The impact of social studies teachers' use of e-learning techniques to develop student's perceived self-efficacy

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ABSTRACT

Private universities in Jordan have witnessed a major shift in teaching methods and strategies, as e-learning techniques have become an integral part of the educational policies followed. Therefore, the study aimed to identify the effect of social studies teachers' use of e-learning techniques in developing the perceived self-competencies of university students, depending on gender and field of specialization. To achieve this, the descriptive analytical method was used in conducting the study. The perceived self-efficacy test was applied to a sample of 292 university students who were randomly selected. The study found that e-learning techniques contributed to raising the level of perceived self-efficacy among males more than among females. It did not have a significant impact on its interaction with the student's field of specialization. The results also indicate the importance of the role played by social studies teachers with technological educational techniques in improving the level of students' self-efficacy. Moreover, social relations are among the most important factors contributing to building a conscious generation that preserves human dignity. Therefore, we must research the negatives of e learning to find out the reason behind the lack of improvement in the level of perceived self-efficacy among females.

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1. INTRODUCTION

The concept of self-inefficacy appeared at the hands of Bandura when he published his article, where this concept has been subject to many studies across various fields and situations [1], [2]. Bandura received growing and steady support from many of the results of these studies, and then he developed the concept such that he linked it to the concept of self-control of behavior in his social cognitive theory, through what he published about the social foundations of thinking and behavior [3], [4]. Social theorists believed that the term perceived self-efficacy represents a crucial component in the individual's sense of personal control, control over his destiny, and compatibility with life events and that the sense of control and personal control works to achieve harmony and reduce the level of psychological pressures [5], [6]. Bandura pointed out that perceived self-efficacy is everything that an individual believes he possesses the capabilities that enable him to exercise standard control of his abilities, thoughts, feelings, and actions. Moreover, this standard or standard control of these determinants represents the frame of reference for the behaviors that he produces in their relationship to the physical and social environmental determinants [7].

Perceived self-efficacy in e-learning refers to the individual's belief in his ability to control his life process and face the corresponding challenges by organizing the required actual plans, overcoming the challenges he faces in implementation and working hard to implement them, and enhancing his life tasks and self-esteem [8]. Hence, e-learning is considered one of the most important skills necessary for lifelong learning [6]. The students' perseverance in performing various academic tasks and exerting effort depends on their awareness of their self-efficacy and their perceptions of learning, which are affected by environmental and cultural factors [2]. Han and Geng [9] also believes that e-learning contributes to students' mental performance and enhances their perceived self-efficacy, as it is a process of self-direction through which the student is transformed from a recipient of information into a researcher with a high ability to generate ideas, feelings, and behaviors. Moreover, controlling it to a high level of perceived self-efficacy [3]. Therefore, the idea of e-learning is to arouse the interest and desire of learners, as it provides an educational environment full of diverse knowledge and experiences so that each learner can take what interests him [1]. This leads to the development of higher thinking abilities through creative scientific thinking in arriving at solving problems and arranging and organizing ideas, thus enhancing their perceived self-efficacy [6].

E-learning is the path to real self-development and is the path of the future for societies [8]. It unleashes various opportunities and reduces inequalities [9]. It is the cornerstone on which enlightened, tolerant societies are built, and the main driver of sustainable development directed at students [10]. E-learning also gives students an exceptional opportunity to continue their studies without stopping their educational journey due to health conditions [11]. As well as ensuring the health and safety of learners by not mixing them directly with the educational environment [12]. Presenting scientific material in a modern way that is compatible with technology in the current era [13]. Employing educational technology in a way that helps increase students' self-confidence and enhance their perceived self-efficacy, through the advantages it provides that keep them far from the various obstacles that prevent them from learning in the way that suits them [14].

