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MANAGING MOTIVATIONALLY DESIGNED E-LEARNING SITUATIONS AND THEIR IMPACT ON SUPPORTING THE ATTITUDE TOWARDS THE INFORMATION AND COMMUNICATION TECHNOLOGY COURSE FOR OPTIMAL INVESTMENT STUDENTS

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ABSTRACT
This research aims to study the effect of managing motivationally designed e-learning situations to support the attitude towards information and communication technology course among students of optimal investment. To achieve the aim of the current research, a measure of students' attitude towards the course was built. The researchers also used the blackboard learning and content management system to provide electronic learning situations for the course. The current research relied on the semi-experimental approach to reveal the relationship between the independent variable and the dependent variable by applying it to (50) first-level students in the Optimal Investment Diploma at the College of Education at Najran University. Students are enrolled in the information and communication technology course. They were divided into two groups (experimental and control), each of which consisted of (25) students. The results revealed a statistically significant difference among the two research groups in the direction towards the course in favor of the experimental group.

Keywords: motivationally design; e-learning situations; attitude; information and communication technology; optimal investment

INTRODUCTION
The shift from traditional educational situations to electronic does not mean merely converting the content into an electronic form (CD, web page), but goes beyond that to converting that content into interactive electronic activities that depend on the learner and that the teacher can manage using modern technologies (A. I. M. Elfeky & Elbyaly, 2019; Masada, 2017). The positive attitude of the learner towards the provided content depends on his positive participation in the e-learning situation (Mingoia, Hutchinson, Gleaves, & Wilson, 2019). This allows him to add and modify the content, review it, comment on it, and participate among more than one learner together in modifying, adding to, and improving the content (Ahmed, Alharbi, & Elfeky, 2022). This helps in building a social network that supports the idea of forming groups with common interests (Zhuravskaya, Petrova, & Enikolopov, 2020), which the researcher believes is developing observation, deduction and analysis skills. Learning also takes place through communication and sharing with others. Perhaps this is indicated by Vygotsky's social learning theory, where the

learner's attitude, way of thinking, and interpretation of various educational situations are affected by his interaction with others who are more knowledgeable or capable (Elbyaly & Elfeky, 2023a, 2023b; Haglund et al., 2021).

Various motivational design models are available, including the ARCS motivational design model, which is the most flexible as it has been applied to various types of learning environments, electronic and traditional (Ma & Lee, 2021). Many literature and studies dealt with it because it includes procedures that include assessing needs in order to analyze weaknesses and motivational strengths in the target sample, in order to facilitate planning and design of the educational situation (M. Y. H. Elbyaly & Elfeky, 2022b; Goksu & Islam Bolat, 2021). This model provides several solutions to support the orientation of learners in different educational situations. This model dates back to John Keller in 1978.

The model consists four steps; the first step is Attention, which is responsible for preparing for the learning process (Elfeky & Elbyaly, 2023; Niu, Zhong, & Yu, 2021). The researchers believe that this step will contribute to supporting the trend towards the course by presenting a variety of stimuli in the e-learning situation through LCMS learning and content management systems, such as graphics, animated films, and raising questions and unresolved problems related to the course. The second step is represented in Relevant. It is considered responsible for preparing the positive or negative response towards subjects in the environment that provoke this response (A. I. M. Elfeky & Elbyaly, 2021; Sinclair, Long, & Jones, 2020). In order to achieve the link, there must be a relationship between the tendencies and needs of the learner and the content provided through the electronic educational situation. This step can contribute to achieving the goals of the current research by paying attention to the educational goals and what they achieve in terms of educational content that is presented in a clear way and related to the previous experiences and expertise of the participants. The third step is Confidence. It is responsible for returning successes to the student's own abilities and efforts, away from easy or very difficult challenges (A. I. M. Elfeky, Alharbi, & Ahmed, 2022; Verger & Dubé, 2020). The researchers believe that this axis can contribute to achieving the goals of the current research by raising the participant's confidence in the possibility of excellence by providing opportunities for self-expression through the many interactive activities available in the electronic educational situation. This is to help him achieve academic success by making clear goals and providing examples of acceptable achievement. The fourth step is Satisfaction. It is considered responsible for supporting the formation of valid psychological attitudes among students through positive feelings about achievements and special experiences (Almalki & Elfeky, 2022; Sholihin, Hardivizon, Wanto, & Saputra, 2022). It can be achieved by providing immediate stimulation to the correct responses and responses, and the feedback provided through the e-learning position.

