The Effectiveness of a Ubiquitous Learning Program on Development of Learning Outcomes among Students of the College of Education at Ajloun National University

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Abstract

Research "The Influence of Value Clarification Technique (VCT) Approach Assisted by Moral Dilemmas Discussion in Learning Pancasila Democracy on Conceptual Understanding and Students' Moral Attitudes Learning outcome". Research problem; (1) The objective of this research was to determine whether or not the ubiquitous learning program at Ajloun National University College of Education improved student learning results. Students in the College of Education at Ajloun National University were studied over three months to see whether or not the program had a positive effect on their learning across the cognitive, emotional, and psychomotor domains. Fifty students participated in the study, with 25 each assigned to the experimental and control groups. The study found that post-test scores on learning outcomes in the cognitive, affective, and psychomotor domains were significantly higher for the experimental group compared to the control group. The research also showed that the experimental group's pre- and post-measurement mean scores on the learning outcomes across the cognitive, affective, and psychomotor domains favored the post-measurement. The experimental group's post- and post-follow-up scores on cognitive, affective, and psychomotor learning outcomes do not differ from the control group's results by a statistically significant amount.

Keywords: *Ubiquitous Learning Program, Development of Learning Outcomes, Ajloun National University.*

Introduction

There are a lot of changes happening in the fields of knowledge, information, and technology right now. Because of this, it is the job of education to make sure that the next generation is ready to deal with these changes, which include communication technology, interactive multimedia, better means, multiple exploratory methods, electronic lessons and lectures, virtual learning environments, full web-based courses, and mobile learning (Ruiz-Calleja et al., 2022). In the 1980s, computers and local and global communication networks were used in education. This led to the development of the e-learning model, which helped make face-to-face distance learning possible. The wireless revolution led to the development of a new model, mobile learning, and then ubiquitous learning (Alkhafaji et al., 2020).

Perhaps the challenge is to raise a generation that is capable of adjusting to all the advancements in communication technology, interactive multimedia, improved tools,

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classes, and education delivered electronically through virtual e-learning environments (Pishtari et al., 2020). The concept on which education, curriculum, and teaching techniques are founded is no longer conventional, as is the possibility to incorporate the mobile phone or cell phone in the learning process given that it is currently the device used by students worldwide (Sam et al., 2020). A shift in the roles of the instructor, the student, and even the administrative systems in the overall educational process resulted from the outdated techniques failing to satisfy the demands of this open and swiftly changing period. A new style of learning called mobile learning or mobile learning led to the birth of ubiquitous learning since the educational process had almost entirely been transformed into a digital one thanks to the wireless revolution (Ashar et al., 2020). The phrase computing or ubiquitous computer, which denotes that it is always and everywhere present, was first coined by researcher Mark Weiser at Xerox in the late 1980s, when the concept of pervasive education first started to take shape, eventually is now well known that the computer retracts and eventually vanishes (Enang, 2022).

Pervasive learning represents a vision of learning that occurs not only in classrooms but also at home, in the workplace, on the playground, in the library, and through our daily interactions. Mobile learning devices, laptops, smartphones, personal digital assistants, and e-book readers make it simple to engage in ubiquitous learning (Kopotun et al., 2020). Ubiquitous learning is the type of learning that is always present, everywhere, and at all times, but we are unaware of it. We can say that the ubiquitous learning environment is found in the medium that allows the learner to be fully immersed in the learning process, and ubiquitous learning provides the necessary props and stimuli to encourage learners' participation without requiring active attention. In a geographically dispersed setting, the extensive education system creates an environment that supports the educational process through digital media (Ferreira Vieira & Castilho, 2018).

The primary objective of the teaching and learning processes is to enhance students' comprehension of theoretical and practical materials, provide them with the various skills they contain, and enable them to implement those skills in new situations (Konopek et al., 2018). Through the use of modern education techniques, such as the blackboard system and pervasive education, universities seek to provide students with learning skills and train them to cope with them. The relationship between computer learning and contemporary communication methods, which have established their significance in education, especially the idea of pervasive education, which will emerge for future generations of learners in the revolution (4G-5G) and educational technology using mobile, which will enable students, is one way that technological development using many technological innovations and means of communication has a clear impact on education (Indrawan et al., 2020). They may study on the go thanks to flexible learning methods like the internet that do not require cumbersome ground wire attachments or a set location. In addition to solving numerous educational issues for a large number of future generations, the advancement of educational technology using mobile and other wire-free devices has demonstrated the value of using widespread education among academics, professors, and students (Moreno López et al., 2022). This has demonstrated the effectiveness and adaptability of learning through the use of devices that have been developed and diversified in methods. In light of this, the researcher wants to give a suggested program for using ubiquitous learning in teaching and its effects on how learning outcomes are developed among Aloun National University students.

