THE EFFECTIVENESS OF VIRTUAL CLASSROOMS IN DEVELOPING ACADEMIC MOTIVATION ACROSS GENDER GROUPS

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ABSTRACT

Academic motivation is fundamental for student interaction in the educational process. This led to new questions about how to explore the effects on students' academic motivation in the virtual classroom. The current research aims to try to identify the effectiveness of virtual classrooms in developing academic motivation across groups of boys and girls in the professional master's degree. The participants are students of the second academic level of the professional master in the educational technology program, who were divided into two experimental groups (one group for boys and the other for girls). The two groups studied the "interactive multimedia" course through virtual classrooms. To achieve the aim of the study, the academic motivation scale was used as a study tool. The results showed that there were no statistically significant differences in the use of virtual classes on the development of academic motivation across groups of boys and girls.

Keywords: virtual classrooms; academic motivation; gender groups; Interactive multimedia

INTRODUCTION

Higher education is facing a challenge in how to achieve learning outcomes during the COVID-19 pandemic. Therefore, it is important to go beyond the factors of time and space to improve flexibility in the learning path (Ahmed, Alharbi, & Elfeky, 2022; Lakhal, Bateman, & Bédard, 2017; Raes et al., 2020). More specifically, if students are not allowed to attend educational institutions, the alternative is to move from traditional to online learning (Basilaia & Kvavadze, 2020; A. I. M. Elfeky & Elbyaly, 2019; Sintema, 2020). Because of the lockdown that accompanied the onset of the pandemic, educational materials in many universities were delivered through virtual classrooms, which is the most popular online learning field (Chowdhury, 2020; Masada, 2017; Poongodi & Periasamy, 2020). The virtual classroom can also be defined as an electronic classroom that offers an educational course that can be expanded in content, space, and time (M. Y. H. Elbyaly & Elfeky, 2022b).

Virtual classrooms offer many services to both students and faculty members, such as sharing educational files and videos, desktop sharing, and simultaneous chat (A. I. M. Elfeky & M. Y. H. Elbyaly, 2021; Sultana, Jibon, & Kashem, 2020). On this basis, this pandemic has forced all students and faculty members to prepare to perform their teaching tasks in a virtual learning

environment (Purwanto, 2020). There are many previous studies that dealt with research and experimentation with virtual classes, and the study of Hussain Al-Qahtani (2019), which investigated the perceptions of both faculty members and students in the English Language Department towards virtual classes. The results revealed that most of the faculty members and students have positive perceptions towards the virtual classroom, and the results revealed the enhancement of communication skills because of the use of the virtual classroom. As well as the study of A. I. M. Elfeky, Alharbi, and Ahmed (2022), which looked at the effectiveness of virtual classes on English language proficiency for community college students compared to the traditional method.

In fact, the digitization and automation of many traditional campus teaching practices and pedagogical activities is one of the many advantages of a learning management system (Anderson & Dron, 2017). Thus, students can use an LMS to experience many educational resources provided by their teacher, and interact in time with their colleagues (Almalki & Elfeky, 2022; Homavazir & Gopal, 2018). An LMS such as Blackboard has become an important part of delivering modern university curricula and enhancing the teaching and learning processes in university education, by providing students with online instructions and information (M. Y. H. Elbyaly & Elfeky, 2022a; Napitupulu et al., 2018).

The Blackboard system also supports the use of virtual classrooms as a means of integrating effective and new educational technology (Taylor, Deshpande, Markelz, McKinnon, & Scheeler, 2019). In addition, the Collaborate Ultra Experience LTI virtual classroom is a unique addition for students who benefit from the use of virtual environments, which is used by integrating it into the Blackboard system. This application aims to facilitate smooth, real-time interaction between students and faculty members with the support of IT infrastructure and new technologies (Alharbi, Elfeky, & Ahmed, 2022; Suwais & Alshahrani, 2018).

