

DOI: 10.5281/zenodo.11425225

# THE IMPACT OF USING THE ARTIFICIAL INTELLIGENCE-BASED SOFTWARE (CLASSPOINT) ON ACHIEVEMENT AND MOTIVATION TOWARDS LEARNING THE COMPUTERIZED CHILDREN'S PROGRAMS COURSE AMONG STUDENTS OF THE SCHOOL OF EDUCATIONAL SCIENCES AT THE UNIVERSITY OF JORDAN

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Received: 11/11/2025

Accepted: 18/12/2025

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## ABSTRACT

*The present research determined the effect of artificial intelligence based software (ClassPoint) use on achievement and motivation in the computerized children programs course among students of the Faculty of Educational Sciences at The University of Jordan. The quasi experimental design was applied to a selected sample of (47) female undergraduate students of the faculty of Educational Sciences at The University of Jordan who took the course of computerized children programs in their first semester of the 2024/2025 academic year. An experiment with its members has been randomly divided into two categories: a control group where (25) students were involved, and an experimental group where (22) students were involved and studied using the (ClassPoint) application. Achievement test and a scale based on motivation towards learning were used in order to fulfill the objectives of the study. The findings of the study indicated that the mean scores of the performance of the experimental and the control group on the achievement test and motivation towards the learning were statistically significant, that is, in favor of the experimental group. Based on the findings, the research ended with the necessity to embrace the use of the artificial intelligence-based software (ClassPoint) in instruction in view of its effective influence in instruction of the computerized children programs course. The research suggested that it was inevitable to organize training courses among the faculty members at The University of Jordan and particularly, the faculty of educational sciences on how to use the (ClassPoint) software and how to benefit using the software.*

**KEYWORDS:** Artificial Intelligence (AI), (ClassPoint) Application, Achievement, Computerized Children's Programs.

## 1. INTRODUCTION

Scientific, technological, and information technology advancements have led to the emergence of new learning methods and approaches, which rely on employing technological innovations to achieve the required learning outcomes through the use of computer programs and applications. This has been reflected in the education system and the updating of educational programs, creating a need to develop strategies for education development and teaching methods. Traditional education, which relies on the teacher and the transfer of knowledge to students, is no longer able to accommodate the large numbers of students and meet their needs. Hence, countries and societies began searching for new learning methods where the student relies on themselves in the educational process. This gave rise to what is known as Artificial Intelligence (AI) to solve cognitive problems usually associated with human intelligence, such as learning, creativity, and others (Zhang & Aslan, 2021).

Among modern technological innovations is artificial intelligence, which is considered one of the most important requirements of the age of technology and the knowledge explosion, gaining an important position among different types of learning. It is the essence of lifelong learning and continuous education, as it allows for the growth of mental abilities and sensorimotor skills in particular, and is considered a fundamental assisting tool to other learning systems. The term artificial intelligence refers to the ability of a digital computer or a robot controlled by a computer to perform general tasks associated with intelligent beings; it is a branch of computer science.

The development of robotics and intelligent systems is experiencing a tangible change with regard to AI learning. AI also allows robots to do most jobs, including sensing and communicating with the environment in a clever manner, which allows them to be applied in an extensive variety of sectors, including industry and logistics, to medicine and the environment. The evolution of AI technology is a significant move to enhance the intelligent systems and make them more effective in most situations (Twinkl, 2023).

AI has enhanced teaching by providing a realistic representation of the educational content to be conveyed to students. By applying the provided AI systems in educational institutions, students interact with the educational process, as they interact directly, ask their questions, and share their ideas without feeling embarrassed. AI plays a supportive

role because it enhances learning efficiency without the need for additional materials from teachers (Khasawneh, Al-Shboul, & Al-Saaideh, 2025).

It is worth mentioning that AI has the ability to improve teaching quality and help provide a customized learning environment for students and assess grades, even in complex student tasks. The use of AI is characterized by serving the student inside and outside the classroom. Consequently, it can present the academic material to the student in a way that suits their understanding and capabilities, and provide them with the required support at the appropriate time. There are many software applications that use AI. The (ClassPoint) software is one of these important applications that works in parallel with the (PowerPoint) software specialized in presentations. What distinguishes the (ClassPoint) software is its interactive feature, as it allows: communicating among students, commenting, chatting, and directing educational advice and guidance with positive interaction (Crompton & Burke, 2023).

Achievement can be associated with learning and studying. The performance of the student in the learning process is often gauged in terms of his or her academic performance which results in the grade that the student gets after learning a certain amount of material and passing an achievement test which can measure the amount of what the student has learned. This grade is a pointer to the parents on how well their children have performed. Therefore, there is a pressing necessity to keep track of academic performance since it equips the student with his social life, particularly in future (Mashtar, 2020; Al-Saydawi and Maulud, 2019). Several factors influence the level of academic achievement, among them being, high and low motivations towards learning as there is strong correlation between motivation to learn and academic achievement of the student which validates the role of motivation in explaining the differences in students academic achievement (Al-Mashharawi, 2018). Accordingly, motivation is an important concept in the educational process; without the desire to learn, there will be no learning and achievement (Abu Riyash and Abdul Haq, 2007).

Hindawi and Saeed (2010) had shown a correlation between motivation and learning. Motivation is an effective learning condition which leads to attainment of educational objectives and it is among the desirable aspects that augur higher academic attainment of knowledge, understanding, and skills. Highly motivated learners achieve a lot academic performance compared to those who lack

high motivation towards learning. Motivation is one of the main aspects of the educational process. Highly motivated learners can also accept responsibility, independence, and speed of doing the necessary work and rely on themselves (Samawi and Al-Assaf, 2013).

The computerized programs course in the Faculty of Educational Sciences is defined as a course aimed at increasing students' computer and educational skills to develop computerized educational programs directed at children in the kindergarten stage. The course focuses on understanding children's educational and psychological needs and designing appropriate software that aligns with the characteristics of this age group. On the basis of the above and considering the potential that AI applications may have in the educational process to build a lot of cognitive factors among undergraduate students in the Faculty of Educational Sciences, this research was carried out to determine the effects of the use of the software based on artificial intelligence (ClassPoint) on the achievement and motivation towards learning of the course related to computerized children programs in students of the Faculty of Educational Sciences at The University of Jordan.

### 1.1. Study Problem and Questions

The computerized children's programs course relies on many computer skills rich in theoretical and practical information, such as electronic programs and applications that contribute to the growth and acquisition of different types of skills that require: thinking, concentration, follow-up, and great attention from university students. Despite the importance of electronic programs and e-learning, which shape the future and help in the intellectual and sensory building of university students, and the extent of their awareness of this importance (Alam & Atasi, 2022). However, it became clear to the researchers through their experience in academic work that the general concept of artificial intelligence is still not widely used among university students.