Several researches [9], [10] points out that the image that an individual forms of his actual and cognitive capabilities, which has developed through social and family upbringing and previous experiences with which he has interacted, provides him with a perception in which he determines his expectations for the success and failure that he faces since his exposure to certain situations and experiences. Thus, the concept of perceived self-efficacy works on motivation toward success if previous experiences were successful, and toward failure if previous experiences were frustrating [11], [12]. While that social studies, in general, are concerned with studying past events and relationships between man and his environment, where the student analyzes and describes the events that took place in the past on neutral scientific grounds, to arrive at facts and rules that help understand the present, make judgments, and predict the future [13], [14]. This is what makes it a fertile subject for contributing to raising the level of students' perceived self-efficacy, as social studies curricula in general provide the student with positive knowledge, values, and skills [15], [16]. The concept of social studies has developed recently, as the main goal of social studies has been to develop the learner's ability to make logical decisions by referring to the stock of previous knowledge to become an active citizen in a society within an interconnected world [17], [18]. By integrating e-learning with traditional strategies in social studies, many e-learning strategies have emerged in the educational process to increase the effectiveness of learning and keep pace with developments and the information revolution [19], [20]. Many electronic systems and effective models have also appeared using multimedia, which must be used, employed in a good, and appropriate way for the educational process and provide the necessary capabilities [21]–[23]. In this regard, the study aims to answer the following question what is the effect of social studies teachers' use of e-learning techniques in developing students perceived self-efficacy.

2. METHOD

This study used the descriptive analytical method, and the sampling technique used was random using Google Forms in cooperation with university professors at several Jordanian private universities. The perceived self-efficacy scale was developed and validated, then distributed to a random sample of private university students in Jordan. The data obtained were analyzed using means, standard deviations, and T-tests for independent samples.

2.1. Respondent

The study included 365 students from 18 private universities distributed among four sub-regions in Jordan. Simple random sampling was used in the sampling process. The study tool was distributed to students with the help of faculty members over two weeks. There were 292 students (80%) filled out the study tool. Adam [24] believes that the sample size of this study is representative and can be used as a quantitative research sample.

2.2. Research instruments

The study tool used a Likert scale questionnaire with three answer options. The development of the scale was based on studying theories supporting perceived self-efficacy [25], and then indicators were identified. Perceived self-efficacy was developed based on Bandura's theory a unitary theory of behavior modification [26], [27]. This showed that perceived self-efficacy is affected by social and material factors and the individual's sense of personal control, control over his destiny, and compatibility with life events [28], [29]. In developing the research tool, the authors added scientific specialization and gender as new indicators that need to be measured and referred to perceived self-efficacy from a social perspective. Therefore, the variable indicators of perceived self-efficacy in research include gender (male and female), and scientific specialization (humanitarian and scientific), and the independent variable variables include e-learning technologies. The conceptual framework used in this research is shown in Figure 1.

A total of 40 items of validated data were identified based on the indicators found in the research variables, to measure the level of perceived self-efficacy among university students. The validity test of the instrument uses content validity and its criteria, while reliability uses Cronbach's alpha based on Allen-Win [30]. Table 1 shows the results of validity and reliability tests.

Table 1 shows the validation and reliability results of the research instrument used in this study. According to the table, the tools used in the variables and indicators of this study are valid and trustworthy. Because of the mentioned test results, this tool can be used.
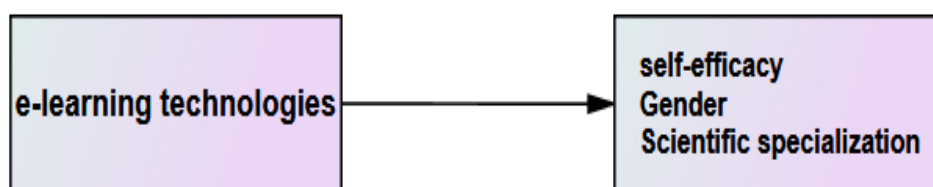

Figure 1. Conceptual framework of perceived self-efficacy and e-learning techniques

Table 1. Test results of the research instrument

SN	Indicator	Value	Decision
1	Number of items	40	
2	Correlation coefficient of items with the total score	0.57-0.68	R
3	Cronbach's alpha based on standardized items	0.89	V

Description: V=valid; R=reliable

2.3. Data analysis

The descriptive analytical method was used to identify the impact of social studies teachers' use of e-learning technologies to develop students perceived self-efficacy. The validity and reliability of the data were verified before conducting the statistical analysis process. Then answer the study questions using SPSS.