On the other hand, there is a relationship between the student's academic motivation and the achievement of educational goals (Masadeh & Elfeky, 2016; Sanaie, Vasli, Sedighi, & Sadeghi, 2019). Students must be interested in the subject and motivated to participate in the learning process (Elfeky, 2017; Lynch, Lerner, & Leventhal, 2013), and the mechanism by which goal-oriented participation in the learning process is stimulated is academic motivation (Koenka, 2020). Faculty members commonly cite students' low academic motivation as the number one problem in their classrooms (Elbyaly & Elfeky, 2023a, 2023b; Elfeky & Elbyaly, 2017; Scales, Pekel, Sethi, Chamberlain, & Van Boekel, 2020). And researchers also note that during the undergraduate level, students tend to Academic motivation is declining, indicating the need to better understand the factors that may influence students' academic motivation (Elfeky & Elbyaly, 2016; Trolian & Jach, 2020). However, little is known whether the use of virtual classrooms is effective in enhancing the academic motivation of students (boys and girls).

RESEARCH PROBLEM

The problem of this research appeared to the researchers by observing the repeated failure to achieve the specific objectives of the "Interactive Multimedia" course for female and male students

of the professional master's degree. As mentioned in the introduction to the research; There is a relationship between student academic motivation and the achievement of educational goals (Elfeky & Elbyaly, 2023; Sanaie et al., 2019; Wibrowski, Matthews, & Kitsantas, 2017), meaning that students must be interested in the subject and motivated to participate in the learning process (Lynch et al., 2013) to achieve the course objectives. Also, as mentioned previously, many researchers have confirmed that during the undergraduate level, academic motivation tends to decline, which indicates the need to better understand the factors that may affect students' academic motivation (Elfeky & Elbyaly, 2021; Trolian & Jach, 2020). However, little is known about the effectiveness of virtual classrooms in enhancing students' academic motivation across the boys' and girls' groups. In light of the above, the problem can be formulated in an attempt to explore the effectiveness of virtual classrooms in developing academic motivation across groups of boys and girls.

RESEARCH AIMS

Exploring the effectiveness of virtual classes on developing academic motivation across groups of boys and girls.

RESEARCH IMPORTANCE

- Benefiting from the digital transformation in the educational process to face the dangers of epidemics and disasters that our societies may be exposed to.

- Benefiting from the virtual classroom in the educational process in times of crisis.

- Developing academic motivation (boys and girls) in the "interactive multimedia" course.

Research Limits

Objective Determinants

The current research is limited to identifying the effectiveness of virtual classrooms in developing academic motivation in the "Interactive Multimedia" course for professional master's students, through the use of the Collaborate Ultra Experience application.

Human determinants

The application of the current research is limited to female and male students of professional masters.

Temporal determinants

The research was conducted during the second semester of the academic year 2022.

Spatial determinants

Najran University, Saudi Arabia, specifically the College of Education.

Research Terms

Virtual Classes

It is an Internet-based educational electronic environment that is used to facilitate the smooth interaction of learners and teachers in real time with the support of modern technology and information technology infrastructure (Elbyaly & El-Fawakhry, 2016; Suwais & Alshahrani, 2018).

Academic Motivation

Academic motivation is the process by which goal-oriented academic activity is stimulated and sustained (Elbyaly, 2016; Koenka, 2020). It is defined procedurally in this research as a process by which academic activity directed towards achieving the objectives of the "Interactive Multimedia" course is stimulated.

METHODOLOGY

The semi-experimental approach was used in the current research, which aims to explore the effectiveness of virtual classrooms in academic motivation, and therefore the following semi-experimental design was used:

Table (1): The quasi-experimental design of the research

	Pre-test	Treatment	Post-test
First group (girls)	Academic Motivation Scale	Virtual classes	Academic Motivation Scale
Second group (boys)			

Research tool (Academic Motivation Scale)

To design a scale of academic motivation, the researchers reviewed previous studies and educational literature that dealt with measuring academic motivation, such as (Alshammary & Alhalafawy, 2023; Alzahrani, Alshammary, & Alhalafawy, 2022; Ghiasvand, Naderi, Tafreshi, Ahmadi, & Hosseini, 2017; Najmi, Alhalafawy, & Zaki, 2023; Yu, 2021). The academic motivation scale consisted of (25) statements, and the five-point Likert scale was used (from 5=strongly agree to 1=strongly disagree) for each positive statement, and vice versa for negative statements.

