the effectiveness and impact of incorporating e-learning into their working, studying, and commuting hours are defined (Nashaat et al., 2021; Sun et al., 2008).

Hypothesis 2: Online tutorials' flexibility significantly impacts student satisfaction.
Student satisfaction and technology quality

According to numerous studies, online education students are more satisfied when they access high-quality technology and the Internet (Piccoli et al., 2001; Webster, 1997). E-learning tools and software are more likely to be adopted when there are few barriers to use, and student satisfaction is expected to rise as a result (Amoroso and Cheney, 1991). In addition, online learning and discussion are possible thanks to tools like video conferencing. Online education has an enormous effect on both technology and the Internet itself. Two hundred forty-seven students use distance learning technology, and the quality and reliability of the technology affect learning outcomes. The quality of the IT used in e-Learning, such as microphones, earphones, and electronic whiteboards, is referred to as "technology quality" (Nashaat et al., 2021; Piccoli et al., 2001; Sun et al., 2008; Webster, 1997).

Hypothesis 3: Technology quality has a significant impact on student satisfaction.
Student satisfaction and student commitment

Understanding the attitudes of professors is critical in an academic setting because university performance is dependent on their employees' satisfaction and commitment (Tsui and Cheng, 1999). Therefore, a higher level of focus is required to ensure student satisfaction and commitment. It is claimed that academic employees will be more satisfied and committed to their educational institutions, which will lead to an increase in the university's output (Sami et al., 2012). However, according to some studies, satisfaction is linked to affective and normative commitment, but not to continuous commitment (Bashir and Ganai, 2019; Nashaat et al., 2021).

Hypothesis 4: Student satisfaction has a significant impact on student commitment.

RESEARCH HYPOTHESES

H1: Course structure has a significant impact on student satisfaction.
H2: Online tutorials' flexibility has a significant impact on student satisfaction.
H3: Technology quality has a significant impact on student satisfaction.
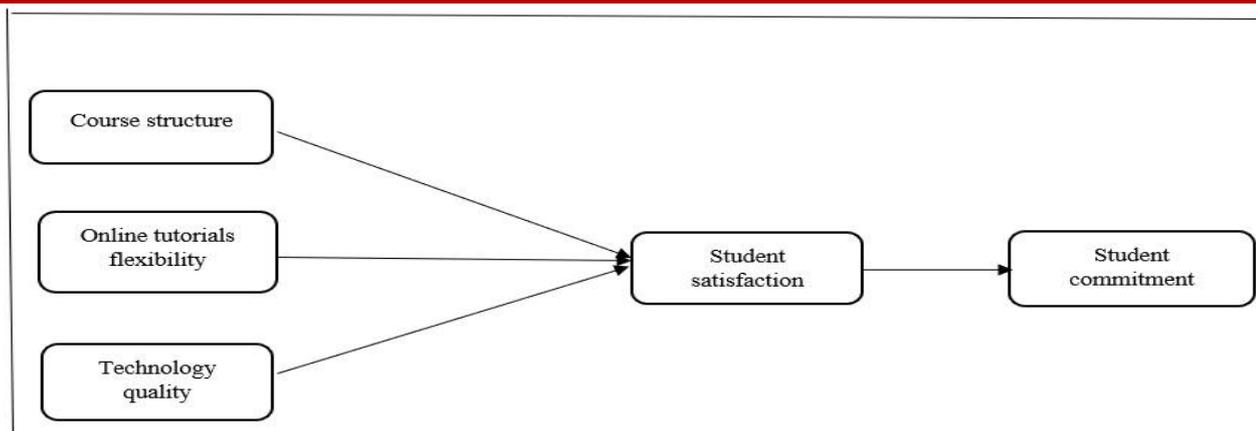*H4*: *Student satisfaction has a significant impact on student commitment.*

Fig. 1: The research model: *Source: Adapted from* (Nashaat et al., 2021)

METHODOLOGY

This study relied on three independent variables (course structure, flexibility of online tutorials, and technology quality) and one mediating variable (student satisfaction) by (Harsasi and Sutawijaya, 2018). Furthermore, the dependent variable (student commitment) was chosen based on previous research by (Wilson et al., 2016) and (Nashaat et al., 2021).

A semi-structured interview was used to collect the observed data. The target population consisted of faculty members from a single higher education institution, and due to the COVID-19 pandemic, the sample size was limited to 7 faculty members from one of Egypt's top accredited universities. Participants in the study included faculty members from the university's various colleges, including the College of Management and Technology, the College of International Transport and Logistics, the College of Language and Communication, the College of Computing and Information Technology, and the College of Engineering and Technology. There was no quantitative data included in the study and the data was analyzed by transcribing the responses without any statistical tool.