It can also be said that one of the most important reasons for the decline in students' attitude towards the ICT course from the point of view of the researchers is the lack of educational attitudes for dialogue and discussion between the student and the teacher on the one hand, and between him and his peers on the other hand. This is in addition to the huge density of content in the course, the

lack of sufficient time to discuss and share content elements, and the scarcity of educational activities that help complete student learning (Arrosagaray, González-Peiteado, Pino-Juste, & Rodríguez-López, 2019; M. Y. H. Elbyaly & Elfeky, 2022a). Which helped the students find it difficult to deal with the course in this way. This prompted the researchers to try to deal with the reasons for the decline in the trend towards the aforementioned decision. That is through managing the electronic educational situations that are designed motivationally through one of the learning and content management systems LCMS, due to its ability to deal positively to support a positive attitude towards the course.

RESEARCH PROBLEM

- Through the work of the researchers at Najran University, and while teaching the information and communication technology course for the first level for the students of the optimal investment diploma, they noticed a decrease in perseverance in completing the lecture, and the students' feeling of boredom, and lack of commitment to attendance with many excuses. This led to a decrease in their ability to achieve the objectives of the course as a natural result of previous behaviors. This prompted the researchers to try to link the low rate of achievement of the course objectives with the direction towards the course. By applying a measure of attitude towards the course on a sample of students, it confirmed the decrease in attitude towards the course. This prompted the researchers to think of a practical solution to this problem by trying to present that course in the form of a set of motivational designed e-learning situations and manage them through one of the LCMS learning and content management systems.

By reviewing previous studies, including the study of (Alanzi & Alhalafawy, 2022; Alharbi, Elfeky, & Ahmed, 2022; Alshammary & Alhalafawy, 2023; Alzahrani, Alshammary, & Alhalafawy, 2022; F. K. Alzahrani & Alhalafawy, 2023; Kulikowski, Przytuła, & Sułkowski, 2022; Masadeh & Elfeky, 2016; Najmi, Alhalafawy, & Zaki, 2023; Ngo & Eichelberger, 2019). As well as recommendations of educators need to take advantage of technological innovations in removing obstacles facing learners. The researchers were able to formulate the research problem in the presence of a significant decrease in the attitude towards the information and communication technology course. This prompted the researchers to reveal the role of motivationally designed e-learning situations in developing the attitude toward the course.

Research Aims

The research aims to:

- Reaching an effective employment of e-learning positions in support of the attitude.
- Identifying the effect of managing motivationally designed e-learning situations on the attitude towards the course for first-level students in the Optimum Investment Diploma.

Research importance

Results may contribute to:

- The trend towards universities and other educational institutions adopting the use of e-learning positions to support students' attitudes towards educational courses.
- Enhancing students' positive attitudes, dealing with negative attitudes, modifying them, and adapting this type of learning to suit their tendencies and desires in order to make this learning a success and to generalize its use in various academic courses.

Research Limits

The current research is limited to:

- A sample of first-level students with the optimal investment diploma in the Department of Curricula and Teaching Methods, College of Education - Najran University.
- Information and Communication Technology course for the first level in the Optimal Investment Diploma.
- Motivationally designed e-learning situations provided through the MOODLE content and learning management system.

Research Terms

E-learning management

E-learning management is a software package for content organization that gives the learner management and follow-up in a variety of e-learning situations, including entry and exit as well as giving him authority (Elfeky, 2017).

The ARCS motivational design paradigm

A model that presents a series of variables under which various motivational ideas and traits for learning are compiled in light of the four categories determined for the learning reinforcement process. Attention, Relevance, Confidence, and Satisfaction are these (Goksu & Islam Bolat, 2021).

Attitude towards the course

It is a set of feelings expressed by students, computer teachers, towards the course of artificial intelligence and expert systems in terms of support or opposition, and it is measured by the sum of their responses in the attitude scale prepared for this purpose (Elfeky & Elbyaly, 2017; Sahin & Yilmaz, 2020).