Ascertaining the validity of the scale required presenting it in its initial form to a group of specialists in the field of educational technologies, home economics, and curricula and teaching methods. Where the arbitrators were asked to express their opinions on the academic motivation scale in terms of the appropriateness of the phrases, their clarity and soundness of their linguistic formulation, what can be deleted or added from those phrases, and any other suggestions or observations. The consensus of (80%) of the opinions of the arbitrators was sufficient to accept each statement of the scale, and the observations made by the judges were taken into account when preparing the final measure of academic motivation.

Verifying the stability of the academic motivation scale required the use of Cronbach's Alpha coefficient for the consistency of internal statements, by applying the scale to a survey sample of (10) male and female students not included in the actual research, and the value of the reliability coefficient for the scale was (0.89). By recording the time taken by each male and female student

from the survey sample to answer the test, and calculating the average time, it becomes clear that the time required to apply the scale is (26) minutes. Thus, the scale is ready to be applied to male and female students as a research sample.

Research Sample

The research sample consisted of (50) male and female students in the Master of Vocational Education Technologies program at the College of Education - Najran University during the second semester of the academic year 2022. They were divided into two equal experimental groups. The first experimental group consisted of (25) students and the second experimental group consisted of (25) female students. Both experimental groups studied the "Interactive Multimedia" course across the semesters. In addition, verifying the equivalence of the two groups before application necessitated the application of the two research tools (a measure of academic motivation) beforehand on the two experimental groups, as follows:

Ensure That the Two Groups are Equal in Terms of Academic Motivation

Applying the academic motivation scale beforehand to all male and female students as a research sample. In addition, by analyzing the extracted data with the T. test for independent samples to identify the significance of the differences between the mean scores of the two research groups to verify their equivalence before the start of the experiment. Table (2) reveals the differences between the scores of male and female students in the pre-application using the Academic Motivation Scale.

Table 2: The significance of the differences between the two research groups in the pre-measurement of the academic motivation scale

Group	N	M	SD	Mean Difference	T. Ratio	Sig.
First group (girls)	25	49.8	3.825	1.8	3.721	0.517
Second group (boys)	25	51.6	4.126			

It is clear from the previous table the differences between the mean scores of the two research groups in the pre-application of the academic motivation scale, as it was not statistically significant at the level (0.05). That is, the male and female students in the research sample were homogeneous in the level of academic motivation before exposure to the experiment.

EXPERIMENTAL PROCESSING MATERIAL

The "Interactive Multimedia" course was organized into 10 lectures through virtual classrooms. Where a number of procedural steps were taken in presenting these lectures, based on a number of educational design models. This is to ensure that the objectives of the course can be achieved. Where the content that achieves these goals was identified, and the characteristics of the learners were taken into consideration during the design of the educational activities. Taking into account the benefit when delivering lectures from the capabilities of the virtual classes, which are

represented in the chat room, live video and audio broadcasting, the white board, desktop or application sharing, in addition to simultaneous browsing of the web.

RESULTS

To answer the research question, by extracting the arithmetic mean scores for the post application of the academic motivation scale for both research groups, in order to try to find out if there are statistically significant differences between the two experimental groups due to the learner's gender factor. Table (3) shows the results of the T. test to compare the average scores of academic motivation for the two experimental research groups.