Despite the existence of many studies and research related to artificial intelligence, its impact on the educational process has not been sufficiently researched on a global scale, especially in the Arab world. Therefore, it is of great importance to take this topic seriously and deal with it in a way that ensures raising their level of academic achievement. Several studies have pointed to the importance of using artificial intelligence in the teaching-learning process (Wang, 2019; Ilgaz & Celik, 2023; Shahnoza, Umurzak & Azamat, 2023).

It has become imperative for Jordanian higher education institutions to activate artificial intelligence in a way that ensures the development of the education path in a manner that guarantees modern educational outputs that are in line with knowledge and industrial revolutions. Hence, this study attempted to answer the following two questions

1. Do achievement of the students of the Faculty of Educational Sciences at The University of Jordan of the course of computerized programs show statistically significant differences at the level of significance ( $\alpha=0.05$ ) between the experimental and the control group in terms of the teaching method?
2. Do the levels of motivation to study the computerized children programs course in the Faculty of Educational Sciences in The University of Jordan differ in the levels required to be statistically significant ( $\alpha=0.05$ ) between the experimental and the control group of students concerning the teaching approach?

### 1.2. Significance of the Study

The current study contributes to providing feedback on the importance of using the artificial intelligence-based software (ClassPoint) in improving variables of the educational process, such as: academic achievement, motivation towards learning, and defining the experience of using artificial intelligence at The University of Jordan. This study represents a reference for researchers in the field of artificial intelligence through the results it reached, which contribute to researching the effectiveness of artificial intelligence through the (ClassPoint) software on other variables. Significance of the study is that it proposes solutions which are useful in the educational process of removing numerous technical and skill issues that hinder student learning in e-learning and it also removes the issue of boredom that students do in conventional learning process. Conversely, it resides in determining the benefits of implementing the artificial intelligence-powered software (ClassPoint) to the educational process, and motivate the teaching staff, teaching-faculty members in the educational institutions, and professors in universities to use artificial intelligence in the educational process.

## 2. THEORETICAL FRAMEWORK AND PREVIOUS STUDIES

### 2.1. First: Theoretical Framework

This section includes a presentation of the theoretical literature on the study's sections as

follows:

### 2.1.1. First Domain: Artificial Intelligence

According to Haenlein and Kaplan (2019), it is the capability of the system to decode external information, learn and acquire its lessons to apply them to specific goals and tasks with the use of adaptable adaptation.

Abu Bakr (2019) affirms that the concept of artificial intelligence as a field of study is in fact fairly recent, and has emerged as one of the computer sciences with interest in the nature of human intelligence and in simulating it to produce a new generation of intelligent computers, which can be programmed to perform many actions that require the use of: inference, deduction and perception, which are also among the intelligent behaviors exhibited by humans and are listed as such in the list of intelligent behaviors that machines have not previously acquired (Mahmoud et al., 2023).

Most publications consider artificial intelligence as the science and engineering of intelligent agents. Intelligent agent is a system that understands the surrounding and makes decisions that enhance its probability of success in the mission it is executing or the team it is acting on behalf of (Al-Hiyari and Al-Mahasneh, 2023).

Big data, cloud computing, artificial neural networks and machine learning have all made it possible so that an engineer can create a machine that can simulate human intelligence. According to these technologies, the present paper mentions the present day machines that can perceive, recognize, learn, communicate with, and solve the problems as artificial intelligence. These smart technologies have revolutionized several industries definitely (Horáková et al., 2017). Therefore, while artificial intelligence can interact and assist humans to perform at the highest levels, it appears as the next disruptive innovation (Lawler & Rushby, 2013). Today, Many perceives artificial intelligence as the major force of the Fourth Industrial Revolution, and it might be the main cause of the fourth revolution in education as AI learning has also started to enter the school curriculum (Dai et al., 2020; Knox, 2020). Nevertheless, similar to the advent of television, computers and so on as discussed as game-changers in the education sector, it has been established that they fail to do so, but they do improve access to information without necessarily altering the basic educational practices. However, educators have a duty to analyze the existing possibilities of AI and find potential ways to enhance learning. With the growing popularity, it is high time to revise recent AI

research on education to equip teachers with a modern vision of the area so that they are ready to change.

AI has increasingly been promoted as having strategic value for education (Seldon & Abidoye, 2018). Loeckx (2016) proposed AI as a potential effective educational tool that eases the load on teachers and students and offers effective learning opportunities to learners. Together with the existing changes in education, including the digitalization of the educational process, games, and personalized learning, various possibilities to implement AI applications in education exists. Indicatively, the interactive and adaptive educational program modeling potential of AI technologies has been systematically utilized in the development of a personalized learning environment as a replacement of the shortage of teachers through the application of intelligent tutoring system (ITS) (Du Boulay, 2016).

In an interesting manner, though at times overwhelming, AI augments the teaching-learning process, assists teachers, and facilitates more effective individualized learning. It is necessary to go beyond the imagined science fiction scenarios of computers and robots instructing students, substituting teachers, and decreasing the human factor. AI does not remove teaching done in classrooms, but on the contrary, it adds value to it in a number of ways. By incorporating AI into education, it enables some beneficial processes by indicating to personalization which is a process in which AI systems are easily tailored to the learning requirements of every student and is able to focus teaching to their strengths and weaknesses. In teaching process, AI applies the above concept where both the learning style and previous knowledge of the student are measured to offer tailored guidance and education, and evaluation and grading. AI will be helpful in assessing tests with an answer key (Faggella, 2017).

All the experimental studies reviewed presented the positive effects of AI technologies on education. However, there are some challenges or misunderstandings of AI in education (Lawler & Rushby, 2013). There is a need to clarify a comprehensive evaluation standard to measure the effectiveness of AI in education. To ensure the validity and reliability of the evaluation, a multi-dimensional model should be adopted, including: technical, pedagogical design, domain knowledge, and human factors. Khasawneh and Al-Shboul (Khasawneh, Al-Shboul, & Al-Saaideh, 2025) indicated that AI has emerged in the field of educational technology through extracting

educational data from a large database it relies on. AI also contributes to providing assessment strategies and methods that align with different learning patterns, according to learners' characteristics and needs, and the environments in which they learn, in addition to the diversity and multiplicity of teaching strategies, which are essential in the teaching-learning process (Du Boulay, 2016).

### 2.1.2. Second Domain: ClassPoint Software

It is defined as an interactive educational add-in tool for the presentation program (PowerPoint) that is installed on the computer and works side by side with the presentation program. It is considered a comprehensive educational tool that can be linked to the presentation program, as it is designed to help teachers deliver presentations more efficiently without switching between different applications and improve the teaching methods used, due to its easy and simple interface that uses illustrative tools including many features. It also allows students to interact directly with the software, ask questions, and compare them with stored answers. It motivates students by providing positive reinforcement and encouragement for correct answers. This software also provides teachers with easy-to-use illustrative tools and digital whiteboards within a (PowerPoint) presentation. Students can join the class with any device with a browser, such as: personal computers, Macs, smartphones, and others (Jalbat and Al-Qadi, 2022). The researchers define it operationally as the software that will be used in this study.