METHODOLOGY

1. Instructional Design for Experimental Treatment

Instructional design is responsible for applying teaching and learning theories in the educational field. Instructional design uses line drawings and visual representations known as instructional design models. Instructional design is the main field of educational technology. Indeed, the history of modern education technology and its development is linked to the history and development of educational design. The development of educational technology was based mainly on the

development of educational design(Elfeky & Elbyaly, 2016). In light of the previously reviewed ten-implementation steps of the ARCS motivational design model, through which the experimental treatment is designed, these steps can be summarized as follows:

1.1 Obtaining information on readiness and Attitude Towards Content

The current research requires familiarizing learners with the basic skills of using the Internet. The researchers made sure that it was available to the learners. In addition, the characteristics of their specialization allow dealing with computers and the Internet. In addition to their communication with the researcher through social networks, and their various participations, which relied mostly on sharing video clips, pictures, news, and text comments.

1.2 Analysis of the Characteristics of the Target Group

The target group is a sample of first-level students with the Optimum Investment Diploma in the Department of Curricula and Teaching Methods at the College of Education - Najran University. At this stage, the individual reaches the peak of the ability for physical activity and visual and auditory acuity, intelligence reaches its peak, independence and self-affirmation intensify, and interest in talking and discussion increases. With peers and adults to gain confidence and skill to consolidate his social standing, a great tendency towards reading, emotional maturity, the ability to deal with frustration, flexibility, self-control and impulse control, and achieving a balance between intellectual, social and physical activity.

1.3 Analysis of the Current Material

This is done through analyzing problems and estimating needs to identify positive features and shortcomings, and this was done by applying a measure of the attitude towards the ICT course, and noting the decline in the trend through analyzing the results.

1.4 Analysis of Content Objectives

The objectives of the Information and Communication Technology course were used according to the description of the courses of the Optimum Investment Diploma Program in the Department of Curricula and Teaching Methods at the College of Education - Najran University. In the light of analyzing the content objectives, the educational objectives to be achieved were formulated in the form of behavioral statements that accurately define the required change in the behavior of the participants in the study so that they are observable and measurable. It becomes a guide for adjusting the course of support provided to the learner and preparing the appropriate assessment tool.

1.5 Choosing and Designing Appropriate Methods

Through the researchers preparing the educational content required to achieve the objectives of the information and communication technology course. By distributing the content over six chapters, each chapter includes a set of lessons and educational activities that participants are required to implement individually. By turning each of these chapters into a set of web pages that reflect the content through text, still and animated images, still and animated graphics, and sound. Taking into account placing a page that progresses the objectives of the unit at its beginning, and not

forming links between those pages within the unit, so that these links will then be made in a standard manner through the SCORM standard using the Reload Editor program.

1.6 Incorporating These Methods into the Educational Situation

That is, compiling those educational units of the Information and Communication Technology course (after converting them into ZIP Packages compatible with the SCORM standard in the previous step) with the blackboard system, which is one of the Learning Content Management System.

1.7 Selection and Development of Materials in the Light of These Methods

This is done by using the blackboard to add activities to the educational site, where an activity is added after each chapter that is implemented individually, and an interstitial calendar is added after each activity that follows each chapter of the course, based on a question bank that is created in the blackboard. And the addition of a chat room for simultaneous communication, and a discussion forum for exchanging opinions and ideas asynchronously, and the addition of a site diary to link the various events that occur on the site with the date of their occurrence. In addition to using the site management block that enables the teacher to control the course offered through the educational website. As well as the activities block, which displays all types of materials available in the course and activities. In addition, the recent activities block, which displays what, happened since the student's last visit, and finally the course summary block, which displays a summary of this course submitted through the website.

1.8 Evaluation and Revision

Evaluation of motivationally designed e-learning situations by obtaining participants' feedback to determine the level of satisfaction, and then revision if necessary.

2. Research tool: Attitude scale: The scale has gone through the following steps:

2.1 **Objective of the scale**

The scale aims to measure students' attitudes towards the course, before and after studying the course (with electronic learning situations based on the motivational design model provided through the learning and content management system, in the traditional way).

2.2 **Sources for Building the Scale**

The scale was built based on many studies and literature, which dealt with how to build and design attitude scales in general. Which dealt with building measures of attitudes towards technological innovations and their use in education in particular, including Kemp, Palmer, and Strelan (2019); Staddon (2020); Elbyaly and El-Fawakhry (2016); Papadakis, Zaranis, and Kalogiannakis (2019); and Elbyaly (2016).

2.3 **Drafting the Scale Phrases**

After identifying the previous sources, the researcher formulated the scale phrases, which consisted of (30) half of which are positive phrases and the other half are negative phrases express or implied.