Table.:. Results of the T. test to compare the average scores of academic motivation for the two experimental research groups

Group	M	SD	Mean Difference	T. Ratio	Sig.
First group (girls)	113.6	5.392	2.4	7.154	0.179
Second group (boys)	111.2	6.227			

The previous table shows that the averages of the two experimental groups are high, which indicates the development of the academic motivation of the two groups of boys and girls in academic motivation as a result of the use of virtual classrooms within learning management systems. (Boys and girls group) in the academic motivation amounted to (7.154), the average score of the students of the first experimental group was (113.6), and the average score of the students of the second experimental group was (111.2). That is, there are no statistically significant differences (p = 0.179>0.05) between the two groups of boys and girls with regard to academic motivation. In other words, this result indicates that there are no statistically significant differences because of using virtual classes on developing academic motivation across the groups of boys and girls. We answered the research question.

DISCUSSION

The level of academic motivation of male and female students of the Faculty of Education enrolled in the professional master's program was investigated in the "Interactive Multimedia" course. Where the results indicated that the use of virtual classrooms had an impact on the development of academic motivation for both experimental research groups (boys and girls). With no statistically significant differences between the boys' group and the girls' group in academic motivation due to the use of virtual classrooms. The results of this research agreed with the results of other previous researches that looked at the effect of using virtual classrooms on different learning outcomes, including the findings of Asadi, Khodabandeh, and Yekta (2019) that students who engaged in the virtual classroom were better than their colleagues who studied in the traditional classroom. . This did not appear in previous studies, differences between boys and girls in different learning outcomes due to the use of virtual classrooms, and this was confirmed by the results of the current research.

RECOMMENDATIONS

- Developing the skills of employing virtual classrooms among faculty members.

- Using other technological methods and methods to enhance learners' satisfaction.

- Enhancing student satisfaction at other educational levels.

SUGGESTED RESEARCH

- Conducting other studies in different educational stages, to confirm the success of using these classrooms in different environments.

- Using augmented reality to develop academic motivation among learners.

- Using the project method as a measure to develop academic motivation for male and female learners.

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REFERENCES

Ahmed, E. S. A. H., Alharbi, S. M., & Elfeky, A. I. (2022). Effectiveness Of A Proposed Training Program In Developing Twenty-First Century Skills And Creative Teaching Skills Among Female Student Teachers, Specializing In Early Childhood. Journal of Positive School Psychology, 4316-4330.

Alharbi, S. M., Elfeky, A. I., & Ahmed, E. S. (2022). The effect of e-collaborative learning environment on development of critical thinking and higher order thinking skills. Journal of Positive School Psychology, 6848-6854.

Almalki, A. D. A., & Elfeky, A. I. M. (2022). The Effect of Immediate and Delayed Feedback in Virtual Classes on Mathematics Students' Higher Order Thinking Skills. Journal of Positive School Psychology, 432–440-432–440.

Alshammary, F. M., & Alhalafawy, W. S. (2023). Digital Platforms and the Improvement of Learning Outcomes: Evidence Extracted from Meta-Analysis. Sustainability, 15(2), 1305.

Alzahrani, F. K. J., Alshammary, F., & Alhalafawy, W. (2022). Gamified Platforms: The Impact of Digital Incentives on Engagement in Learning During Covide-19 Pandemic. Cult. Manag. Sci. Educ, 7, 75-87.

Anderson, T., & Dron, J. (2017). Integrating learning management and social networking systems. Italian Journal of Educational Technology, 25(3), 5-19.

Asadi, N., Khodabandeh, F., & Yekta, R. R. (2019). Comparing and contrasting the interactional performance of teachers and students in traditional and virtual classrooms of advanced writing course in distance education university. Turkish Online Journal of Distance Education, 20(4), 135-148.

Basilaia, G., & Kvavadze, D. (2020). Transition to online education in schools during a SARS-CoV-2 coronavirus (COVID-19) pandemic in Georgia. Pedagogical Research, 5(4), 1-9.

Chowdhury, F. (2020). Virtual Classroom: To Create a Digital Education System in Bangladesh. International Journal of Higher Education, 9(3), 129-138.

Elbyaly. (2016). Heritage Revival by the Use of Saudi Bedouin Textiles in the Gulf Mantle. Journal of Home Economics, 26(4).