ClassPoint, introduced in 2015 by Inknoe - a Singaporean educational technology company, enables the development of lecturers' technological interaction during class time. Researchers strongly recommended this tool because it significantly improved student satisfaction with online learning compared to the non-integrated learning situation with Classroom Response Systems (CRS) (Abdelrady & Akram, 2022). The (ClassPoint) application is also considered one of the simplest technical applications and is accessible even to teachers with simple technology experience. This comprehensive platform covers all topics a lecturer needs for their dynamic lesson and is divided into three main features: Presentation, Interactive Quiz, and Games. Furthermore, the second version released in early 2023 continuously provides more powerful tools to empower teachers in their workplaces.

The pattern of organizing and presenting content is the foundation upon which the design of educational programs and environments of various types is based. Solving most educational problems

represented by student reluctance and lack of positive participation in the educational process, and their lack of understanding of the presented educational content, depends on reorganizing and presenting the content in a way that suits students' characteristics and their cognitive styles.

The presentation pattern of ClassPoint serves as a constructive scaffold and a powerful dynamic tool for presenting electronic content to the learner through diversifying the presentation in different images and forms, and searching for new patterns that suit the student's conditions and capabilities (Hassan and Attaqi, 2020).

ClassPoint software is one of the modern educational tools that help teachers transform traditional lessons into interactive lessons, taking into account the excitement in those lessons. It is one of the important software for teachers because it improves the quality of the educational process, in addition to motivating students and raising their achievement level during the educational process at the same time (Bong & Chatterjee, 2021).

Among the advantages of ClassPoint software integrated with PowerPoint software are ease of use, in addition to its compatibility with computers, and the provision of many options and tools that can be used during presentations that meet the needs of students and curriculum requirements in general (Nasu & Afonso, 2018).

ClassPoint software takes into account enjoyable interactive elements represented in: animations, images, and videos, to create stimulating educational atmospheres that increase students' desire to learn and interact, in light of their great interest in the presented and exciting scientific topics (Zhang & Aslan, 2021).

It is also noticeable, as shown by Bong and Chatterjee (2021), that there is a difference in the level of students' academic achievement when (ClassPoint) software is implemented in education, and their participation in lessons through this software. This software encourages students to learn in general because it departs from the rigid and familiar traditional teaching pattern for teachers, and encourages interaction among both teachers and students. ClassPoint software is a tool that divides students into groups randomly and within a PowerPoint slide show in a record time, which can increase students' desire to interact with lessons and reduce the burden on the teacher.

ClassPoint software helps students in that it increases their achievement and provides them with many advantages that help them obtain information, knowledge, and new skills that increase their level of

cognitive acquisition, and lead them to a high level of thinking (Rasheed & Aziz, 2016). This is reflected in their level of achievement and reaching a good level of knowledge and science. This can also be reflected in the student's life and obtaining a good job after school and university study. AI can be used through ClassPoint software to personalize learning experiences according to each student's needs and abilities. Here, intelligent systems can provide customized educational content according to the student's level and individual learning style. This software can also provide high-quality, useful feedback to students. These reviews can be motivating and directed towards improvement and development. The software also provides customized exercises and diverse educational materials that suit each student's level (Bong & Chatterjee, 2021).

### 2.1.3. Third Domain: Academic Achievement

The issue of concern for achievement is one of the fundamental issues addressed by many studies and research; seminars and workshops have even been held for it. If modern societies derive the building of their sectors from what the outputs of learning in its various forms provide them, then these outputs are measured by the extent of their accomplishment and efficiency by a measure called "academic achievement," which has become in the concept of the era the tool used to measure competence and the means through which teaching methods are modified and updated, and everything necessary for developing this achievement is adopted (Mahdi, 2006). Al-Zaydi (2014) pointed out that achievement is the sum of what students acquire of: information, knowledge, and skills as a result of studying a set of educational programs with specific objectives. Al-Jalali (2011) defined it as what the student acquires of: skills, knowledge and various sciences, as a result of diverse and multiple learning processes, indicating their cognitive mental activity, and is measured by the grade they achieve in a standardized exam they take when required. Allam (2006) sees it as the degree or level of success achieved by the student in a general or specialized academic field, representing the acquisition of knowledge and skills, and is considered the final product of learning.

Achievement is also considered one of the important aspects of mental activity among students in educational institutions. It is viewed as a high-level mental process, classified among cognitive variables, and expands to reach the student in their learning, in addition to their ability to express what

they received during the educational process. Achievement involves providing the student with knowledge and multiple skills in a scientifically organized manner. Achievement as a whole focuses on two aspects that are considered outcomes of the teaching-learning process, namely: the cognitive aspect in addition to the skill aspect, which in turn focus on the student's affective aspect. This is attributed to the fact that experiences are not acquired without the affective aspect, nor are they mastered except through it (Al-Hariri, 2017).

Achievement includes many facts, skills, values, and students' inclinations towards some educational subjects. It also includes many cognitive, affective, and skill-based aspects. Despite the broad general concept of achievement, it is often referred to as "student achievement," or their acquisition of what the teaching-learning process seeks. Achievement also has a direct relationship with the teacher and the learner. Therefore, achievement is a criterion for judging what the student may obtain in the future. The school gives importance to the student through the grade they obtain from marks representing their total sum or general average, through which the student's level is estimated. This determines the student's future and the specializations they can study based on the level of achievement, or what is called the "grade point average." Achievement is also achieved from the level of students' various aptitudes and is considered the outcome of a set related to: motivation, environmental conditions, and determining the level of students' mental and cognitive abilities (Gharaybah, 2015).

**Achievement has three divisions that can determine the student's level, represented in (Abu Ubaidah and Hadi, 2019)**

- **Cognitive Achievement** This is the achievement that includes the student's mental processes at various levels obtained by the student, in light of what the student has learned, and the analysis of interrelated relationships, to reach the student's general level, and then judge the content of the educational material and the information obtained from it reflected in the student's level of cognitive achievement.
- **Skill-based Achievement** This achievement is related to the skills acquired by the student regarding motor skills, such as: mathematical and performance skills, or practical skills, such as: computer usage skills, and scientific skills, such as: medical laboratory equipment usage skills, or applied skills, such as: scientific research procedures.
- **Affective Achievement** This expresses

achievement related to emotional issues that move internal feelings and emotions, dealt with through: emotional matters, values, and attitudes. Affective achievement is also determined through the individual's various activities.

#### 2.1.4. Fourth Domain: Motivation

Motivation is of great importance from an educational perspective as it is an educational goal in itself. It directs students' behavior and stimulates their interests, making them eager to exert effort (Khalifah and Hameed, 2021; Abdul Hamid, 2020). Motivation is defined as: the student's readiness to exert maximum effort to achieve a specific goal, and it is a fundamental matter in the learning process that cannot occur without it (Sayed, 2022).

