

Students' Perceptions towards Online Assessment and its Relationship with their Motivation

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Abstract

The modern era is the miracle of science and technology using information and communication in every walk of life. ICT has become the basic need of humanity. The current study explored the students' perceptions of online evaluation and assessment. In addition, it was intended to investigate the relationship of different indicators of students' perceptions and motivation about online assessment. One hundred and thirty students were randomly selected from the campus of Education University. Descriptive and inferential statistics were applied for data analysis. The self-developed questionnaire, Students' Perceptions of Online Assessment and Motivation Survey [SPOAMS] were used. The results revealed that there was a moderate and weak positive correlation among all indicators of students' perceptions when they experience it during an online assessment. There was a moderate and strong positive correlation among all indicators of students' motivation when they experience it during an online assessment. A positive and strong relationship between students' overall motivation and online assessment perceptions. It was suggested that the online assessment system may be used as a parallel examination system for students.

Keywords: Online assessment, students' motivation, self-efficacy

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Introduction

The twenty-first century is the miracle of science and technology through the use of information and communication. Now a day, the use of computer technology is most blessings for human beings than for bread and butter. The distances have shortened and the progress in every wail of life has been a change from the physical world to digital investigations. Education has helped greatly through technological advancements and is mainly disseminated to nations with minor limitations. Learning through online modes makes people able to convey information without the physical resources of location, time, and infrastructural issues needed for correspondence (Mitra, Joshi, Kemper, Woods, & Gobble, 2006). The process of online tutoring and learning in virtual classes is recognized and used universally with computer technology in almost every class (Mitra et al., 2006).

In this paper, the online assessment is the procedure to conduct an online test to measure the students' learning about the mastery of a specific subject. An online assessment was administered with the help of google classroom suggested by the university. Individuals in opportunity publics additionally carry out to be the use of the laptop and use of the internet at fees associated with their accessories (Ervin & Gilmore, 1999; Webb, 2002). However, a few have recommended that there may be an opening among corporations in society with recognition to the usage of generation to decorate getting to know (Hackbrath, 2004; Judge, Puckett, & Bell, 2006).

What we realize approximately getting to know is a critical place to begin for exploring the usage of generation and the layout and fulfilment of online and combined getting to know. The foundation of powerful online getting to know is corresponding to the muse of powerful getting to know in general. Among the various theories surrounding how human beings examine, this paper makes a specialty of 3 components of getting to know, which in flip are tied to the usage of the net getting to know additives incorporated with inside the publications of the have a look at (Smart & Cappel, 2006). The research revealed that e-learning had moderate self-efficacy to achieve academic responsibilities (Ali, 2021).

Learning principle indicates that getting to know is promoted or enhanced (1) while college students are actively worried about the getting to know, (2) while assignments mirror real-lifestyles contexts and experiences, and (3) while important wondering or deep getting to know is promoted thru carried out and reflective sports (Bransford, Brown, & Cocking, 2000; Driscoll 2002).

Literature Review

Motivation is defined as a method through which people initiate and preserve activity. Motivation is usually regarded as a method through which a man or woman's desires and dreams are set (Alexander & Murphy, 1998; Pintrich, et al., 1993). Academic motivation displays college students' ranges of determination, a hobby with inside the problem and educational work (DiPerna & Elliot, 1999); it's far regarded as a sponsor to educational fulfillment (Alexander, 2006).

Motivation is severely critical to pupils getting to know (Pintrich & Schunk, 2002), loss of inspiration is a common trouble with college pupils in any respect range. All getting to know environments gift demanding situations, however, the online surroundings afford specific demanding situations due to the fact college students undergo extra obligation for his or her personal getting to know them than in lots of conventional classes. Because of those demanding situations, college students' cap potential to steer their motivation is critical (Wolters, Pintrich, & Karabenick, 2005).

The intrinsic motivation is described because the overall performance of a challenge for the innate pleasure it brings a man or woman instead of for a few separate consequences (Ryan & Deci, 2000). Intrinsic motivation seems to mix factors of attribution principle, Bandura's (1993) paintings on self-efficacy, and different research associated with aim orientation (Pintrich, 2001). Important to the existing intrinsic motivation may be associated with instructional context (Deci & Ryan, 2004).