INTERVIEW QUESTIONS

Table1: Interview Questions

1.	**What do you think about the structure of online courses?**
2.	**How do you assess the flexibility of an online course?**
3.	**How do you assess the quality of an online course?**
4.	**What challenges do you think that students can face online?**
5.	**What are the reasons you think could motivate students to interact online?**
6.	**Do you think students are satisfied with the online learning process?**
7.	**Do you consider students committed to AASTMT?**
8.	**What could be the reasons that may cause students to transfer/drop out from AASTMT?**
9.	**Do you think the more satisfied the students, the more committed to AASTMT?**

Transcribing and coding of the interviewees' answers:

1. The self-efficacy of students academically:

Most faculty members value that students ask questions during lectures via Zoom meetings because it shows their focus and motivation for the lecture or whatever they are listening to. They believe students must ask questions to demonstrate their interaction with the Lecturer via the online learning portal. All the faculty members agreed that submitting assignments on time is dependent on the Lecturer's strictness in receiving assignments and imposing restrictions if the assignment is late. However, a few faculty members mentioned that some students like to ask questions for no reason and that questions should be asked at the end of the session or sent via email to save time for the class.

2. Determinants of online student satisfaction:

The course structure must be organized and clear for all students, particularly those using the e-learning gateway. This is something that all staff members agreed on, and they emphasized how important it is for students to have a clear understanding of what is happening and will happen in the course throughout the semester. Regarding flexibility, e-learning outperforms face-to-face learning because it can be accessed at any time and from any location. This means that lectures and sections are videotaped

and can be viewed later if the student is unable to attend at the time. When students use MOODLE as their learning platform, they have the option of accessing the material via laptop or smartphone. When discussing online course quality and technology, everyone agreed that the main issue or problem is technical issues on campus. If the technical issue is on the student's end, the student will be unable to access all the materials and Zoom meetings through MOODLE. This issue is beyond the Lecturer's control, and it is the student's responsibility to resolve it.

3. *Student satisfaction in e-learning:*

Giving grades for participation, allowing them to take breaks during the session, or assessing them through projects, presentations, or small quizzes are all ways to motivate students to be satisfied with online learning. Most of the staff assumed that all students were satisfied with the online learning process in general, but this satisfaction is based on the percentage of motivation they achieved from the online course taught to them. In other words, satisfaction increases when the course is more interactive in any way, which encourages students to interact and motivates them to attend this course online or offline. However, some staff members stated that some students are simply satisfied with the digital learning process because they stay at home. They are not attentive enough to pick up new knowledge or useful information.

4. *Student commitment:*

When it comes to commitment in general, students should be committed to the academic institution to which they belong by default. However, the percentage of commitment varies from student to student. All staff agreed that the more satisfied the students are with the course taught online, the more committed they will be to submitting the assignments of this course within the deadline, satisfied with the member(s) teaching this course, and satisfied with the institution in which he or she is learning in this course. However, many reasons are given by faculty members for students' lack of commitment to the course, the institution, or the online learning process itself. In some cases, the Lecturer is not qualified to teach this course and thus does not know. Furthermore, the method of communication with the students, whether by talking or using technology. In other words, some lecturers may be limited to only one communication platform, which may be inconvenient for some students.

SUMMARY OF INTERVIEW CASES

Interviews with stakeholders in education are summarized here as 7 cases. A summary of the cases that have been interviewed is shown in Table 2 showing information about faculty members. It illustrates a profile about each faculty member named as position, department, college, branch, and gender.

Table 2: Interview cases summary

Position	Department	College	Branch	Gender
Lecturer	Marketing & International Business	College of Management & Technology	Sheraton Heliopolis	Female
Lecturer	Finance & Accounting	College of Management & Technology	Sheraton Heliopolis	Female
Lecturer	Business Information Systems	College of Management & Technology	Sheraton Heliopolis	Male
Assistant Lecturer	Supply Chain	College of International Transport & Logistics	Sheraton Heliopolis	Female
Assistant Lecturer	Business Information Systems	College of Management & Technology	Sheraton Heliopolis	Female
Assistant Lecturer	Languages	College of Language & Communication	Sheraton Heliopolis	Female
Assistant Lecturer	Finance & Accounting	College of Management & Technology	Sheraton Heliopolis	Male