Motivation may be considered as a latent force without which learning cannot take place, in fact, its growth and improvement among learners cannot be achieved. The release of this energy results in elevating up and enhancing the level of performance, acquiring new and complicated knowledge and abilities, applying advanced learning techniques, and implementing effective approaches to how the student processes the information he acquires throughout the learning process (Adas, 2012).

##### **Motivation is divided into two main types**

**Intrinsic Motivation** This stems from within the individual themselves, where they perform actions motivated by: interest, passion, or enjoyment of the activity, without expecting an external reward. This type of motivation reflects a genuine desire to learn or achieve and often leads to better performance and continuity in work. It also enhances creativity and a sense of self-satisfaction (Ishida & Sekiyama, 2024).

**Extrinsic Motivation** This relies on external factors that motivate the individual, such as: obtaining a reward or avoiding punishment. In this case, the individual engages in activities to achieve an external goal, such as: success in an exam for a reward, or working hard to get a promotion. Although extrinsic motivation may be effective in motivating behavior in the short term, its effect often disappears with the removal of the external incentive, making it less sustainable compared to intrinsic motivation (Kholifah, Nurtanto, Motohhari, Subakti, Ramadhan & Majid, 2024).

#### 2.2. Second: Previous Studies

Pacheco-Mendoza et al. (2023) carried out a research that sought to determine the effects of the application of artificial intelligence on the academic performance of students at the University of

Guayaquil (UG). The aim was to model and establish a predictive model that would forecast the level of academic performance of the students. The research employed a quantitative methodology that would accommodate the intentions of the study. A sample size of (1012) students was used in the study. The findings of the research revealed that the impact of AI-based applications on academic success of students at the University of Guayaquil was statistically significant, therefore, creating an AI-based trend in student performance and increasing their level of academic success.

Zheng et al. (2023) carried out an investigation that indicated the popularity of the usage of Artificial Intelligence (AI) methods in the education sector. AI has been receiving more and more interest in the educational field. The research based on quantitative analysis was aimed at finding out how effective AI is in general in education and learning perception. The meta-analysis brought together 24 articles that used 2908 individuals between 2001 and 2020. The findings established that AI influences the academic success and a lesser effect on the perceived learning. The research has located (13) variables in connection with AI and improving the achievement level of students, which include; role of AI, AI application domains, AI software, AI devices, and AI techniques. These variables were discovered to enhance the efficacy of AI which was then manifested in the degree of student success in their learning subjects.

Al-Jarwi (2020) organized a research with the purpose of understanding how the use of artificial intelligence technology in an e-learning setting influences the development of future thinking skills and academic performance in science among female students in the middle school level. The study took a quasi experimental design. The sample used in the research was (40) female students in the third intermediate grade in a private school in Riyadh. The sample was separated into two, namely, an experimental group, which applied AI technology to the e-learning environment, and (20) students, and a control group, which applied the conventional method, which included (20) students. The researchers were ready to meet the research objectives by preparing an e-learning environment that was built on the basis of AI technology. Achievement test was constructed to assess the achievement in science, a future thinking scale, and a future thinking test to determine the level of performance of female students in terms of future thinking skills. The study has found that the application of AI technology within the e-learning setting positively affects the acquisition of not only

the future thinking skills but also the academic performance in the science field. The study prescribed the need of teachers to adopt AI technology and apply future thinking abilities to a larger extent in scientific courses.

Cruz-Jesus et al. (2020) conducted a study to show that academic achievement is one of the most global challenges in the educational field. This result was based on studies using traditional methods in education. The current study was conducted to show a new style of education that brought about a complete scientific revolution, namely Artificial Intelligence (AI) to predict the academic achievement of students in public secondary schools in Portugal. The academic achievement results of students using traditional education were compared with the academic achievement of students using AI, and they were compared in terms of performance. It was found that AI raised the level of academic achievement among students significantly, representing a fundamental pillar in education nowadays. Rashid and Aziz (2016) organized an experiment that sought to establish the correlation between the performance of students in a particular course, their social backgrounds, past performance, and academic conditions through artificial intelligence. The sample used concerned (500) males and female's students in six departments within the Faculty of Engineering. Before the commencement of the course, students were assessed and after the course was completed. The findings revealed the significant statistically significant effect of AI in increasing the level of student achievement in most course studies, which offers the contemporary and fresh learning setting characterized by the interaction on the software that is running under the banner of artificial intelligence.

Moybeka et al. (2023) conducted a research that was meant to find out the effect that artificial intelligence had on teaching English as a Foreign Language in relation to student motivation to study. This paper has employed a multi-methodology, where quantitative surveys have been used to complement the results of qualitative research of past literature, to explore the multi-faceted aspects of student motivation in learning English as a Foreign Language in AI-based learning context. Although the research illuminated how AI methods relate to motivation variables to the process of learning, the findings demonstrated an increasing level of knowledge concerning the role of AI in education and its capacity to influence the future of teaching English as a Foreign Language, by influencing the motivation of students to learn English. The study

also had valuable implications to: teachers, policymakers and decision-makers and how AI can be integrated effectively to create permanent and keen language learners in the increasing technological generation.

Qawaqneh and Alawamreh (2023) carried out a research that sought to uncover the roles of Artificial Intelligence (AI)-based Virtual Laboratories (VLab) in shaping the motivation towards learning mathematics in students. The quasi-experimental design was employed to match the aims of the study and meet its goals. Intentional sampling was used to select the study sample out of (80) seventh graders. The sample members were divided into three groups including two experimental groups and one control group. The first group of 26 students was trained through AI-based VLabs, the second group of 27 students was trained through 3D Visual Imaging-based VLab and the third group of 27 students was the control group, which was trained through the conventional method. The learning motivation questionnaire research tool was developed on the basis of confirming its validity and reliability. The findings showed that students in the first experimental group were more motivated to study mathematics than the students in the second experimental group and control group. The findings also indicated that the students of the second experimental group were more motivated to learn mathematics than those in the control group.

Al-Sawalma (2022) organized a study that was supposed to determine the efficiency of an application based on artificial intelligence in shaping the ability to think logically and develop an interest in studying the computer subject in eighth-grade students. The research adopted the quasi-experimental design to accommodate the objectives of the study. The sample of the study was divided into (45) male and female students in the capital Amman, Al-Riyada international school, (23) male and (23) female students who studied using the conventional approach through an application created using artificial intelligence and (22) male and (22) female students who studied using an application created using the artificial intelligence technique. The study established that statistically significant differences in logical thinking skills test favored the experiment group, and statistically significant differences between the mean scores in the pre and post-application of motivation towards learning scale favored the experiment group. The research also suggested the need of incorporating AI technologies in computer subject curricula and projects because of its successful application in

turning the education process into a more active and effective one.

### 3. METHODS AND PROCEDURES

This part of the study includes a presentation of: the study's methodology, its population, its sample, its variables, the tools used, the steps for their development, verification of their validity and reliability indicators, application procedures, and the statistical treatments used to analyze the data to achieve the study's objective. The following is a statement of that:

#### 3.1. Study Methodology

In this study, the researchers applied a quasi-experimental design to fit the nature of the study and attain the study objectives. The sample used in the study was chosen purposely and the two sections were randomly chosen out of the study population that was made up of students at The University of Jordan in the Faculty of Educational Sciences.