Research Questions

Based on the aforementioned, the current study aims to respond to the following questions:

1. Are there statistically significant differences between the scores of the experimental group and the control group after applying the program of employing

ubiquitous learning in teaching on the learning outcomes scale of Ajloun National University students?

2.   Are there statistically significant differences between the scores of the experimental group before and after applying the program of employing ubiquitous learning in teaching on the learning outcomes scale of Ajloun National University students?

3.   Are there statistically significant differences between the scores of the experimental group in the post-application and follow-up application on the learning outcomes scale of Ajloun National University students?

Literature Review

Mark Weiser coined the term Ubiquitous Computing in the late 1980s to describe the pervasiveness of computers in all aspects of life. We are surrounded by and immersed in a computerized environment wherever we go (Hasanov et al., 2019). Typical computer components include a central processing unit, a display, a keyboard, and a mouse. Rather, many devices and equipment operate with microprocessors, including education-related devices such as computers, mobile phones, digital cameras, personal digital assistants, and e-book readers (McLeod & Kun, 2019). All of this is powered by microprocessors, which could contribute to the demise of the computer as we know it. Ubiquitous learning is the form of learning that is always present, everywhere, and at all times, but we are unaware of it. It is defined as the learning that surrounds us at all times and in all places, but we do not perceive it, and can be accessed through devices (Lee & Moon, 2021). E-learning is a way of thinking about education that expands beyond traditional classrooms to include various settings and contexts, including the home, the job, the playground, the library, the museum, and our everyday interactions with others. The term "ubiquitous" reflects how deeply embedded technological tools have become in today's classrooms. A new educational knowledge architecture enabled by pervasive learning is made possible by multimedia providers (Suartama et al., 2022).

Many e-learning systems have been created in recent years, with the vast majority of these systems adopting a client-server or server-based architecture. These settings put emphasis on the teacher and the learner and mimic real-world learning situations in which instructors create materials and students consume them (da Silva et al., 2021). Learning Collaborators, Learning Contents, and Teaching Services are the three main pillars of the ubiquitous learning architecture that are interconnected, used in tandem, and made available to students in a single, all-encompassing space (Kato et al., 2016). Students' contextual factors, such as when and where they are studying, are used to determine the best ways to deliver relevant knowledge to them. This is what we mean by "ubiquitous learning." time, location, and the availability of appropriate educational services and materials for individual pupils; Therefore, students' environments have a significant impact on the efficacy and efficiency of ubiquitous learning (Firdaus & Khaerudin, 2019). The concept of "ubiquitous learning" refers to the idea that education can take place anywhere, not just in formal settings like schools and universities. The term "ubiquitous computing" is used to describe the widespread use of computers in classrooms nowadays (Subiyakto et al., 2019).

The multimedia system enables ubiquitous learning, which contributes to the formation of a novel educational knowledge structure. This system establishes a digital media-supported learning environment for students (Ting, 2019). Student assessment serves an important role in ubiquitous learning. Because of the interconnected nature of computer engineering, the interface between computers, computer network technology, and computer-assisted collaborative work, it is imperative that the educational system be structured to meet the most pressing needs of students majoring in these fields (Liang et al., 2021). The implementation of student learning in the educational setting has been proposed within the

context of the environment. This environment goes beyond the confines of the traditional learning system and incorporates ubiquitous learning, which involves the use of audio, video, and chat media to facilitate continuous synchronous and asynchronous interaction between students and the content-producing teacher. It is crucial to appropriately direct or monitor this form of learning to achieve desired outcomes (Nguyet et al., 2021).