Online evaluation can be described as a way of the use of computer systems to supply and examine checks or assessments and such structures had been round for the reason that seventies. Yet in lots of approaches, the net affords a brand new manner of handing over evaluation material. This is due to the fact it's far unbiased of time and place. Assessment can be divided into kinds. Firstly, formative evaluation on the stop of a duration of has a look at, wherein the effects are used that allows you to decide exam outcome. Secondly, summative evaluation, which is an evaluation that can be administered in the course of the presentation of a direction as a method of checking on pupil getting to know. Furthermore, college students may additionally investigate themselves periodically to test on progress (Graff, 2003).

Within any evaluation machine, query kinds may also vary. For example, questions may also encompass brief essay kind questions, proper or fake kind questions, or multiple-desire questions. There are many ability blessings of online evaluation to learners. For example, checks are to be had on call for and at any time. Furthermore, computerized evaluation structures deliver instant comments to the user; consequently,

customers examine via way of means of taking the test. However, online evaluation structures even have a downside in that scholars who understand themselves as owning terrible IT capabilities can be disadvantaged. Therefore, a have a look at of man or woman variations in attitudes toward laptop-primarily based getting to know is applicable here. Furthermore, man or woman variations in technique to one-of-a-kind query kinds had been located among people owning one-of-a-kind cognitive styles, (Riding & Read, 1996) and consequently it's far feasible that this could affect the fulfillment with which they have interaction with online evaluation.

Online assessment has become the most famous instructional strategy (Pillay, Irving, & Tones, 2007). It is a means of attaining many getting to know sources on the identical time in surroundings one-of-a-kind from conventional getting to know-coaching sports and via way of means of interacting extra than the magnificence surroundings in maximum cases (Çalışkan, 2002). As per Horton (2000), online assessment is getting a shape of schooling out over a browser or programs without the want for an extra software program and getting to know resources.

Online assessment no longer best encourages the usage of generation for getting to know and coaching method (Stein, et al., 2011), however additionally promotes improvement of pedagogical topics targeted on getting to know and use of virtual sources and communicate tools. This kind of getting to know can efficaciously assist in getting to know and enables instructional decisions (Gebre, et al., 2014; Osborne, et al., 2013). The instructional perspective is critical to decide and inspire the getting to know the management of college pupils for a robust online dialogue (Kim, et al., 2020). Think about the simplification of trainer, the college students indulge in extra common interplay and create dialogue environment (Oh, et al., 2018) and permits college students to reflect on consideration on their thoughts severely (Brooks & Jeong, 2006; Baran & Correria, 2009; Wang, 2008; Hew & Cheung, 2008). The usage of generation in schooling has to turn out to be inevitable for each man or woman and social motives in experienced tendencies (Usta, 2011). College students ought to use generation efficaciously that allows them to produce new thoughts and explicit their thoughts correctly (Hergüner et al., 2020).

Educational technology is an important part of creating a learning atmosphere that meets the needs of 21st-century pupils. These children have a variety of learning methods, but they are all internet-savvy and use technology to supplement their education. These tactics are stated to be founded on social learning theory and constructivism, in which scholars are active participants in their education. Students' perceptions of all

aspects of technology become increasingly important as they take more active roles in current learning methods.

A study conducted by Hassan, Zaheer & Khalid (2021) revealed that online learning and time management have a positive correlation with self-rating anxiety among learners. Regression indicated that time management was highly significant predictor of self-rating anxiety. Online learning perceptions in higher education institutions must develop a way to progress the use of technology and learning management systems (LMS) so that all stakeholders, particularly students, are satisfied (Aristovnik, et al., 2016; Papadakis, et.al., 2018). The attitude and views of pupils about technology in education are referred to as students' perceptions. Knowing students' perceptions is vital, according to Abdullah, Muait, and Ganefri (2019), because it affects their recognition of technology. Research has shown that the efficiency of using ICT in classrooms may be attained if elements affecting teachers' and students' opinions of its users and their experiences in an online learning environment are considered