#### 3.2. Study Participants

The study sample of the participants involved (47) male and female students of the Faculty of Educational Sciences of the University of Jordan, students who are taking the computerized childrens programs course. Two classes were picked randomly one as a control group having (25) male and female students studying in the traditional method and the other as an experimental group consisting of (22) male and female students studying with the help of the (ClassPoint) software application.

### 4. FIRST STUDY TOOL: (ACHIEVEMENT TEST)

In order to capture the objectives of the study, there was an academic achievement test constructed and developed within the computerized children programs course. It comprised questions to assess the success of students attending the computerized children educational programs course at The University of Jordan at the first semester during the academic year 2024/2025. The test was made in a table of specifications of the third unit entitled (Children Aptitudes and their Assessment). It was in the multiple choice format whereby the student decides the right answer to the question among four choices one of which is correct. The test was composed of (20) questions, each of which was scored with either zero or one out of the possible results. The test was allocated (20) marks, with each item worth one mark according to the grades specified in the table of specifications prepared specifically for this academic test.

#### 4.1. Validity of the First Tool

To check the apparent validity of the items of the academic achievement test, the researchers were required to show the tools in their original form to a panel of arbitrators comprised of eight experts in the area of educational technology, curriculum and teaching, and assessment with regard to faculty members of the Faculty of Educational Sciences in The University of Jordan. The views of the arbitrators were also considered about the clarity of the items, their linguistic and scientific relevance, the belonging of the item to the field in which it was prepared to measure, their relevance in the purposes of the study, the extent to which the item comprehensively measured the required skills, and any proposed revisions, or inclusion of items they thought necessary, and any removal of those which were unnecessary. The researchers made their notes based on the views expressed by the arbitrators, made corrections on them, and conducted the necessary changes to depict the tools in their final shape.

#### 4.2. Construct Validity of the Achievement Test

The validity of the achievement test was derived by establishing the number of items in the test whose correlation coefficient was found with the overall achievement test marks using Pearson correlation coefficient.

**Table 1: Correlation Coefficient of Each Item in the Test with the Total Score of the Test Using Pearson's Correlation Coefficient.**

Item Number	Its Correlation Coefficient with the Total Score of the Test
1	.545**
2	.592**
3	.641**
4	.789**
5	.292*
6	.975**
7	.319*
8	.695**
9	.484**
10	.461**
11	.435**
12	.400**
13	.667**
14	.461**
15	.369*
16	.500**
17	.485**
18	.485**
19	.596**
20	.357*

\*\* Significant at the (0.001) level, \* Significant at the (0.05) level.

Table (1) shows that all the correlation coefficients

of the items in the test to the total score of the test with Pearson correlation coefficient were positive and statistically significant which means that construct validity of the test exists.

#### 4.3. Difficulty and Discrimination Coefficients for the Achievement Test

The difficulty and discrimination coefficients for the achievement test were extracted, and Table (2) shows the results.

**Table 2: Difficulty and Discrimination Coefficients for the Achievement Test.**

Item Number	Difficulty Coefficients	Discrimination Coefficients
1	0.63	0.42
2	0.30	0.43
3	0.09	0.45
4	0.46	0.42
5	0.67	0.41
6	0.26	0.43
7	0.61	0.41
8	0.63	0.41
9	0.75	0.050
10	0.76	0.40
11	0.72	0.49
12	0.51	0.520
13	0.62	0.150
14	0.43	0.43
15	0.31	0.330
16	0.49	0.48
17	0.74	0.40
18	0.49	0.42
19	0.50	0.250
20	0.63	0.230

Table (2) indicates that the difficulty coefficients for the achievement test ranged between (0.30 - 0.74), while the discrimination coefficients ranged between (0.32 - 0.52) and all these values are acceptable (Awda, 2014).

#### 4.4. Reliability of the Achievement Test

Two approaches were taken to determine the reliability of the achievement test, the internal consistency method of the test items through the Kuder-Richardson 20 (KR20) equation. The result of the coefficient of reliability was (0.85) with this method.

The achievement test reliability coefficient was also determined through the split-half method by means of the Spearman-Brown coefficient of correlation. The coefficient of reliability of the test with this technique was (0.871). These values are

tolerable in scientific researches (Awda, 2014).

## 5. SECOND TOOL (SCALE FOR MOTIVATION TOWARDS LEARNING)

The researchers constructed a motivation scale toward learning to assess the levels of motivation among the students to learning the course of the computerized children course of learning in the Faculty of Educational Sciences of the University of Jordan by applying the concept of artificial intelligence in the learning process.

The scale had (30) items as per the five-point Likert scale whereby each item is preceded with five-point gradation of motivation to learning as per the following distribution: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1). Taking into account the reverse scale (1,2,3,4,5) of negative items.

### 5.1. Validity of the Second Tool

The researchers used a sample of faculty members in the Faculty of Educational Sciences of the University of Jordan to test the apparent validity of the scale as a measure of motivation towards learning by first giving the tools to a sample of arbitrators in the educational technology, curriculum and teaching and measurement and evaluation field.

The views of the arbitrators as to the clearness of the items, their linguistic and scientific satisfactory, that the item belonged to the field it was prepared to measure, its applicability to the purposes of the study, the extent to which it covered the required skills, and removal of unnecessary ones were all mentioned.

The researchers made their notes based on the views of the arbitrators and made changes accordingly and implemented the necessary adjustments to present the tools as they would be.

### 5.2. Construct Validity of the Scale for Motivation towards Learning

The construct validity of the scale in the motivation towards learning was extracted by determining the correlation coefficient of each item in the scale to the overall score of the scale using Pearson correlation coefficient. The results are illustrated in the table below.

According to table (3), the correlation coefficients of the respective items in the scale to the total score of the scale based on Pearson correlation coefficient showed that they were positive and statistically significant implying the presence of construct validity within the scale.

**Table 3: Correlation Coefficient of Each Item in the Scale with the Total Score of the Scale Using Pearson's Correlation Coefficient.**

Item Number	Its Correlation Coefficient with the Total Score of the Scale	Item Number	Its Correlation Coefficient with the Total Score of the Scale
1	.809**0	16	.746**0
2	.456**0	17	.312*0
3	.397**0	18	.465**0
4	.491**1	19	.492**1
5	.414**1	20	.404**1
6	.708**1	21	.577**1
7	.658**1	22	.353*1
8	.639**1	23	.607**1
9	.514**1	24	.501**1
10	.512**1	25	.460**1
11	.440**1	26	.410**1
12	.438**1	27	.553**1
13	.415**1	28	.680**1
14	.407**1	29	.376**1
15	.438**1	30	.720**1

\*\* Significant at the (0.001) level  
 \* Significant at the (0.05) level

**5.3. Reliability of the Scale for Motivation towards Learning**

Internal consistency method was applied to the test items to determine the reliability of the scale by use of Cronbach alpha equation. The coefficient of reliability in this way was (0.84).