3. RESULTS AND DISCUSSION
3.1. Results

Table 2 displays demographic information from 292 private university students in the North, South, West, and East regions of Jordan. Gender (male and female) and field of specialization (scientific and humanitarian) were used to classify respondents. According to Table 2, males dominated the answers, with 170 students (58.22%), followed by (122) females (41.78%). In addition, the graph reveals that male students have higher levels of perceived self-efficacy compared to female students. there were four male students had a normal level of perceived self-efficacy and 166 male students had a high level of perceived self-efficacy. However, 122 of the females had a normal level of perceived self-efficacy. As a result, this study discovered that males have a high degree of perceived self-efficacy. Moreover, the level of perceived self-efficacy of students studying scientific disciplines differs significantly from the level of perceived self-efficacy of students studying humanities disciplines.

However, the level of self-efficacy among private university students in Jordan was moderate or high. The use of e-learning technologies contributed to raising students perceived self-efficacy, with differences in the level of perceived self-efficacy in favor of male students. Table 3 shows the F-test to the level of perceived self-efficacy among students according to gender and specialty.

Table 2. Demographics of respondents

Demographics		Low (%)	Normal (%)	High (%)	Freq (%)
Gender	Male	0 (0.00%)	4 (1.37%)	166 (65.85%)	170 (58.22%)
	Female	0 (0.00%)	122 (23.97%)	0 (0.00%)	122 (41.78%)
Specialization field	Scientific	0 (0.00%)	19 (6.50%)	147 (50.34%)	166 (65.84%)
	Humanist	0 (0.00%)	107 (36.65%)	19 (6.50%)	126 (43.15%)

Table 3. T-test to level of self-efficacy among private university students in Jordan

Indicators	Variable	Mean	Std. Deviation	Criteria	F	df	sig
Gender	Male	100.21	3.28	High	672.163	1	.000
	Female	79.95	5.21	Normal			
Specialization	Scientific	98.45	6.79	High	1.858	1	.174
	Humanist	82.92	8.65	Normal			
Specialization * Gender		91.74	10.85	Normal	.022	1	.883

Based on Table 3, it is clear that the average level of perceived self-efficacy among males is 100.21, with a standard deviation of 3.28, which is a high level. The average level of perceived self-efficacy among females reached 79.95, with a standard deviation of 5.21, which is a normal level. The results of F-test also show that this difference is statistically significant. It is also evident from Table 3 that the average level of self-perceived self-efficacy among students whose specialization was scientific was 98.45, with a standard deviation of 6.79, which is a high level, while for students with humanities majors, the average level of perceived self-efficacy was 82.92, with a standard deviation of 8.65, which is a normal level. The results of the F-test also show that this difference is not statistically significant. It is also clear from Figure 2 that there is no statistically significant interaction between gender and field of specialization. The level of students perceived self-efficacy in light of the use of e-learning technologies is affected by the students' gender, while the field of specialization does not constitute a variable with a significant impact on the level of perceived self-efficacy among private university students in Jordan.
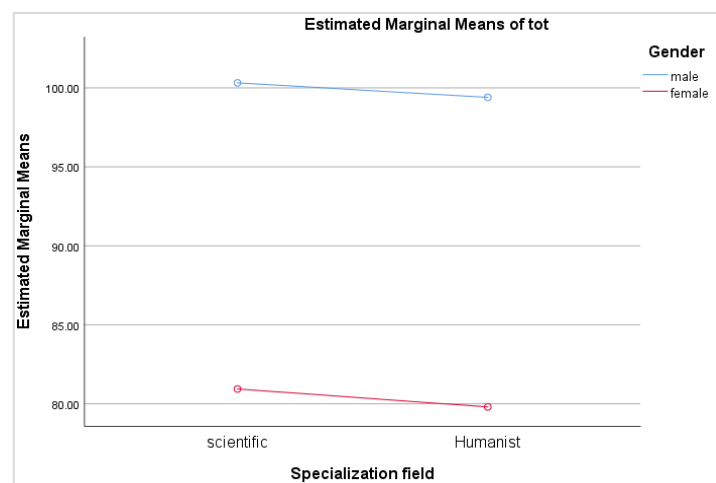