In the case of the synchronous method, the pervasive teaching system is intended to include audio, video, and conversation media in addition to online test supervision. The main aim of the synchronous approach is to offer students an interactive setting that enhances their in-class experience (Pishtari et al., 2020). This approach involves the development of a study protocol that incorporates an electronic examination tool to facilitate comprehensive training of the learner in the subject matter. Additionally, it contains remote assessments that offer flexibility for students to complete within a predetermined timeframe. Mobile learning technologies such as laptops, portable computers, mobile phones, personal digital assistants (PDAs), and e-book readers have the potential to support ubiquitous learning, as highlighted by Ma and Yu (2019). Ubiquitous learning is the type of learning that is always present, everywhere, and at any time, but we are unaware of it. Ubiquitous learning is a natural evolution of mobile learning, which is founded on e-learning, i.e., from e-learning to mobile learning (Khenioui, 2019).

Because the mobile learning environment is the educational situation, the learner and teacher must be conversant with web services as one of the pervasive learning tools. In addition to various devices that include microprocessors and memory, such (mobile learning devices such as laptop computers, mobile phones, and smart devices in their various forms), multiple devices include microprocessors and memory—also distributed learning environment servers, teaching strategies, database, and Bluetooth and Wi-Fi wireless technologies (Jia et al., 2022). In addition to sensors, they detect any changes that occur and remind the pupils of their presence. Services for instructors and students, including information services, a library, identification cards, and language translation (Meriläinen & Piispanen, 2018).

Ubiquitous learning encompasses three distinct learning styles, which are delineated based on educational activities as well as the temporal and spatial aspects of interactions.

Synchronous learning style: This method supports real-time interactions with audio and video resources in addition to text structures. This method is also distinguished by the interaction icons and menu box, which enable the student to interact with the learning material and others. The client-server model is the foundation of synchronous learning. A distributed learning server, a teacher client, and a pupil client comprise this method (Al-Omari & Al-Basil, 2019). The client environment encompasses four modules that provide synchronous learning services for students. The role of an information manager is crucial in the context of teacher testing. This involves the instructor utilizing a widely used editor to create a test paper, which is then stored within a ubiquitous learning environment. Additionally, the teacher exam has an information manager comprising five buttons: test paper frame, sample paper frame, test paper record, delete test paper, as well as a button to initiate the test. Furthermore, a menu box is there, displaying the recorded material (Drei, 2019). This suggests that the system possesses an inherent intuitiveness and simplicity that facilitates ease of use for students. The role of the individual referred to as "instructor exam monitor" is to oversee and supervise the examination process. This module governs the usage of audiovisual materials to enhance instructor and student perception. This determines the allocation of updating, decision-making, and management duties. Assign resources by resource demand Information researcher student There are two buttons available to information researcher students: one for the exam link and one for waiting for the test. After accessing the server site, the educational materials stored on it are displayed. Press the Wait for Test button after selecting the material - Student Exam Manager (Baklawa & Abdelhak, 2023). The responses of the students are stored in a database to

track their progress. This unit contains the exam paper and a separate answer sheet for the test, which is not shared among all students (Ruiz-Calleja et al., 2022).

Asynchronous Learning Style: The Asynchronous Learning Style is characterized by its emphasis on time and space independence, as well as the utilization of asynchronous PDA communication. The synchronization of students' and teachers' presence in a shared online space is not a prerequisite for communication and interaction. Amongst each other. PDA-based student learning offers accessibility to students depending on their circumstances and allows for flexibility in terms of time and location, including but not limited to their homes, workplaces, and other settings (Al-Omari & Al-Basil, 2019). Blended learning facilitates the simultaneous or asynchronous participation and communication of students by incorporating the principles of cooperative learning. Furthermore, it is worth noting that educators and learners situated in distant areas have the opportunity to engage in real-time and asynchronous communication, facilitating interactive multimedia-driven education. By employing the blended learning approach, students can enhance their understanding of contemporary scientific literature by establishing direct live connections to designated files or websites (Drei, 2019).