**6. STUDY RESULTS**

This section of the research deals with the findings of the ongoing research, which sought to know the effect of using the artificial intelligence application (ClassPoint) on achievement and motivation towards

learning among students of humanities faculties at The University of Jordan, in an attempt to answer this question: What is the impact of using the artificial intelligence application (ClassPoint) on achievement among students of humanities faculties at The University of Jordan?

**6.1. First: Results Related to the First Study Question**

"What is the impact of using the artificial intelligence-based software (ClassPoint) on achievement in the computerized children's programs course among students of the Faculty of Educational Sciences at The University of Jordan?"

To address the first research question, the mean and standard deviations of the performance of the two study groups in pre- and post-implementation of the achievement test were computed to indicate the differences in the mean of the experimental group, which applied the artificial intelligence-based software (ClassPoint) to achievement during the computerized children programs course among the students of the Faculty of Educational Sciences of The University of Jordan, and the one of the control group, which applied the usual method. This is revealed in the table 4.

The Table (5) shows that there is an apparent difference between the mean of the experimental group using the artificial intelligence-based software (ClassPoint) on achievement in the computerized children programs course and the mean of the control group which used the conventional one in the Faculty of Educational Sciences of The University of Jordan. The experimental group had higher post-test mean in arithmetic which is (15.86) as the value.

**Table 4: Arithmetic Means and Standard Deviations of the Performance of the Two Study Groups on the Pre and Post Applications of the Achievement Test.**

Group	Number	Maximum Mark	Pre-test Application		Post-test Application	
			Arithmetic Mean	Standard Deviation	Arithmetic Mean	Standard Deviation
Experimental	22	20	9.32	3.37	15.86	1.58
Control	25		9.28	3.14	12.76	2.31
Total	47		9.30	3.22	14.21	2.53

The post-test arithmetic mean of the control group was lower, which was (12.76). To determine whether the difference between the arithmetic means of (3.10) value has a statistically significant value at the level ( $\alpha=0.05$ ), The ANCOVA was carried out to counter the impact of pre-test application results on the post-test application results of same test. The results are indicated in the following table.

Table (6), shows that there is a statistically significant difference at the alpha ( $\alpha=0.05$ )level

between the average of the experimental group which utilized the artificial intelligence-based software (ClassPoint) on achievement in the computerized children programs course among the students of the Faculty of Educational Sciences at The University of Jordan and the post-test arithmetic mean of the control group, which utilized the traditional method, according to the calculated F value of (28.391) with a significance level of (0.001).



**Table 5: One-Way Analysis of Covariance (ANCOVA) for the Difference Between the Performance of the Two Study Groups on the Pre and Post Applications of the Achievement Test.**

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F value	Significance Level	Eta Squared
Pre-test Application	6.981	1	6.981	1.764	0.191	0.167
Teaching Method	112.382	1	112.382	28.391	0.001*	0.392
Error	174.17	44	3.958			
Adjusted Total	293.872	46				

\*: Significant at the significance level (0.05)

Based on this result, the first null hypothesis stating: "There are no statistically significant differences at the significance level ( $\alpha=0.05$ ) between the mean scores of the performance of the experimental and control groups on the post-test of achievement in the computerized children's programs course among students of the Faculty of Educational Sciences at The University of Jordan that is related to the use of the artificial intelligence-based software (ClassPoint)" is rejected. The alternative hypothesis according to which it is argued: There are statistically significant differences at the level of significance ( $\alpha=0.05$  between the mean scores of the

performance of the experimental and the control group on the post-test of achievement in the computerized children programs course among the students of the Faculty of Educational Sciences at The University of Jordan that are related to the use of the artificial intelligence-based software (ClassPoint) is accepted. In order to be aware of the statistical significance of the difference in favor of one of the groups, the adjusted arithmetic means and standard errors of post-test performance of the two groups in the study on the achievement test application were computed. The results are illustrated in the following table.

**Table 6: Adjusted Arithmetic Means and Standard Errors of the Performance of the Two Study Groups on the Post-test Application of the Achievement Test.**

Group	Number	Adjusted Arithmetic Mean	Standard Error
Experimental	22	15.86	0.42
Control	25	12.76	0.40

According to Table (7), the difference between the mean of the experimental group that used the artificial intelligence-based software (ClassPoint) on achievement in the computerized children programs course between the students of the Faculty of Educational Sciences at The University of Jordan and the mean of the control group that used the conventional method was statistically significant hence in favor of the adjusted arithmetic mean of the experimental group since it was higher (15.86) as compared to the adjusted post-test arithmetic mean of the control group (12.76). This outcome proves the fact that there is an effect of applying the artificial intelligence-based program (ClassPoint) on the performance on the computerized children programs course in the students within the Faculty of Educational Sciences at The University of Jordan. It is supported by eta squared of (0.392), which indicates the magnitude of the effect generated when using the artificial intelligence-based software (ClassPoint) to achieve performance in the computerized course of the children programs. That is: 39.2 % of the variance change taking place in achievement was through the

impact of utilizing the artificial intelligence based software (ClassPoint) and the other percentage which is 60.8% has been ascribed to other variables that were not explored by the present study.

**6.2. Second: Findings in regards to the Second Study Question: What are the effects of application of the artificial intelligence-based software (ClassPoint) on motivation to pursue the computerized children programs course among the students of the Faculty of Educational Sciences at The University of Jordan?**

To respond to this question, the arithmetic means and standard deviations of performance of the two study groups on the pre and the post application of the scale of motivation towards learning the computerized children programs course were computed to demonstrate the differences between the mean of the experimental group that used the artificial intelligence based software (ClassPoint) on the scale on motivation towards learning the computerized children programs course among students of the Faculty of Educational Sciences at The

University of Jordan and the mean of the control group which used the conventional method. This is

illustrated in the following table.

**Table 7: Arithmetic Means and Standard Deviations of the Performance of the Two Study Groups on the Pre and Post Applications of the Scale for Motivation towards Learning the Computerized Children's Programs Course.**

Group	Number	Pre-scale Application		Post-scale Application	
		Arithmetic Mean	Standard Deviation	Arithmetic Mean	Standard Deviation
Experimental	22	3.22	0.15	4.07	0.09
Control	25	3.31	0.28	3.66	0.43
Total	47	3.27	0.23	3.85	0.38

Table (8) indicates the presence of an apparent difference between the mean of the experimental group that used the artificial intelligence-based software (ClassPoint) on the scale for motivation towards learning the computerized children's programs course among students of the Faculty of Educational Sciences at The University of Jordan, and the mean of the control group that used the conventional method. The post-test arithmetic mean for the experimental group was higher, amounting to

(4.07), while the post-test arithmetic mean for the control group was lower, amounting to (3.66). To ensure whether the difference between the arithmetic means amounting to (0.41) has a statistically significant value at the significance level ( $\alpha=0.05$ ), One-Way Analysis of Covariance (ANCOVA) was conducted to neutralize the effect of the pre-scale application results on the post-scale application results of the same scale. The following table shows the results.