Figure 2. Interaction between gender and field of specialization

3.2. Discussion

According to this study, males have a higher level of perceived self-efficacy than females. The results supports Faqih finding [3] that males are better able to explain the concept of perceived self-efficacy than females. Thongsri et al. [5] also revealed that the high level of perceived self-efficacy among males is due to their quick access to various material and social life requirements and their ability to effectively adapt to the course of life. However, Arpaci et al. [7] presented a study in which they found that the level of self-efficacy of females is higher than that of males. Höl and Guc [13] also refutes the concept that males have a higher level of perceived self-efficacy than females. In short, males have a higher level of perceived self-efficacy than females [21], [22]. This is likely to happen because males dominate the sample of this study (58.22%), which means that males dominate the research sample and therefore dominate the results given. While the field of specialization was not successful in reducing the level of self-efficacy between both genders.

E-learning technologies used by social studies teachers have had a significant impact on education, especially in third-world countries. This is to break away from traditional education methods and strategies, which have proven to be less capable of dealing with the data of modern life, which has become centered on modern technological technologies. This directly affected the level of perceived self-efficacy among male university students. This enhances their ability to learn effectively because they have complete freedom to deal with the available technology. This finding is supported by the research of Amoozegar *et al.* [19]. According to a study [1], male students who have access to learning through e-learning technologies have a high level of perceived self-efficacy (77.89%). However, this differs with other research [27], [29], who reported that most males did not have a higher level of perceived self-efficacy than females. Moreover, according to Yilmaz [14], studies show the level of self-efficacy of male college students is lower than that of females. This makes sense since males like to deal with academic subjects face-to-face so they have more freedom to pursue their leisure pursuits. This difference reinforces the theory that the use of e-learning technologies in education may limit males' social activities and thus their level of self-efficacy may decrease [6]–[9].

It appears that the level of perceived self-efficacy among males is high. The reason for this is that males are more prepared to deal with modern educational technologies than females, which has a reflection on their level of perceived self-efficacy. Bandura's theory [12] follows the approach that an individual's perception of his self-efficacy relates to his assessment of his ability to achieve a certain level of achievement, and his ability to control events. Moreover, this judgment affects the level of self-efficacy and the nature of the work or goal that the individual seeks to achieve, and for the effort, he will make his perseverance in dealing with the events that confront him and his way of thinking [11]. As a result, college students have to be more prepared when it comes to the learning and teaching process. This result was strengthened by the study of Sarıtaş and Olpak [15] and the study of Pan [16] that the level of perceived self-efficacy is affected by the willingness, ability and skill to deal with modern educational technologies. Other factors that affect the level of students perceived self-efficacy include their physiological and emotional structure [25].

In addition, self-perception continues to grow through the acquisition of experiences, noting that male students have reached the stage of total self-reliance, which is manifested in the acquisition of various skills and the ability to make decisions and form attitudes regarding various life situations, and thus their ability to confront various problems and difficulties [4]. Self-efficacy is also considered one of the most important factors that affect students' academic performance, helps them confront problems and difficulties, and enables them to raise their readiness and ability to form positive social relationships. Hence, students' enjoyment of a good level of perceived self-efficacy is an indicator of the soundness of the educational learning process [23].