Elbyaly, & El-Fawakhry. (2016). Online teaching course to develop STUDENTS'CREATIVITY in handmade embroidery. British Journal of Education, 4(13), 30-51.

Elbyaly, & Elfeky. (2023a). The effectiveness of a program based on augmented reality on enhancing the skills of solving complex problems among students of the Optimal Investment Diploma. Annals of Forest Research, 66(1), 1595-1606.

Elbyaly, & Elfeky. (2023b). The effectiveness of project-based learning on enhancing the critical thinking skills of optimal investment students. Annals of Forest Research, 66(1), 1569-1583.

Elbyaly, M. Y. H., & Elfeky, A. I. M. (2022a). Investigating the effect of vodcast to enhance the skills of the Canadian smocking and complex problem solving. Current Psychology, 41(11), 8010-8020.

Elbyaly, M. Y. H., & Elfeky, A. I. M. (2022b). The role of metacognition in promoting deep learning in MOOCs during COVID-19 pandemic. PeerJ Computer Science, 8, e945.

Elfeky. (2017). Social Networks Impact factor on Students' Achievements and Attitudes towards the" Computer in Teaching" Course at the College of Education. International journal on E-learning, 16(3), 231-244.

Elfeky, & Elbyaly. (2016). The impact of learning object repository (lor) in the development of pattern making skills of home economics students. British Journal of Education, 4(2), 87-99.

Elfeky, & Elbyaly. (2017). The use of CSCL environment to promote students' achievement and skills in handmade embroidery. European Journal of Training and Development Studies, 4(2), 19-32.

Elfeky, & Elbyaly. (2021). Developing skills of fashion design by augmented reality technology in higher education. Interactive Learning Environments, 29(1), 17-32.

Elfeky, & Elbyaly. (2023). The impact of augmented reality technology on developing hand embroidery skills among students of the College of Education. Annals of Forest Research, 66(1), 1584-1594.

Elfeky, A. I. M., Alharbi, S. M., & Ahmed, E. S. A. H. (2022). The Effect Of Project-Based Learning In Enhancing Creativity And Skills Of Arts Among Kindergarten Student Teachers. Journal of Positive School Psychology, 6(8), 2182-2191.

Elfeky, A. I. M., & Elbyaly, M. Y. H. (2019). Multimedia: Different Processes. Interactive Multimedia-Multimedia Production and Digital Storytelling.

Elfeky, A. I. M., & Elbyaly, M. Y. H. (2021). The use of data analytics technique in learning management system to develop fashion design skills and technology acceptance. Interactive Learning Environments, 1-18.

Ghiasvand, A. M., Naderi, M., Tafreshi, M. Z., Ahmadi, F., & Hosseini, M. (2017). Relationship between time management skills and anxiety and academic motivation of nursing students in Tehran. Electronic physician, 9(1), 3678.

Homavazir, M., & Gopal, R. (2018). A research study on the digitalisation of higher education and its impact on teaching and students assessment in commerce, management and science colleges in Mumbai. AADYA-Journal of Management and Technology (JMT), 8(1), 93-100.

Hussain Al-Qahtani, M. (2019). Teachers' and students' perceptions of virtual classes and the effectiveness of virtual classes in enhancing communication skills. Arab World English Journal (AWEJ) Special Issue: The Dynamics of EFL in Saudi Arabia.

Koenka, A. C. (2020). Academic Motivation Theories Revisited: An Interactive Dialog between Motivation Scholars on Recent Contributions, Underexplored Issues, and Future Directions. Contemporary Educational Psychology, 101831.

Lakhal, S., Bateman, D., & Bédard, J. (2017). Blended Synchronous Delivery Mode in Graduate Programs: A Literature Review and Its Implementation in the Master Teacher Program. Collected Essays on Learning and Teaching, 10, 47-60.

Lynch, A. D., Lerner, R. M., & Leventhal, T. (2013). Adolescent academic achievement and school engagement: An examination of the role of school-wide peer culture. Journal of youth and adolescence, 42(1), 6-19.