The setup is scrutinized (Abdullah, Muaitand Ganefri, 2019; Aristovnik, et al., 2016; Kalogiannakis & Papadakis, 2019; Papadakis, et. al, 2018; Moreno-Guerrero, et. al, 2020; Ssekakubo, et al., 2013). Aristovnik et al. (2016) revealed that multiple factors influence students' perceptions of the effectiveness of e-courses. Papadakis, et al (2018) carried out a study to assess how university graduates perceive the use of instructional technology. Their research looked into how University of Crete students felt about LMS Moodle. According to the results, scholars did not regard Moodle to be a useful learning tool because mobile access was limited and reliable. In a survey conducted by Ssekakubo, Suleman, and Marsden (2013), learners from universities were asked about their suitable LMS access to the most needed services. Some studies looked into the elements that influence teachers' willingness to employ technology in the classroom. In their study, Kalogiannakis and Papadakis (2019) found that pre-service teachers' attitudes on the application of mobile technology in teaching have a major influence on their desire to utilize learning strategies, while students' perceptions had an adverse effect. Gender and age inequalities in the acceptability of smartphones in education were explored by Papadakis (2018). The findings demonstrated that neither component was significantly connected with smartphone acceptability, although they did highlight the importance of both criteria to properly integrate digital technology into educational practice, teachers must be trained.

Several researchers have found an affective dimension of students' learning is just as important as cognition and that academic performance

and student engagement are linked to the affective component at higher levels of motivation (Booth, 2010; Fared, et al., 2018; Jeong, et al., 2018, Jdaitawi, 2020). Scholars' attitude and their motivation, influence the learning process. The motivation to engage in a particular activity is defined as the rationale for doing so. When students see the relevance of learning activities and see how they may profit from them, they become motivated to participate in them in class. Tuan, Chin, and Shieh (2005) prepared a survey to assess students' desire to learn. Self-efficacy, effective learning techniques, classroom value, performance objective, achievement goal, and classroom instructional stimulation all are used to characterize motivation. Each one symbolizes a motivator for the learner to engage in science learning activities. Students' self-efficacy was defined as their belief in their abilities to complete a task. Students' responsibility in developing their information was emphasized in active learning strategies. Students' willingness to learn science was linked to their ability to see the subject's significance in their daily lives. The desire to exceed others is the emphasis of a performance objective. The achievement aim was about getting more competency as a source of incentive. Finally, learning environmental stimulation referred to the role of the curricula and classroom setup (Tuan, Chin, & Shieh, 2005).

Objectives of the Study

The objectives of the study were:

1. Explore the learners' perceptions toward online evaluations.
2. Determine the characteristics that influence students' perceptions about online assessment.
3. Investigate the relationship of different indicators of students' perceptions about online assessment.
4. Examine the relationship of different indicators of students' motivation during an online assessment.

Research Questions

The research questions were:

1. What are the learners' perceptions toward online evaluations?
2. What are the characteristics that influence students' perceptions about online assessment?
3. Is there any relationship of multiple factors of students' perceptions about online assessment?

4. Is there any relationship of multiple factors of students' motivation during an online assessment?

Research Methodology

Research Design. It was a descriptive study that used survey method to collect data.

Population and Sample. The population were of all the students studying in UE Campus Faisalabad. One hundred and thirty pupils were casually selected from different departments of the campus. The students were selected from different semesters.

Instrumentation. The Students' Perceptions of Online Assessment and Motivation Survey instrument was pilot tested and validated from experts. The Cronbach Alpha value was .926 that was excellent to conduct study. The instrument, Students' Perceptions of Online Assessment and Motivation Survey [SPOAMS] was used. There were twenty items about an online assessment perception. The factors of the perceptions were easiness and time management using online assessment, Preference and reduced administrative burden, use of digital literacy, immediate feedback, and individualized learning. The indicators of motivation were: self-efficacy, effective learning strategies, achievement inspiration, stimulation, managing digital tools, and self-regulated learning. The results of the statistical analysis and students' surveys are presented in the following arrangement

Research Procedure. The online survey was conducted by researchers. The survey items were taken from many research studies (**Valdez & Maderal, 2021**) during the literature review. The survey was made during an online assessment during COVID-19. The survey was conducted using Google classroom adopted by the campus.

Data Analysis

The statistical analysis results and students' surveys are presented below about easiness and time management using online assessment, preference, reduced administrative burden, and motivation levels of students towards online assessment. The interpretation is made as per alignment with previous studies.