Adler also pointed out the importance of the social dimension in improving the level of perceived self-efficacy through the ability to pay attention to the social aspect. Social relationships are the only guarantee for the survival and existence of the human race through thinking, reason, logic, ethics, and aesthetics, as all of them are matters that only arise in society [2]. They are paths between individuals intended to preserve civilization from disintegration, and the individual's ability to face the temptations of social life, represented by acceptable personal traits and emotions such as social concern and respect for community values, empathy and true humility leads to better social relationships [8]. Here, the role of social studies teachers is highlighted in gaining insight into the values and standards that support the concept of perceived self-efficacy among students, and thus working to establish the roots of social security among students, by establishing the principles of personal dignity and belonging to others in a normal and mature relationship.

According to Bai [8], e-learning contributes radically to making the teacher aware of the importance of his role in educating students, as it reduces the administrative burdens of the course and alleviates the learner's time and effort. Electronic learning also works to increase flexibility related to learning time and time of enrollment in academic programs, and in doing so, it works to increase the scope of learning to include the world as a whole, and not be limited to the boundaries of the classroom. It is also commensurate with the weak material and technical capabilities in developing countries that cannot provide all educational means and supplies within the classrooms.

It can also be concluded from this study that the use of e-learning by social studies teachers makes them feel the importance and role of students in their self-learning, which would enhance their self-efficacy, by providing opportunities for synchronous and asynchronous interaction between the students themselves and between the students and their teachers. As well as increasing flexibility regarding learning time and time of enrollment in educational programs. Taking into account individual differences among students and providing each learner with the opportunity according to his needs and abilities. Such factors would contribute to increasing students perceived self-efficacy through the various educational benefits they provide.

4.   CONCLUSION

The study concluded that males have a higher level of perceived self-efficacy than females in Jordanian private universities. The student's field of specialization does not constitute a variable with a clear

impact on the level of perceived self-efficacy. Moreover, the interaction between the student's gender and the field of specialization is not one variable that can affect the students' perceived self-efficacy. The results also indicate the importance of the role played by social studies teachers with technological educational techniques in improving the level of students' self-efficacy. Moreover, social relations are among the most important factors contributing to building a conscious generation that preserves human dignity.

A high level of perceived self-efficacy among students would prompt them to exert more effort in educational tasks. This underscores the importance of paying attention to this developmental aspect among students, whether in the educational reality or within the framework of practicing various jobs. In the educational reality, those responsible for education programs of all stages and types must provide appropriate measures to reveal learners perceived self-efficacy, and pay attention to improving it as it represents one of the basic drivers to push the learner towards making an effort to achieve his goals and accomplish his various tasks.

REFERENCES

[1] M. H. Kang and M. Kang, "A structural relationship among perceived social support, self-efficacy and career decision level of college students," *The Korean Journal of Educational Methodology Studies*, vol. 27, no. 4, pp. 489–510, Nov. 2015, doi: 10.17927/tkjems.2015.27.4.489.

[2] S. R. Thakkar, "Impact of technology availability and self-efficacy on e-learning usage," *International Journal for Research in Applied Science and Engineering Technology*, vol. 6, no. 4, pp. 2956–2960, Apr. 2018, doi: 10.22214/ijraset.2018.4492.

[3] K. M. S. Faqih, "The influence of perceived usefulness, social influence, internet self-efficacy and compatibility on users' intentions to adopt e-learning: investigating the moderating effects of culture," *IJAEDU- International E-Journal of Advances in Education*, vol. 5, no. 15, pp. 300–320, Dec. 2019, doi: 10.18768/ijaedu.593878.

[4] M. S. A. Latip, I. Noh, M. Tamrin, and S. N. N. A. Latip, "Students' acceptance for e-learning and the effects of self-efficacy in Malaysia," *International Journal of Academic Research in Business and Social Sciences*, vol. 10, no. 5, pp. 658–674, May 2020, doi: 10.6007/IJARBSS/v10-i5/7239.

[5] N. Thongsri, L. Shen, and Y. Bao, "Investigating academic major differences in perception of computer self-efficacy and intention toward e-learning adoption in China," *Innovations in Education and Teaching International*, vol. 57, no. 5, pp. 577–589, Sep. 2020, doi: 10.1080/14703297.2019.1585904.