2.4 **Determining the Method of Estimating the Expressions of the Scale**

By examining the literature that dealt with the methods and methods of constructing the scales, the researcher decided to follow the Likert type method for the accumulated estimates. This is due to its many advantages in terms of: the ability to distinguish, the ease of application of the scale, the ease of correcting the scale and processing its results, the answer to each statement bears all degrees of approval or opposition (Vigil Colet, Navarro González, & Morales Vives, 2020). Through the Likert method, statements are presented to the individual and in front of each statement there are five alternatives to respond (strongly agree, agree, neutral, disagree, strongly disagree).

2.5 **Initial Experimentation of the Scale**

By initially applying the scale to a group of students of the optimal investment diploma in the Department of Curricula and Teaching Methods at the College of Education - Najran University, they numbered (10) students.

2.6 **Determining the appropriate time for the scale**

through the researchers recording the time it took each student to answer all the vocabulary, then calculating the average time required to answer the scale, and it turned out that the time for applying the scale is approximately (20) minutes.

2.7 **Calculating the Stability Coefficient of the Scale**

through the Cronbach alpha equation, where the scale stability coefficient (0.89) was reached, using the statistical software package (SPSS), and then the results obtained can be trusted when applying the scale to the research sample.

2.8 **Checking the Validity of the Scale**

By presenting the scale in its initial form to a number of arbitrators specialized in curricula and educational techniques, who confirmed the validity of the scale for application, and the observations made by the arbitrators were taken into account when final preparation of the scale.

3. Research Sample and Experimental Design

(50) Participants from the first-level class of the optimal investment certificate at the Department of Curricula and Teaching Methods of the College of Education at Najran University made up the research sample for the study's conclusion. In accordance with the experimental design of the study, they were also randomly split into two groups (the experimental group and the control group), each of which contained (25) individuals.

The researcher also employed the semi-experimental strategy, which called for the application of the pre-post experimental design. Using a test group design with two comparable groups (experimental and control).

Table (1). The research's quasi-experimental methodology

	Pre-test	Treatment	Post-test
Control Group		A	

Experimental Group	Attitude scale	B	Attitude scale

Whereas, treatment (A) represents studying the content in the classroom in the traditional way, and treatment (B) represents studying the course content with electronic educational situations based on the motivational design model provided through the learning and content management system.

Research Methodological Procedures

The content that will be presented in electronic educational situations created motivating through the learning and content management system has been decided in light of the description of the course "Information and Communication Technology" in the Optimum Investment Diploma Program at the College of Education - Najran University. The time indicated in the matrix of information and skills targeted in the course, which is for a period of (10) weeks during the first semester of the academic year 2022, has also been used to establish the amount of learning time needed. In accordance with the experimental design of the study, participants were chosen at random from first-level students in the Department of Curriculum and Teaching Methods who had the best investment diploma. Each group of participants in the primary research experiment included (25) students. Before the students in the experimental group read the material of electronic educational settings based on the motivational design model made available by the learning and content management system Blackboard, the researchers applied the research tool (attitude scale) to both groups. Where the course topics were added to after being transformed into SCORM-compliant ZIP Packages. Additionally, include other activities, a discussion board, formative assessments, a site management section, a journal, a forum search section, a section for activities, a section for course summaries, and a section for test results. Including the ARCS model's many factors as well as the arrangements for learner motivation. The control group's students receive typical classroom instruction while being followed up on, given enough time for face-to-face interaction, guided, and directed assistance and guidance through direct contact, and having any challenges or hurdles to their learning understood. Additionally, provide homework at the conclusion of each course so that students can submit it in person. Apply the research instrument (the trend scale) to both groups, correct the trend scale, and then record all the data for analysis in order to respond to the research question, test the hypothesis, and develop the findings and suggestions.

RESULTS

The SPSS V.14 statistical software package was used to examine the attitude scale data after they had been monitored in the pre- and post-applications.

Prior to the experiment, make sure the two study groups' attitudes are uniform:

Table (2): Relevance of pre-measurement variations between the two groups (control and experimental) in respect to the attitude scale

	Sum of Squares	DF	Mean of Square	F. ratio	Sig.
Between Groups	8.14	1	8.14	1.382	0.147
Within Groups	349.35	48	8.22		
Total	**357.49**	**49**			

According to the statistical analysis's findings, which are displayed in the previous table, the value of "F" was (1.382), which is non-significant at the level of (0.05). This indicates that there is no statistically significant difference between the experimental and control groups prior to application at the level of (0.05). Toward the course on information and communication technologies.