Table 01
Factors about the perceptions of Online Assessment

S#	Indicators	Mean	SD
1	Easiness and Time management using online assessment	3.572	.627
2	Preference and reduced administrative burden	4.166	.578
3	Use of digital literacy	3.683	.659
4	Immediate feedback	3.743	.522
5	Individualized learning	3.544	.668
	Overall Perceptions	3.615	.444

Table 01 revealed the five factors about the perceptions of online assessment as perceived by the students. The indicator of easiness and time management using online assessment had a mean of 3.572 and standard deviation value of .627. The indicator of preference and reduced administrative burden had 4.166 mean values and .578 standard deviation values. The indicator of the use of digital literacy had 3.683 mean values and a .659 standard deviation value. The indicator of immediate feedback had 3.743 mean values and a .522 standard deviation value. The indicator of individualized learning had 3.544 mean values and a .668 standard deviation value. Overall students had a positive perception of an online assessment system with mean values 3.615 and .444 standard deviation value.

Table 02
Factors about the students' motivation in an Online Assessment

S#	Indicators	Mean	SD
1	Self-efficacy	3.563	.724
2	Effective learning strategies	3.536	.686
3	Achievement inspiration	3.709	.506
4	Stimulation	3.707	.519
5	Managing digital tools	3.418	.520
6	Self-regulated learning	3.707	.519
	Overall Motivation	3.657	.459

Table 02 revealed the four factors about the perceptions of online assessment as perceived by the students. The indicator of self-efficacy had a mean of 3.563 and standard deviation value of .724. The indicator of effective learning strategies had 3.536 mean values and a .506 standard deviation value. The indicator of stimulation had 3.707 mean values and a .520 standard deviation value. The indicator of managing digital tools had 3.418 mean values and .520 standard deviation values. The indicator of self-regulated learning had 3.707 mean values and a .519 standard deviation value. Overall, students had been

positively motivated by an online assessment system with mean value 3.657 and .459 standard deviation value.

3. Is there any relationship between multiple factors of students' perceptions about online assessment?

Table 03
Perceptions of the students about Online Assessment

	1	2	3	4	5	6
Easiness	1					
Reduced Burden	.350**	1				
Digital Literacy Use	.404**	.292**	1			
Immediate Feedback	.273**	.260**	.462**	1		
Individualized Learning	.335**	.389**	.359**	.420**	1	
Overall Perceptions	Online.271**	.150	.214*	.007	.175*	1

**significant at 0.01 and * 0.05 levels

Table 03 indicates a moderate and weak positive correlation among all indicators of students' perceptions when they experience during an online assessment.

4. Is there any relationship of multiple factors of students' motivation during an online assessment?

Table 04
Correlation among Students' Motivation Factors in an Online Assessment

	1	2	3	4	5	6	7
Overall Self-1							
Efficacy Effective Learning Strategies	.498**	1					
Achievement Inspiration	.818**	.666**	1				
Stimulation Managing Digital Tools	.578**	.501**	.728**	1			
Self-regulated Learning	.457**	.737**	.584**	.455**	1		
Overall Motivation	.578**	.501**	.728**	1.000**	.455**	1	
	.632**	.674**	.755**	.590**	.640**	.590**	1

**significant at 0.01 level

Table 04 indicates a moderate and strong positive correlation among all indicators of students' motivation when they experience it during an online assessment.

Table 05

Correlation between Students' Overall Motivation and Online Assessment Perceptions

Indicators	Overall Motivation	Overall Perceptions
Overall Motivation	1	.671**
Overall Perceptions	.671**	1

Table 05 indicated a strong positive correlation between students' overall motivation and online assessment perceptions.

Results and Discussion

The results revealed that all the indicators had a moderate and weak positive correlation among all indicators of students' perceptions when they experience an online assessment. There was a moderate and strong positive correlation among all indicators of students' motivation when they experience it during an online assessment. The study's findings indicated that students have a favourable attitude about the utilization of online examinations. They agreed that incorporating technology into the way they conduct evaluations is a beneficial innovation since it helps them to receive immediate feedback and findings. In addition, the vast majority of students used assessment tasks to prepare for the exams. The study results are consistent with those of Adanir, et al. (2020), who found that Kyrgyz students believe that online assessments can promote learning by providing quick feedback.