RESULTS and DISCUSSION OF INTERVIEW FINDINGS

Following several interviews with faculty members in higher education, it was discovered that most faculty members agree on the importance of variables on satisfaction in e-learning. Therefore, a semi-structured interview is used in this current study. Seven faculty members participate in the interview. Faculty members express their appreciation for students eager to ask questions or inquire about the syllabus. Furthermore, they state that most students submit their assignments on time, whereas others either submit late or do not submit any assignments. The structure of the courses is also well organized overall and the courses are of good quality and flexibility. On the other hand, they mention several challenges in terms of system accessibility, such as when the power goes out and the Internet is unavailable, resulting in no access to Moodle, taking time to upload or download files via Moodle, or even losing work after finishing it due to technical issues in Moodle. Finally, because technologies in the digitalization era are increasing, students are more likely to use e-learning.

Table 3: Interview responses

Interview Questions	Respondents' responses
1. What do you think about the structure of online courses?	R1: well-organized R2: same as the offline structure R3: organized R4: well-organized R5: well-organized R6: well-organized R7: not well-organized
2. How do you assess the flexibility of an online course?	R1: very flexible R2: very flexible R3: very flexible R4: very flexible R5: very flexible R6: very flexible R7: very flexible
3. How do you assess the quality of an online course?	R1: good quality R2: good quality R3: not good quality R4: not good quality R5: good quality R6: not good quality R7: not good quality
4. What challenges do you think that students can face online?	R1: technological challenges R2: quality challenges R3: technological challenges R4: technological challenges R5: technical challenges R6: technical challenges R7: quality challenges
5. What are the reasons that you think could motivate students to interact online?	R1: lecturer-student relationship, interactive course, flexibility anytime anywhere, non-physical attendance R2: flexibility anytime anywhere, interactive course R3: flexibility anytime anywhere, non-physical attendance R4: non-physical attendance, flexibility anytime anywhere R5: interactive course, lecturer-student relationship R6: flexibility anytime anywhere, non-physical attendance R7: lecturer-student relationship, interactive course, flexibility anytime anywhere, non-physical attendance
6. Do you think that students are satisfied with the online learning process?	R1: Satisfied R2: Satisfied R3: Satisfied R4: Satisfied R5: Satisfied R6: Satisfied R7: Satisfied
7. Do you consider students committed to AASTMT?	R1: Yes R2: Yes R3: Yes R4: Yes R5: Yes R6: Yes R7: Yes
8. What could be the reasons that may cause students to transfer/drop out from AASTMT?	R1: unqualified lecturers in courses, no strict policy applied to all students, using not up to date technologies for learning R2: unqualified lecturers in courses, financial issues R3: no strict policy applied to all students, using not up to date technologies for learning R4: unqualified lecturers in courses, better opportunity in another university R5: unqualified lecturers in courses, better opportunity in another university, financial issues R6: no strict policy applied to all students, using not up to date technologies for learning R7: unqualified lecturers in courses, better opportunity in another university
9. Do you think the more satisfied the students, the more committed to AASTMT?	R1: Yes R2: Yes R3: Yes R4: Yes R5: Yes R6: Yes R7: Yes

Many advantages make e-learning a great option for students, including time and place flexibility, virtual accessibility for courses and colleagues and professors, and accessibility from anywhere at any time. Students are motivated to adopt e-learning because of these benefits, and the availability of such benefits encourages students to continue using such technology in their learning process.

Furthermore, they state that if students are satisfied with e-learning, they are committed to their university in terms of being loyal to it, insisting on staying even if there are problems, having a sense of belonging to it, and finally the sense of responsibility that they must submit their assignments on time. However, they state that there are various reasons they may be able to transfer or cancel the courses. For example, the course is not well organized; the quality and flexibility of the course in terms of files available through Moodle; the syllabus content is not well understood by either the professor or the assistant; the quality of the technology itself in terms of problems viewing files or uploading or downloading files, and the lack of technical or organizational support to resolve issues related to e-learning or other academic issues.

This study examines several factors that influence student satisfaction because of online commitment. This can be to work out which factors have the best effect on students' satisfaction with the net learning process and investigate the impact of their online satisfaction on their commitment to their institution. Therefore, this research could greatly impact student satisfaction and commitment to online courses. Furthermore, after COVID-19, this study may have a bearing on academic courses and any courses taught online through educational institutions.