The Results Related to the Answer to the Research Question

After outlining the study's methodology, executing the fundamental experiment, and keeping track of the scores of the two groups of students (the experimental group and the control group) in respect to the trend scale (pre-post). We go over the researchers' statistical techniques in the sections that follow. In order to verify the veracity of the claim: "There is a statistically significant difference at the level (0.05) between the modified earning percentage for the scores of the students of the control group and the experimental group in the direction towards the course in favor of the experimental group". The significance of the differences between the adjusted earning percentage for the scores of the students in the two experimental control groups in the direction towards the course was assessed by the researchers using the Independent-Samples T-test to test this hypothesis. The following outcomes were attained:

Table (3): significance of "T" for the variation in the adjusted earning percentage for the students' scores from the control and experimental groups on the attitude scale

Group	M	SD	M-Difference	T. Ratio	Sig.
Control Group	79.6	8.945	13.3	4.16	.039
Experimental Group	92.9	7.628			

From the previous table, it is clear that the value of "T" for the difference between the modified earning percentage for the scores of the learners of the two groups (the control and the experimental) in the attitude scale was (4.1). The average score of learners in the control group was (79.6). While the average score of learners in the experimental group was (92.9). Thus, we find that the value of "t" is statistically significant. In such cases, the statistical significance is directed in favor of the group with the highest average, which is the experimental group, as the arithmetic mean for it was (92.6), an increase of (13.3) over the control group.

Therefore, the statistical significance favors the experimental group, which is the higher group on average (which is taught by e-learning situations based on the motivational design model provided through the learning and content management system). The research hypothesis is therefore

accepted. "There is a statistically significant difference at the level (0.05) between the modified gain ratio for the grades of the students of the experimental group (which is taught in electronic educational situations based on the motivational design model provided through the learning and content management system). And the control group (which is taught in classroom in the traditional way) in the direction towards the course in favor of the experimental group.

DISCUSSION

According to the findings presented in Table 3, there was a statistically significant difference at the level of (0.05) between the modified earning percentage for the scores of the experimental group's students who were instructed using an electronic learning and content management system based on a motivational design model. In addition, the control group, which pursues the course in favor of the experimental group using the conventional methods of classroom study. This supports the research hypothesis, which is accepted. Based on the motivational design model made available by the learning and content management system, this is a good indication that highlights the significance of e-learning attitudes. Which would cause the Optimal Investment Diploma students in the Department of Curricula and Teaching Methods at the College of Education - Najran University to create a trend toward the information and communication technology course.

The researchers believe that this result can be explained in the light of the following:

- The student interacts with the teacher and his peers through text, images, still and animated drawings, and sound and sound effects, which motivates the students towards adopting positive attitudes towards the course.
- The freedom offered by learning and content management systems to the learner in choosing their entry dates and browsing what they want and in line with them helped create positive attitudes for them that led to the development of their achievement.
- The ability to view the content provided through the learning and content management system without being restricted by the limits of time and place, which enabled the student to access information easily and quickly.
- Designing e-learning situations based on a motivational design model that meets the needs of learners, and was designed in the light of their characteristics, which created a positive attitude among learners.
- The e-learning attitudes based on the motivational design model provided through the learning and content management system take into account the individual differences among the learners, which helped to form positive attitudes among the research sample towards the course and the development of their achievement.
- The learning and content management system provides feedback to learners, as students' inquiries are quickly answered, which achieved a kind of psychological comfort for learners as a result of the speedy response to their inquiries.

- The learning and content management system allows for various dialogue and discussion processes among learners without the need for face-to-face confrontation, which removes the factor of fear and dread that some learners may have, thus forming positive attitudes and developing achievement.
- Communication and dialogue between colleagues and each other and between them and the teacher with the learning and content management system led to an increase in the students' sense of belonging and the growth of the emotional side, and thus this was reflected in the positive growth of the students' attitudes towards the course.

RECOMMENDATIONS

The researchers provide the following advice to take advantage of in light of the research's findings:

- Supporting the direction of academic courses by encouraging the use of motivational design.
- Take advantage of content management and learning tools used in other courses.
- Given cooperative learning techniques, an overall framework is required to maximize the advantages of online courses.
- Creating training programs for teachers and students to help them understand how to use learning and content management systems.

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