Students' self-efficacy accounted for their competence in dealing with complex subjects in class. This assessed the students' sense of self-sufficiency and confidence in their ability to excel in the topic and solve challenging analytical challenges. The students show a high level of self-efficacy, with the overall mean indicating that they are confident in their ability to perform well rationally (Doménech-Betoret, Abellán-Roselló, & Gómez-Artiga, 2017). The third component is effective learning approaches that assessed students' enthusiasm to participate in activities, especially when new analytical concepts were offered. This was used to see if students were able to connect their previous knowledge to the new concepts and if they were able to explain their mistakes. Students' motivation is dependent on this element, which means that even if they make mistakes or find subjects difficult to grasp, they continue to

participate in activities. The instructional value was focused on the drive that comes from understanding the value of various subjects.

Analytical reasoning, according to the students, is important in their daily lives and their fields of study. Leadership action that creates a feeling of direction and purpose provides necessary resources, and allows individuals to take responsibility is known as achievement inspiration. True achievement, on the other hand, requires a leader to take action, generate and implement new ideas, learn from mistakes, and bring an idea to life. The fourth aspect is motivation, which is measured by pupils' desire to outperform their peers. A self-regulated learning environment allows students to engage in sufficient class interaction while also exposing them to a variety of challenging learning tactics. The pupils agreed that the classroom setup was also important activities in making the learners more willing to contribute in class.

Conclusion

It was confirmed by the findings of Sarmiento (2017) and Baleni (2015) that taking online exams allowed students to evaluate their results to improve their study habits as the last preparation for tests. The students discovered that using online assessments offered varied teaching-learning tactics in class. The findings support the recommendation in providing scholars with a diverse range of activities (Denzine & Brown, 2014), and Wanner & Palmer's (2015) results that students appreciated the classroom assessment options in the flipped classroom.

Reference

- Abdullah, R., Muait, J., & Ganefri, (2019). Students' perception towards modern technology as teaching aids. *Asian Journal of Assessment in Teaching and Learning*, 9(2), 37-42. DOI: 10.37134/ajatel.vol9.no2.5.2019.
- Adanır, G., İsmailova, R., Omuraliev, A., & Muhametjanova, G. (2020). Learners' perceptions of online exams: A comparative study in Turkey and Kyrgyzstan. *International Review of Research in Open and Distributed Learning*, 21(3), 1-17. <https://doi.org/10.19173/irrodl.v21i3.4679>
- Alexander, P. A., & Murphy, P. K. (1998). The research base for APA's learner-centered psychological principles. In N.M. Lambert, & B.L. McCombs (Eds.), *How students learn: Reforming schools through learner-centered education* (pp. 25- 60). Washington D. C.: American Psychological Association. Ames.
- Ali, S. (2021). E-learners' self-efficacy for online courses: Self-efficacy for IT use as a predictor for academic self-efficacy. *Pakistan Journal of Distance & Online Learning*, 7(2), 8-104.
- Allen, E., & Seaman, J. (2006). *Making the grade: Online education in the United States*. http://www.sloan-c.org/publications/survey/making_the_grade_southern06
- Aristovnik, A., Keržič, D., Tomažević, N., & Umek, L. (2016). *Determining factors of students' perceived usefulness of e-learning in higher education*. Paper presented at the International Association for Development of the Information Society (IADIS) International Conference on e-Learning, Madeira, Portugal, Jul 1-4, 2016, Part I (3-10), ERIC, <https://files.eric.ed.gov/fulltext/ED571462.pdf>
- Baleni, Z. (2015). Online formative assessment in higher education: Its pros and cons. *The Electronic Journal of e-Learning*, 13(4), 228-236.

- Baran, E., & Correia, A. P. (2009). Student-led facilitation strategies in online discussions. *Distance Education, 30*(3), 339-361.
- Booth, G. (2010). *The effects of homework assessment on student motivation and achievement* [Doctoral dissertation]. Central Washington University).
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). How people learn: Brain, mind experience, and school committee on developments in the science of learning. Commission on Behavioral and Social Sciences and Education of the National Research Council. Washington CD: National Academy Press.
- Brooks, C. D., & Jeong, A. (2006). Effects of pre-structuring discussion threads on group interaction and group performance in computer-supported collaborative argumentation. *Distance Education, 27*(3), 371-390.
- Çalışkan, H. (2002). *Çevrimiçi (Online) eğitimde öğrenci etkileşimi*. Eskişehir: Açık ve Uzaktan Eğitim Sempozyumu.
- Deci, E. L., & Ryan, R. M. (2004). Handbook of self-determination research. Rochester, NY: Boydell and Brewer.
- Dempsey, J. V., & Van Eck, R. N. (2002). Instructional design on-line: Evolving expectations. In R. A. Reiser & J. V. Dempsey (Eds.), *Trends and issues in instructional design and technology* (pp. 281–294). Upper Saddle River, NJ: Merrill Prentice Hall.
- Denzine, G., & Brown, R. (2015). *Motivation to learn and achievement*. In R. Papa (ed) *Media rich instruction* (19-34). Cham: Springer.
- DiPerna, J. & Elliot, S., (1999). Development and validation of the academic competence evaluation scales. *Journal of Psychoeducational Assessment, 17*, 207-225.