[6] M. S. A. Latip, M. Tamrin, I. Noh, F. A. Rahim, and S. N. N. A. Latip, "Factors affecting e-learning acceptance among students: the moderating effect of self-efficacy," *International Journal of Information and Education Technology*, vol. 12, no. 2, pp. 116–122, Sep. 2022, doi: 10.18178/ijiet.2022.12.2.1594.

[7] I. Arpaci, P. O. Durdu, and A. Mutlu, "The role of self-efficacy and perceived enjoyment in predicting computer engineering students' continuous use intention of scratch," *International Journal of E-Adoption (IJEA)*, vol. 11, no. 2, pp. 1–12, Jul. 2019, doi: 10.4018/IJEA.2019070101.

[8] X. Bai, "Promote technology self-efficacy via a SCORM-based e-learning approach," *International Journal of Information and Education Technology*, vol. 7, no. 8, pp. 575–580, 2017, doi: 10.18178/ijiet.2017.7.8.934.

[9] J. Han and X. Geng, "University students' approaches to online learning technologies: the roles of perceived support, affect/emotion and self-efficacy in technology-enhanced learning," *Computers & Education*, vol. 194, p. 104695, Mar. 2023, doi: 10.1016/j.compedu.2022.104695.

[10] T. Udin, S. Maufur, and O. R. Riyanto, "Student's self-efficacy and perceptions of online learning on the use learning management system," *Journal of Education Technology*, vol. 6, no. 1, pp. 165–172, Mar. 2022, doi: 10.23887/jet.v6i1.41884.

[11] S. H. Al-Shammari, "The influence of technical support, perceived self-efficacy, and instructional design on students' use of learning management systems," *Turkish Online Journal of Distance Education*, vol. 21, no. 3, pp. 112–141, Jul. 2020, doi: 10.17718/tojde.762034.

[12] G. M. Bubou and G. C. Job, "Individual innovativeness, self-efficacy and e-learning readiness of students of Yenagoa study centre, National Open University of Nigeria," *Journal of Research in Innovative Teaching & Learning*, vol. 15, no. 1, pp. 2–22, Apr. 2022, doi: 10.1108/JRIT-12-2019-0079.

[13] D. Höl and F. Guc, "Discovering self-efficacy beliefs of EFL learners and the relationship between self-efficacy and academic achievement," *Avrasya Uluslararası Araştırmalar Dergisi*, vol. 8, no. 24, pp. 425–448, Dec. 2020, doi: 10.33692/avrasyad.834142.

[14] R. Yilmaz, "Knowledge sharing behaviors in e-learning community: exploring the role of academic self-efficacy and sense of community," *Computers in Human Behavior*, vol. 63, pp. 373–382, Oct. 2016, doi: 10.1016/j.chb.2016.05.055.

[15] M. T. Sarıtaş and T. Olpak, "Examining the relationship between gifted students' self-efficacy perceptions of information technology and their motivation towards e-learning environments," *European Journal of Education and Pedagogy*, vol. 3, no. 5, pp. 61–66, Sep. 2022, doi: 10.24018/ejedu.2022.3.5.449.

[16] X. Pan, "Technology acceptance, technological self-efficacy, and attitude toward technology-based self-directed learning: learning motivation as a mediator," *Frontiers in Psychology*, vol. 11, Oct. 2020, doi: 10.3389/fpsyg.2020.564294.

[17] Z. Azizi, A. Rezai, E. Namaziandost, and S. A. Tilwani, "The role of computer self-efficacy in high school students' e-learning anxiety: a mixed-methods study," *Contemporary Educational Technology*, vol. 14, no. 2, p. ep356, Jan. 2022, doi: 10.30935/cedtech/11570.