Learning outcomes represent what a pupil should know and be able to do as a result of completing a specific course or educational program. Institutions of higher education endeavor to define the desired learning outcomes to prepare students to meet the needs of society and its development, as well as labor market demands based on future variables and the advanced knowledge and skills they possess. Learning outcomes are statements that define the knowledge and skills a student should possess (Baklawa & Abdelhak, 2023). It is expected that the student will complete it upon completion of a specific course or educational program. The formulation of specific and accurate learning outcomes assists the teacher in completing a variety of tasks, such as organizing his work in a way that facilitates his students' acquisition of the intended learning outcomes. In addition, learning outcomes aid in focusing on essential priorities that correspond to students' requirements. In addition to choosing course content, students must also select a course format (Drei, 2019).

Educators classified the learning outcomes into three main domains, each of which corresponds to an aspect of the personality that the educational system seeks to build and form in the student. These domains are represented in the cognitive domain, the emotional domain, and the psychomotor domain (Al-Omari & Al-Basil, 2019).

Previous Studies

Al-Omari and Al-Basil (2019) this study aimed to examine the impact of a proposed program utilizing Ubiquitous learning on the development of learning outcomes and the reduction of mind wandering. Additionally, the research investigated the extent to which the effects of the program persisted over time. The study was conducted with a sample of twenty (20) students, divided into an experimental group of ten (10) students and a control group of ten (10) students. The study employed a learning outcomes assessment, a questionnaire on mind wandering, and a proposed program that leveraged Ubiquitous learning. The aim was to investigate the impact of Ubiquitous learning on the development of learning outcomes and the reduction of mind wandering. The program was designed by the researcher specifically for this study. The findings of the study imply that there exist notable disparities between the proposed program and the program employing Ubiquitous learning in terms of their impact on the enhancement of learning outcomes and the mitigation of mind wandering.

Drei (2019) this study examines the impact of the identified effect on the pervasive acquisition of mathematical skills and imaginative thinking among intermediate-level tertiary students. The duration of the investigation undertaken by the researcher spanned

the entirety of a semester. The study was limited to those enrolled in the intermediate level of tertiary education. The post-test was conducted with the assistance of both the experimental design group and the control group. The study's sample comprised 60 pupils, who were divided into two subgroups of 30 students each. The study employed variables such as intelligence quotient (IQ), age in months, student proficiency in mathematics, and a measure of prior knowledge to establish equivalence between the two groups. The researcher is required to ascertain the content of the study and conduct an analysis thereof. Additionally, they must establish the behavioral objectives for both groups and develop a test for innovative thinking. This test should comprise twenty items that are carefully designed by the three subfields of inventive thinking, namely fluency, flexibility, and originality. The participants were given instructions by the researchers in each of the study groups. Following the implementation of the instructional plan designed for both the experimental and control groups, a representative sample from each group was assessed using post-tests to measure their learning of the taught items. The results of two separate measures indicated that the group exposed to experimentalism had higher levels of originality compared to the control group.

Ahmed et al. (2020) revealed how middle school student's progress in the course and attitude toward the environment was affected by the (simultaneous - asynchronous) communication pattern in the ubiquitous learning environment. The research group was made up of (80) students who were randomly chosen from the second grade of preparatory students at Yusef Al-Siddiq Educational Administration in the Fayoum Governorate's Al-Mushark Qebili Preparatory School. They were divided into two experimental groups, each with (40) male and female students. The findings demonstrated the effectiveness of a distributed learning environment in fostering academic success and environmental direction. Additionally, the experimental group that communicated simultaneously performed exceptionally well on the course's achievement test. Additionally, the experimental group that used a simultaneous communication strategy performed better on a scale of environmental orientation.

Baklawa and Abdelhak (2023) Determined the effect of the interaction between the manner of sailing (steps/list) and the mental capacity in a ubiquitous learning environment. The research sample for the academic year 2022-2023 consisted of (80) pupils from the Fatima Al-Zahraa Preparatory School for Girls in Port Said Governorate. Four experimental groups of students were created. To investigate the research objectives, the two researchers developed a set of instruments, including a survey designed to identify students' opinions about e-learning environments and sailing style, a note card for performance, an achievement test intended to measure the cognitive side, and a measure of cognitive control. Based on the interaction between navigation style (list) and cognitive ability (high) (fourth group), the results favored the ubiquitous learning environment.