- Doménech-betoret, F., Abellán-roselló, L., & Gómez-artiga, A. (2017). Self-efficacy, satisfaction, and academic achievement: the mediator role of students' expectancy-value beliefs. *Frontiers in psychology*, *8*, 1193. <https://doi.org/10.3389/fpsyg.2017.01193>
- Eccles, J. (1983). Expectance, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives: Psychological and social approaches* (pp. 75–146). San Francisco: Freeman.
- Ervin, K. S., & Gilmore, G. (1999). Traveling the super information highway: African Americans' perceptions and use of cyberspace technology. *Journal of Black Studies*, *29*, 398-407.
- Fared, J., Jdaitawi, M., & Sheta, H. (2018). Fostering positive adjustment behavior: Social connectedness, achievement motivation and emotional-social learning among male and female university students. *Active Learning in Higher Education, [e-journal]*, *19*(2), 145-158. doi.10.1177/1469787417731202
- Fujita-Starck, P. J., & Thompson, J. A. (1994). *The effects of motivation and classroom environment on the satisfaction of noncredit continuing education students. AIR 1994 Annual Forum Paper.* <https://eric.ed.gov/?id=ED373646>
- Gebre, E., Saroyan, A., & Bracewell, R. (2014). Students' engagement in technology rich classrooms and its relationship to professors' conceptions of effective teaching. *British Journal of Educational Technology*, *45*(1), 83-96.
- Graff, M. (2003). Cognitive style and attitudes towards using online learning and assessment methods. *Electronic Journal of E-Learning*, *1*(1), 21–28. [http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.207.212 & rep=rep1&type=pdf](http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.207.212&rep=rep1&type=pdf)
- Hackbrath, S. (2004). Changes in 4th graders' computer literacy as a function of access, gender, and race. *Information Technology in Childhood Education Annual*, *1*, 187-212.

- Hassan, K., Zaheer, H., & Khalid, S. (2021). Relationship among online learning, time management and self-anxiety of university students during COVID-19. *Pakistan Journal of Distance & Online Learning*, 7(2), 69-86.
- Hergüner, G., Buğra SON, S., Hergüner Son, S., & Dönmez, A. (2020). The effect of online learning attitudes of university Students on their Online Learning Readiness. *TOJET: The Turkish Online Journal of Educational Technology*, 19(4), 102–111.
- Hew, K. F., & Cheung, W. S. (2008). Attracting student participation in asynchronous online discussions: A case study of peer facilitation. *Computers & Education*, 51(3), 1111-1124.
- Horton, W. (2000). *Designing web based training*. New York: John Wiley & Sons.
- Jdaitawi, M. (2020). Does flipped learning promote positive emotions in science education? A comparison between traditional and flipped classroom approaches. *Electronic Journal of e-learning, [e-journal]*. 18(6), pp. 516-524. doi: 10.34190/JEL.18.6.004
- Jeong, J., Canada, F., & Gomez, D. (2018). The study of flipped classroom for pre-service Science teachers. *Education Science, [e-journal]*, 8(4), 163. doi:10.3390/educsci8040163.
- Kalogiannakis, M., & Papadakis, S. (2019). Evaluating pre-service kindergarten teachers' intention to adopt and use tablets into teaching practice for natural sciences. *International Journal of Mobile Learning and Organisation*, 13. doi: 10.1504/IJMLO.2019.096479
- Kim, M. K., Wang, Y., & Ketenci, T. (2020). Who are online learning leaders? Piloting a leader identification method (LIM). *Computers in Human Behavior*, 105, 106-205.