CONCLUSION

The current study used semi-structured interviews and qualitative analysis to investigate student commitment behavior during the COVID-19 pandemic and the key determinants of student satisfaction in e-learning. Unfortunately, few studies have been conducted to investigate students' satisfaction and commitment levels in Egyptian higher education during digitization. The study examined a sample of seven faculty members working in an Egyptian higher education institution to prove the validity of all the indicators of the variables in the proposed model. Even though the current study provides essential information for stakeholders and decision-makers concerned with student satisfaction and commitment in e-learning, it is limited to a single higher education institution in Egypt. The study should be expanded to include other higher education institutions in Egypt in various settings to address this limitation. In addition, academics and policymakers will benefit from understanding the behavior of students who are concerned about their commitment to their institutions. Future research and development could include putting the model through its paces at other higher education institutions to see how accurate it is at forecasting student satisfaction and commitment to e-learning. In addition, additional variables can be tested to see how they affect satisfaction and commitment. A final version of the interview questions was presented, interviews with educational decision-makers in Egypt, such as faculty members, were summarized and briefly illustrated in cases, interview findings were interpreted and discussed, and data collected was analyzed to summarize the findings.

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CONFLICT OF INTEREST:

The authors confirm no conflict of interest.

REFERENCES

Abad-Segura, E., González-Zamar, M.-D., Infante-Moro, J. C., andRuipérez García, G. (2020). Sustainable Management of Digital Transformation in Higher Education: Global Research Trends. *Sustainability, 12*(5), 2107.

Agormedah, E. K., Henaku, E. A., Ayite, D. M. K., andAnsah, E. A. (2020). Online learning in higher education during COVID-19 pandemic: A case of Ghana. *Journal of Educational Technology and Online Learning, 3*(3), 183-210.

Allen, N., and Meyer, J. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. . *Journal of Occupational Psychology*, 63, 61-18. doi:http://dx.doi.org/10.1111/j.2044-8325.1990.tb00506.x

Almashat, A. (2020). Virtual World...Coming. *Al Ahram Al Iktisadi,* p. p. 42.

Alshehri, A. F. (2017). Student satisfaction and commitment towards a blended learning finance course: A new evidence from using the investment model. *Research in International Business and Finance, 41*, 423-433. doi:https://doi.org/10.1016/j.ribaf.2017.04.050

Amoroso, D. L., and Cheney, P. H. (1991). Testing a Causal Model of End-User Application Effectiveness. *Journal of Management Information Systems, 8*(1), 63-89. doi:10.1080/07421222.1991.11517911

Arbaugh, J. B. (2000). Virtual classroom characteristics and student satisfaction with internet-based MBA courses. *Journal of Management Education, 24*(1), 32-54.

Arbaugh, J. B. (2002). Managing the online classroom. *The Journal of High Technology Management Research, 13*(2), 203-223. doi:10.1016/s1047-8310(02)00049-4

Bashir, B., Ganai, A. (2019). Testing the effects of job satisfaction on organizational commitment. *Journal of Management Development, ahead-of-print*. doi:https://doi.org/10.1108/JMD-07-2018-0210

Berger, N. S. (1999). Pioneering Experiences in Distance Learning: Lessons Learned. *Journal of Management Education, 23*(6), 684-690. doi:10.1177/105256299902300606

Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., andZawacki-Richter, O. (2018). Digital transformation in German higher education: student and teacher perceptions and usage of digital media. *International Journal of Educational Technology in Higher Education, 15*(1), 48. doi:10.1186/s41239-018-0130-1

Davison, R. M. (2020). The Transformative Potential of Disruptions: A Viewpoint. *International Journal of Information Management*. doi:https://doi.org/10.1016/j.ijinfomgt.2020.102149

Dwivedi, Y. K., Hughes, D. L., Coombs, C., Constantinou, I., Duan, Y., Edwards, J. S., . . . Upadhyay, N. (2020). Impact of COVID-19 pandemic on information management research and practice: Transforming education, work, and life. *International Journal of Information Management*. doi:https://doi.org/10.1016/j.ijinfomgt.2020.102211

El-Ebiary, Y., Al-Sammarraie, N., Moaiad, Y., andAlzubi, M. (2016). *The impact of Management Information System in educational organizations processes*.