Masada, T. S. Y. (2017). Immediate versus delayed feedback in promoting student teachers skills for lesson plan implementation. Thouqan Saleem Yakoub Masadeh and Abdellah Ibrahim Mohammed Elfeky (2017) Immediate Versus Delayed Feedback in Promoting Student Teachers Skills for Lesson Plan Implementation, British Journal of Education, 5(8), 43-58.

Masadeh, T. S. Y., & Elfeky, A. I. M. (2016). Efficacy of open-source learning management systems in developing the teaching skills of English language student teachers. American Journal of Educational Research, 4(4), 329-337.

Najmi, A. H., Alhalafawy, W. S., & Zaki, M. Z. T. (2023). Developing a Sustainable Environment Based on Augmented Reality to Educate Adolescents about the Dangers of Electronic Gaming Addiction. Sustainability, 15(4), 3185.

Napitupulu, D., Rahim, R., Abdullah, D., Setiawan, M. I., Abdillah, L. A., Ahmar, A. S., . . . Pranolo, A. (2018). Analysis of student satisfaction toward quality of service facility. Paper presented at the Journal of Physics: Conference Series.

Poongodi, A., & Periasamy, J. (2020). Enhancing English Speaking Skills of Engineering Students in Virtual Classroom. International Journal, 8(10).

Purwanto, A. (2020). Flipped Virtual Classroom Learning Model for the Course Study Discourse Analysis in Translation. Scope: Journal of English Language Teaching, 5(1), 01-07.

Raes, A., Vanneste, P., Pieters, M., Windey, I., Van Den Noortgate, W., & Depaepe, F. (2020). Learning and instruction in the hybrid virtual classroom: An investigation of students' engagement and the effect of quizzes. Computers & Education, 143, 103682.

Sanaie, N., Vasli, P., Sedighi, L., & Sadeghi, B. (2019). Comparing the effect of lecture and Jigsaw teaching strategies on the nursing students' self-regulated learning and academic motivation: A quasi-experimental study. Nurse education today, 79, 35-40.

Scales, P. C., Pekel, K., Sethi, J., Chamberlain, R., & Van Boekel, M. (2020). Academic Year Changes in Student-Teacher Developmental Relationships and Their Linkage to Middle and High School Students' Motivation: A Mixed Methods Study. The Journal of Early Adolescence, 40(4), 499-536.

Sintema, E. J. (2020). E-Learning and Smart Revision Portal for Zambian primary and secondary school learners: A digitalized virtual classroom in the COVID-19 era and beyond. Aquademia, 4(2), ep20017.

Sultana, M., Jibon, F. A., & Kashem, M. A. (2020). An Improved Model of Virtual Classroom using Information Fusion and NS-DBSCAN. Global Journal of Computer Science and Technology, 20(5).

Suwais, K., & Alshahrani, A. (2018). The Impact of Virtual Classes on Students' Performance in Open Learning Environments: The Case of Arab Open University, Saudi Arabia. J. Comput. Sci., 14(1), 14-22.

Taylor, J. C., Deshpande, D., Markelz, A., McKinnon, K., & Scheeler, M. C. (2019). VIRTUAL REALITY CLASSROOM PRACTICE: EXAMINING OUTCOMES AND OPINIONS ACROSS PRESERVICE TEACHERS' EXPERIENCES. Paper presented at the TED 2019 Conference.

Trolian, T. L., & Jach, E. A. (2020). Engagement in College and University Applied Learning Experiences and Students' Academic Motivation. Journal of Experiential Education, 1053825920925100.

Wibrowski, C. R., Matthews, W. K., & Kitsantas, A. (2017). The role of a skills learning support program on first-generation college students' self-regulation, motivation, and academic achievement: A longitudinal study. Journal of College Student Retention: Research, Theory & Practice, 19(3), 317-332.

Yu, V. E. (2021). Possible Selves and Academic Motivation in Russian and American College Students. Психология. Журнал Высшей школы экономики, 18(2), 352-365.