- Lepper, M. R., & Cordova, D. I. (1992). A desire to be taught: Instructional consequences of intrinsic motivation. *Motivation and Emotion, 16*, 187–208.
- Lim, D. H. (2004). Cross cultural differences in online learning motivation. *Educational Media International, 41*(2), 163–173.
- Mitra, A., Joshi, S., Kemper, K. J., Woods, C., & Gobble, J. (2006). Demographic differences and attitudes toward computers among healthcare professionals earning continuing education credits on-line. *Journal of Educational Computing Research, 35*, 31-43.
- Moreno-Guerrero, A., Aznar-Diaz, I., Caceres-Reche, P. & Alonoso-Garcia, S. (2020). E-learning in the teaching of mathematics: An educational experience in adult high school. *Mathematics, 8*(5), 840. doi:10.3390/math8050840
- Oh, E. G., Huang, W. H. D., Mehdiabadi, A. H., & Ju, B. (2018). Facilitating critical thinking in asynchronous online discussion: Comparison between peer-and instructor-redirection. *Journal of Computing in Higher Education, 30*(3), 489-509.
- Papadakis, S. (2018). Evaluating pre-service teachers' acceptance of mobile devices with regards to their age and gender: A case study in Greece. *International Journal of Mobile Learning and Organisation, 12*(4), 336. DOI:10.1504/IJMLO.2018.095130
- Pillay, H., Irving, K., & Tones, M. (2007). Validation of the diagnostic tool for assessing tertiary students' readiness for online learning. *Higher Education Research & Development, 26*(2), 217-234.
- Pintrich, P.R. (2001). An achievement goal theory perspective on issues in motivation terminology, theory, and research. *Contemporary Educational Psychology, 25*, 92-104.
- Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education: Theory, research and applications*. Englewood Cliffs, NJ: Prentice Hall Merrill.

- Riding, R. J., & Read, G. (1996). Cognitive style and pupil learning performances. *Educational Psychology, 16*, 81- 106.
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivation: Classic definitions and new directions. *Contemporary Educational Psychology, 25*, 54-67.
- Sarmiento, C. (2017). Student perceptions of online homework in mathematics of accounting and finance. *Advanced Science Letters, 23*, 1122-1125.
- Smart, K., & J. Cappel, J. (2006). Students' perceptions of online learning: A comparative study. *Journal of Information Technology Education: Research, 5*, 201–219. <https://doi.org/10.28945/243>
- Ssekakubo, G., Suleman, H., & Marsden, G. (2013). Designing mobile LMS interfaces: learners' expectations and experiences. *Interactive Technology and Smart Education, 10*(2), 147-167.
- Stein, S. J., Shephard, K., & Harris, I. (2011). Conceptions of e-learning and professional development for e-learning held by tertiary educators in New Zealand. *British Journal of Educational Technology, 42*(1), 145-165.
- Tuan, H., Chin, C., & Shieh, S. (2005). The development of a questionnaire to measure students' motivation towards science learning. *International Journal of Science Education, 27*(6), pp. 639-654.
- Usta, İ., Uysal, Ö., & Okur, M. R. (2016). Çevrimiçi öğrenme tutum ölçeği: Geliştirilmesi, geçerliği ve güvenirliği. *Journal of International Social Research, 9*(43).
- Valdez, M. T. C. C., & Maderal, L. D. (2021). An analysis of students' perception of online assessments and its relation to motivation towards Mathematics learning. *The Electronic Journal of e-Learning, 19*(5), 416-431.

- Vallerand, R. J., & Bissonnette, R. (1992). Intrinsic, extrinsic, and motivational styles as predictors of behavior: A prospective study. *Journal of Personality*, 60, 599–620.
- Wanner, T., & Palmer, E. (2015). Personalising learning: Exploring student and teacher perceptions about flexible learning and assessment in a flipped university course. *Computers & Education*, 88, 354-369.
- Wang, Q. (2008). Student-facilitators' roles in moderating online discussions. *British Journal of Educational Technology*, 39(5), 859-874.
- Wolters, C. A., Pintrich, P. R., & Karabenick, S. A. (2005). Assessing academic self-regulated learning. In K. A. Moore and L. H. Lippman (Eds). *What do children need to flourish?* (pp. 251-270). New York: Springer.

<p>Iqbal, A., Khalid, M. N. & Shafiq, F. (2022). Students' perceptions towards online assessment and its relationship with their motivation. <i>Pakistan Journal of Distance and Online Learning</i>, 8(1), 71–88.</p>
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