[18] O. Okuonghae, M. O. Igbinovia, and J. O. Adebayo, "Technological readiness and computer self-efficacy as predictors of e-learning adoption by LIS students in Nigeria," *Libri*, vol. 72, no. 1, pp. 13–25, Mar. 2022, doi: 10.1515/libri-2020-0166.

[19] A. Amoozegar, M. Abdelmagid, and T. Anjum, "Course satisfaction and perceived learning among distance learners in Malaysian research universities: the impact of motivation, self-efficacy, self-regulated learning, and instructor immediacy behaviour," *Open Learning: The Journal of Open, Distance and e-Learning*, pp. 1–27, Jul. 2022, doi: 10.1080/02680513.2022.2102417.

[20] U. Atiyah, M. Miarsyah, and D. V. Sigit, "The effect of using e-learning based guided discovery learning model based on self-efficacy towards student learning outcomes in biology class in reproductive system subject in high school," *International Journal for Educational and Vocational Studies*, vol. 2, no. 9, pp. 789–796, Sep. 2020, doi: 10.29103/ijevs.v2i9.2732.

[21] O. Sulaymani, A. R. Pratama, M. Alshaikh, and A. Alammary, "The effects of previous experience and self efficacy on the acceptance of e-learning platforms among younger students in Saudi Arabia," *Contemporary Educational Technology*, vol. 14, no. 2, p. ep349, Jan. 2022, doi: 10.30935/cedtech/11524.

[22] L. Agustina, M. Meyliana, and H. Hanny, "Constructing CSR student self-consciousness through university social responsibility implementation: evidence in Indonesia," *Social Responsibility Journal*, vol. 19, no. 5, pp. 885–905, Apr. 2023, doi: 10.1108/SRJ-05-2020-0170.

[23] R. Panigrahi, P. R. Srivastava, and P. K. Panigrahi, "Effectiveness of e-learning: the mediating role of student engagement on perceived learning effectiveness," *Information Technology & People*, vol. 34, no. 7, pp. 1840–1862, Nov. 2021, doi: 10.1108/ITP-07-2019-0380.

[24] A. M. Adam, "Sample size determination in survey research," *Journal of Scientific Research and Reports*, vol. 26, no. 5, pp. 90–97, Jun. 2020, doi: 10.9734/jsrr/2020/v26i530263.

[25] U. Freihofner, "Self-efficacy beliefs influencing year 9 students' actions in a bilingual learning management system," in *Self-Efficacy in Instructional Technology Contexts*, C. B. Hodges, Ed., Cham: Springer International Publishing, 2018, pp. 259–281, doi: 10.1007/978-3-319-99858-9_15.

[26] N. Davidovitch and R. Yavich, "Classroom climate and student self-efficacy in e-learning," *Problems of Education in the 21st Century*, vol. 80, no. 2, pp. 304–323, Apr. 2022, doi: 10.33225/pec/22.80.304.

[27] R. Prifti, "Self–efficacy and student satisfaction in the context of blended learning courses," *Open Learning: The Journal of Open, Distance and e-Learning*, vol. 37, no. 2, pp. 111–125, Apr. 2022, doi: 10.1080/02680513.2020.1755642.

[28] G. Chopra and P. Madan, "Role of 'potential self-efficacy' on e-learning effectiveness: a gender-specific moderated mediation model," *International Journal of Learning and Change*, vol. 13, no. 2, pp. pp.190–217, Jan. 2021, doi: 10.1504/IJLC.2021.113376.

[29] K. Raman, N. Othman, and G. Danaraj, "Investigating key factors for successful e-learning implementation," *Asia Proceedings of Social Sciences*, vol. 4, no. 2, pp. 49–52, Apr. 2019, doi: 10.31580/apss.v4i2.725.

[30] T. Baherimoghadam, S. Hamedani, M. Mehrabi, N. Naseri, and N. Marzban, "The effect of learning style and general self-efficacy on satisfaction of e-learning in dental students," *BMC Medical Education*, vol. 21, p. 463, Dec. 2021, doi: 10.1186/s12909-021-02903-5.

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