**Table 8: One-Way Analysis of Covariance (ANCOVA) for the Difference between the Performance of the Two Study Groups on the Pre and Post Applications of the Scale for Motivation towards Learning the Computerized Children's Programs Course.**

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F value	Significance Level	Eta Squared
Pre-scale Application	0.269	1	0.269	2.675	0.109	
Teaching Method	2.174	1	2.174	21.608	0.001*	0.329
Error	4.428	44	0.101			
Adjusted Total	6.648	46				

\*: Statistically significant at the significance level (0.05)

The result of Table (9) shows that the mean of the experimental group that applied the artificial intelligence-based software (ClassPoint) to the scale to motivate the students to learn the computerized children's programs course was statistically different at the level of significance ( $\alpha=0.05$ ) with the calculated F value of (21.608) and the significance level of (0.001).

According to this finding, the third null hypothesis: There are no statistically significant differences at the level of significance ( $\alpha=0.05$ ) between the mean scores of the performance of the experimental and control groups on the post-test of the motivation towards the computerized children's programs course among students of the Faculty of Educational Sciences at The University of Jordan that is connected with the use of the artificial intelligence-based software (ClassPoint) is rejected. The alternative hypothesis stating: "There are statistically significant differences at the significance level

( $\alpha=0.05$ ) between the mean scores of the performance of the experimental and control groups on the post-test application of the scale for motivation towards the computerized children's programs course among students of the Faculty of Educational Sciences at The University of Jordan that is related to the use of the artificial intelligence-based software (ClassPoint)" is accepted.

To know in favor of which group the statistically significant difference was, the adjusted arithmetic means and standard errors of the performance of the two study groups on the post-test application of the scale for motivation towards learning the computerized children's programs course were calculated. Table (10) shows the results.

As Table (10) shows, the statistically significant difference between the mean of the experimental group, which used the artificial intelligence-based software (ClassPoint), on the scale of motivation towards learning the computerized children

programs course, compared to the mean of the control group, which used the conventional method, was in favor of the adjusted arithmetic mean of the experimental group since it was higher and equal

(4.09), whereas the adjusted post-test arithmetic mean of the control group was lower and equal (3.65).

**Table 9: Adjusted Arithmetic Means and Standard Errors of the Performance of the Two Study Groups on the Post-test Application of the Scale for Motivation Towards Learning the Computerized Children's Programs Course.**

Group	Number	Adjusted Arithmetic Mean	Standard Error
Experimental	22	4.09	0.07
Control	25	3.65	0.06

The findings obtained confirm the presence of an effect of the usage of the artificial intelligence-based software (ClassPoint) on the motivation towards learning the course on computerized children programs among the students of the Faculty of Educational Sciences at The University of Jordan. This is supported by the eta squared (0.329) that indicates the magnitude of effects created by using the artificial intelligence-based software (ClassPoint) with motivation to the course of learning the computerized children-based programs. That is, (32.9) percent of the change that happened in motivation to learn the computerized children programs course was as a result of using the artificial intelligence based program (ClassPoint) and the other percentage, which stands at (67.1) percent is attributed to other variables not examined by the study.

## 7. DISCUSSION OF RESULTS AND RECOMMENDATIONS

The fifth chapter involves a discussion of the findings obtained by the researchers, which attempted to determine the effect of implementing the artificial intelligence-based software (ClassPoint) on the achievement during a course in computerized children programmes among students at the Faculty of Educational Sciences at The University of Jordan by answering the following questions of the study:

**7.1. First: The Results Discussion According to the First Study Question: What is the effect of using the artificial intelligence-based software (ClassPoint) on the achievement in the computerized children program course among the students of The University of Jordan Faculty of Educational Sciences?**

The outcomes of the initial research question illustrated presence of statistically significant difference in total score of the performance of the two research groups on the post-test of the achievement

in the computerized children programs course, which indicates an effect on the achievement of students of the Faculty of Educational Sciences The University of Jordan in support of the experimental group. By this outcome, the null hypothesis was rejected and the alternative hypothesis that says: Statistically significant differences were found at the level of significance ( 0.05) between mean scores of the performance of the experimental and control groups on the post-test of the achievement in the computerized children programs course among students of the Faculty of Educational Sciences at The University of Jordan relating to the use of the artificial intelligence-based software (ClassPoint) were accepted.

The researchers attribute this result to the nature of the software used, which is (ClassPoint), in that it facilitates and improves the learning experience as an innovative and modern educational tool relying on visual and auditory elements, and allows learners to interact with educational content in a more effective way. It helps raise the level of achievement among students and provide the necessary support during tests or preparation for them. Here, ClassPoint software can help analyze educational content and explain concepts that students face many difficulties in, which helps students improve their weak points in the specified subject (computerized programs) and focus on the specific topics they need, which helps raise the level of achievement in tests.

ClassPoint software also helped raise the achievement level of students of the Faculty of Educational Sciences in the (computerized children's programs) course through the numerous techniques supported by artificial intelligence. Using ClassPoint enables students to conduct interactive tests continuously during the course. AI is used to provide immediate feedback on students' answers, allowing them to know mistakes immediately and correct them. This is highlighted by ClassPoint software in that it seeks to clarify correct answers, provide

electronic hints or unusual sounds, detailed explanations during correct or incorrect answers, and transition to screens highlighting correct answers, which helps students understand the (computerized children's programs) course correctly and deal with the material through video games supported by ClassPoint software, in addition to clarification with pictures and shapes characteristic of this non-traditional application.

ClassPoint software, using artificial intelligence, also helped students of the Faculty of Educational Sciences by providing detailed reports about their strengths and weaknesses, which helps focus on and reinforce weak points, and change the learning strategy in the way students need before taking the test. This enables them to review the educational material well and reflect on it in an interactive way through using (ClassPoint) software to raise their level of scientific acquisition and take tests in light of the acquired experience, and interact with simulation tests that suit the nature of the tests given in the Faculty of Educational Sciences at The University of Jordan.

It is possible to conduct many trial tests that can help students obtain many answers that simulate real tests, by providing questions similar to those that may be given to students at the time of the actual test. On the other hand, (ClassPoint) software can improve students' ability to answer within the specified time, and even if the answer is less than the specified time due to the immediate support provided by (ClassPoint) software supported by artificial intelligence. Interactive learning and game-based learning provided by that software actually helped raise the level of achievement and helped improve their skills in reaching many solutions and speed in answering among students during their taking of the achievement test in the (computerized children's programs) course.