Elliott, K., and Healy, M. (2001). CONTENTS Key Factors Influencing Student Satisfaction Related to Recruitment and Retention 1. *Journal of Marketing for Higher Education, 10*, 1–11. doi:10.1300/J050v10n04_01

Eom, S., Ashill, N., andWen, H. J. (2006). The Determinants of Students' Perceived Learning Outcomes and Satisfaction in University Online Education: An Empirical Investigation*. *Decision Sciences Journal of Innovative Education, 4*(2), 215-235. doi:10.1111/j.1540-4609.2006.00114.x

Harsasi, M., andSutawijaya, A. (2018). Determinants of Student Satisfaction in Online Tutorial: A Study of A Distance Education Institution. *Turkish Online Journal of Distance Education, 19*, 89-99. doi:https://doi.org/10.17718/tojde.382732

Hermans, C., Haytko, D., and most-Stenerson, B. (2009). Student Satisfaction in Web-enhanced Learning Environments. *Journal of Instructional Pedagogies, 1*.

Human-Vogel, S., andVogel, F. (2015). *Academic commitment and self-efficacy as predictors of academic achievement in additional materials science*.

Joosten, T., and Custis, R. (2020). Online learning readiness. *American Journal of Distance Education, 34*(3), 180-193.

Kopp, M., Gröblinger, O., andAdams, S. (2019). Five common assumptions that prevent digital transformation at Higher Education Institutions. *INTED2019 Proceedings*, 1448-1457.

Leszczyński, P., Charuta, A., Łaziuk, B., Gałązkowski, R., Wejnarski, A., Roszak, M., andKołodziejczak, B. (2018). Multimedia and interactivity in distance learning of resuscitation guidelines: a randomised controlled trial. *Interactive Learning Environments, 26*(2), 151-162. doi:10.1080/10494820.2017.1337035

Li, N., Marsh, V., Rienties, B., and Whitelock, D. (2016). Online learning experiences of new versus continuing learners: a large-scale replication study. *Assessment & Evaluation in Higher Education, 42*, 1-16. doi:10.1080/02602938.2016.1176989

Mekky, S. T. (2021). On-Line Learning Assessment: Egyptian Universities as a Case Study.

Moore, M. G. (1991). Editorial: Distance education theory. *American Journal of Distance Education, 5*(3), 1-6. doi:10.1080/08923649109526758

Nashaat, N., Abd El Aziz, R., andAbd El Azeem, M. (2021). The Mediating Role of Student Satisfaction in the Relationship between Determinants of Online Student Satisfaction and Student Commitment. *Journal of E-Learning and Higher Education, 2021*, 1-13.

Piccoli, G., Ahmad, R., andIves, B. (2001). Web-Based Virtual Learning Environments: A Research Framework and a Preliminary Assessment of Effectiveness in Basic IT Skills Training. *MIS Quarterly, 25*, 401-426. doi:10.2307/3250989

Sami, P., Sabri, U., Ilyas, M., andAmjad, Z. (2012). *Organizational Culture and Its Impact on the Job Satisfaction of the University Teachers of Lahore*. Retrieved from: https://www.researchgate.net/publication/236576996_Organizational_Culture_and_Its_Impact_on_the_Job_Satisfaction_of_the_University_Teachers_of_Lahore

Sandkuhl, K., andLehmann, H. (2017). Digital transformation in higher education–The role of enterprise architectures and portals.

Sun, P.-C., Tsai, R. J., Finger, G., Chen, Y.-Y., andYeh, D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education, 50*(4), 1183-1202. doi:10.1016/j.compedu.2006.11.007

Tsui, K. T., andCheng, Y. C. (1999). School Organizational Health and Teacher Commitment: A Contingency Study with Multi-level Analysis. *Educational Research and Evaluation, 5*(3), 249-268. doi:10.1076/edre.5.3.249.3883

Webster, J., & Hackley, P. (1997). Teaching effectiveness in technology-mediated distance learning. *Academy of Management Journal, 40*(6), 1282–1309. doi:https://doi.org/10.2307/257034

Wilson, M., Bakkabulindi, F., andSsempebwa, J. (2016). Validity and Reliability of Allen and Meyer's (1990) Measure of Employee Commitment in the Context of Academic Staff in Universities in Uganda. *JOURNAL OF SOCIOLOGY AND EDUCATION IN AFRICA, 14*.

Womack, A. J. (2016). *Profiles of Academic Commitment.* (Doctor of Philosophy (PhD)), The University of Southern Mississippi, Retrieved from https://aquila.usm.edu/dissertations/153

Yeh, Y.-C., Kwok, O.-M., Chien, H.-Y., Sweany, N. W., Baek, E., and McIntosh, W. A. (2019). How College Students' Achievement Goal Orientations Predict Their Expected Online Learning Outcome: The Mediation Roles of Self-Regulated Learning Strategies and Supportive Online Learning Behaviors. *Online Learning, 23*(4), 23-41.