This result can also be attributed to the fact that using the artificial intelligence-based software (ClassPoint) takes into account saving time and achieving what students need in many activities supported by group discussions or educational games, in addition to some advanced-level practical activities. ClassPoint remains a golden opportunity for the student to facilitate learning according to their preference, through interactive video that gives them an opportunity to learn in the way they prefer and suits them, whether through listening and watching or interacting in a practical way.

The researchers also believe that using (ClassPoint) encourages students to love the learning method by providing a more comprehensive and

diverse interactive educational environment than traditional education, which contributes to improving students' skills in the computerized children's programs course and develops their personal skills, in light of a flexible, exciting educational environment with an encouraging nature that ultimately leads to raising their achievement level in computerized children's programs.

On the other hand, the researchers believe that using (ClassPoint) provides educational material full of tests that can be repeated and immediate feedback from them, which helps identify weaknesses that need improvement and identify strengths to reinforce them. This helps students raise their level of achievement and reduce the level of errors they might fall into as a result.

The results of this study are consistent with the results of the study by (Pacheco-Mendoza et al., 2023), that demonstrated that AI-based applications influence the academic performance of students in the University of Guayaquil. The research findings also concurred with the findings of the research by (Zheng et al., 2023), which indicated that AI influences the amount of student success in their learning subjects. Similarly, the findings of the current research were in line with the findings of the research by (Al-Jarwi, 2020) that indicated that adopting AI technology in the e-learning setting positively influences the acquisition of future thinking skills and the performance in science. The findings of the research were also consistent with the findings of the research conducted by (Rashid and Aziz, 2016), which revealed that the statistically significant effect of AI was significant in increasing the level of student achievement in most courses of study.

## ***7.2. Second: Discussion of Results Related to the Second Question: "What is the impact of using the artificial intelligence-based software (ClassPoint) on motivation towards learning the computerized children's programs course among students of the Faculty of Educational Sciences at The University of Jordan?"***

The findings pertaining to the second study question revealed that there were statistically significant differences in the total score of the performance of two study groups on the post-test of the scale on motivation towards the computerized children's programs course, which demonstrates that teaching using the (ClassPoint) software enhanced the level of motivation toward learning in students of the Faculty of Educational Sciences at The University

of Jordan in favor of the experimental group. Using this outcome, the null hypothesis was rejected and the alternative hypothesis stating: "There are statistically significant differences at the significance level ( $\alpha = 0.05$ ) between the mean scores of the performance of the experimental and control groups on the post-test of motivation towards the computerized children's programs course among students of the Faculty of Educational Sciences at The University of Jordan that is related to the use of the artificial intelligence-based software (ClassPoint)" was accepted. This result may be attributed to the nature of using the (ClassPoint) software, which allows students to customize learning according to their individual needs, enabling the effective integration of AI techniques, analyzing student data, identifying strengths and weaknesses, and suggesting customized learning strategies.

This creates a learning experience that enhances the level of understanding and encourages active participation. The artificial intelligence-based software (ClassPoint) may be used to increase the degree of motivation towards studying the computerized children programs course with the students of the Faculty of Educational Sciences at The University of Jordan by introducing innovation in virtual reality and close interaction with smart applications. In this case, the students will be interested in and engaged to the exploration and learning of the scientific concepts as a motivation factor of the student in the desires to pursue and learn more of the educational content. This result is also attributed to the fact that (ClassPoint) software increases students' enthusiasm and motivation towards learning by using many gaming techniques and interactive activities that in turn motivate students to learn in a fun and attractive way. Interactive challenges related to game software or design can be designed, making learning more enjoyable and increasing the level of self-motivation among students to continue progressing in the educational material. The reason for the impact of (ClassPoint) software on motivation towards learning may also be due to enhancing teamwork and collaboration. (ClassPoint) software provides a field for collaboration among students in designing the computerized children's programs material, and enhances this cooperation through AI techniques that facilitate communication among students and diversify tasks effectively. This creates an environment motivating for collaborative learning, which is reflected in the level of motivation towards learning. ClassPoint software helps students obtain additional supportive and assisting materials that

work to raise their level of competence and access information easily and smoothly. These materials or resources include: video clips, articles, scientific periodicals, and giving numerous references which increase the level of learning among the student and widen their horizons and knowledge where information can be easily and quickly accessed. This increases their motivation to study particularly in (computerized children programs) course among the students of the Faculty of Educational Sciences at The University of Jordan. This result can also be attributed to the fact that using (ClassPoint) software adds an element of excitement, in addition to flexibility, where learning comes according to the students' own pace. Here, they can learn according to their comprehension and speed in receiving information. They can replay the video more than once, re-watch or speed up its time, achieving a suitable and encouraging environment for them without any pressure from stressors. Also, (ClassPoint) includes educational content full of questions and interactive activities that help students be an important part of the educational process, which helps them feel responsible for their learning and increases their level of desire to continue, through using diverse methods, which improves students' motivation level and encourages them to engage in learning the computerized children's programs course. The (ClassPoint) application also considers the element of entertainment, as learning through it contains many excitements, such as: animations, sound effects, educational stories, and interactive videos that make the teaching process extremely attractive for students. When entertainment is linked to learning among students, their level of motivation to learn the computerized children's programs course improves, and they become more willing to follow their lessons and interact with them. This study has found the same results as the study by (Moybeka et al., 2023), which revealed the increasing knowledge regarding the role of AI in education and its capability to influence the future of English teaching with the help of AI, by influencing the desire of students to learn the language. The findings of the study were consistent with the findings of the research by (Qawaqneh & Alawamreh, 2023) in the fact that it demonstrated the effects of AI-based virtual laboratories in shaping the motivation of students to learn mathematics. The results of the study were also in agreement with those of the study (Al-Sawalma, 2022), which indicated the effectiveness of an application built on artificial intelligence in developing logical thinking skills and motivation towards learning the computer

tool among eighth-grade students. The results also agreed with the results of the study (Al-Qarni and Imran, 2021), which found significant differences at the level of significance (0.001) between the motivation of students to learn programming prior and after using AI technology in support of the post-test outcome. The study outcomes concurred with the outcomes of the research by (Mazlan et al., 2023), that (ClassPoint) software resulted in an increase in the degree of motivation towards learning in the hearts of students, and that it is an interactive tool that can be applied to all students of all levels of learning, and that it is effective in imparting content to the students in a unique interactive manner.

### 7.3. RECOMMENDATIONS AND SUGGESTIONS

Based on the study's results and conclusions, the following recommendations are proposed

1. Adopting the use of the artificial intelligence-based software (ClassPoint) in teaching, due to its positive impact on teaching the computerized children's programs course.
2. Holding training courses for faculty members at The University of Jordan, especially the Faculty of Educational Sciences, covering the use of the (ClassPoint) software and methods of benefiting from it, in addition to holding training courses for students on how to use and benefit from the artificial intelligence-based software (ClassPoint).
3. Conducting future exploratory studies on using the artificial intelligence-based software (ClassPoint) in improving achievement and motivation towards learning in other scientific topics, and applying it to different samples, for the purposes of generalization and comparison.

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