Methodology

To investigate the impact of an independent variable, namely the ubiquitous learning program, on a dependent variable, specifically learning outcomes, the researcher employed the quasi-experimental methodology. The researcher selected an experimental approach that entailed the establishment of a control group and an experimental group. The selection of sample students from Ajloun National University College of Education was conducted through random sampling. The participants were measured before and following the trial. The procedure can be summarized as follows:

1.   The 50 participants in the study were picked by a random sampling method and subsequently divided into two groups: a control group and an experimental group.

2.   Assess the equivalence of learning outcomes (cognitive, emotional, and psychomotor domains) between the students in both groups.

3.   The experimental group was exposed to the independent variable, which in this case was the ubiquitous learning programs, while the control group did not get this intervention.

4.   After the implementation of the independent variable, post-measurements were conducted for both the control and experimental groups to assess the impact of the introduced variable.

5.   After about one month, a follow-up assessment is conducted on the experimental group to ascertain the continued impact of the ubiquitous learning program. This assessment serves the purpose of verifying the authenticity of the observed changes in the dependent variable, specifically of learning outcomes in the cognitive, affective, and psychomotor domains, and to determine if these changes are enduring rather than transient.

Study Population and Sample

The participants in this study were chosen by a random sampling method from the student population enrolled in the College of Education at Ajloun National University during the second semester of the academic year 2022/2023. A total of 50 students were selected and subsequently divided into two groups of equal size, with each group consisting of 25 students. One of the two groups was selected by a random process to serve as the experimental group, which would be exposed to the ubiquitous learning program for the duration of this study. Conversely, the other group was designated as the control group, and would not be provided with the ubiquitous learning program. The experimental sample underwent the application of the ubiquitous learning program for three months, with a frequency of 12 sessions each month. Consequently, each student received a total of 36 sessions.

Study Instrument

Two research instruments were utilized to achieve the study's objectives:

First: a scale of learning outcomes (cognitive, emotional, and psychomotor domains).

In constructing this test, the two researchers relied on the theoretical frameworks that addressed learning outcomes, which indicated that the learning outcomes test should include the three levels in balanced proportions, given the character of the study material for the students. Therefore, the researcher analyzed the study's content in light of three learning outcomes. The 20-item scale measures cognitive skills with 10 items, emotional skills with 5 items, and psychomotor skills with 5 items. The items are ordered from less difficult to more difficult duties. The scale served as a pre-and post-test as well as a follow-up measurement instrument for the study's sample.

Second: The proposed program to employ ubiquitous learning

Ubiquitous education is more than a learning and instructing method. This form of education is an expansion and extension of the concept of pervasive computing. It defines the ubiquitous presence of computers in our learning, which contributes to the formation of a new educational knowledge structure. We can say that the researcher has utilized all methods of ubiquitous learning by designing an interactive course using ubiquitous learning methods to produce learning outcomes that are represented in the cognitive, emotional, and psychomotor domains.

Instrument Validity and Reliability

Two methodologies were employed to ascertain the reliability and accuracy of the scale:

1.   The validation of the scale's content involves its presentation to a panel of ten arbitrators, with the consensus being determined by the proportion of arbitrators who agree with the scale reaching a threshold of 80%.

2.   The discriminatory validity of the scale was assessed by experimenting with a sample size of 15 students. The discriminating validity (F) values, namely 9.83, 10.35, and 13.20, exhibited statistical significance.

The assessment of reliability was conducted by employing the internal consistency method, specifically utilizing Cronbach's alpha equation. The overall reliability coefficient for the scale was determined to be 0.834, while the reliability coefficients for each of the three dimensions ranged from 0.756 to 0.845.

Data Analysis

The mean scores and standard deviations of the pre-test and post-test were computed after the collection of data. The efficacy of the ubiquitous learning program has been demonstrated in facilitating improvements in students' learning outcomes across the cognitive, emotional, and psychomotor domains. This was assessed by measuring the effect size through the utilization of the Eta square. The Z-value and Wilcoxon test were utilized to illustrate the distinctions between two comparable samples.

Results and Discussion

Before the implementation of the ubiquitous learning program, measures were taken to guarantee that both the experimental and control groups exhibited comparable learning outcomes in the cognitive, emotional, and psychomotor domains, as evidenced by the data presented in Table 1.

Table 1: Pre-Measurement to Test Learning Outcomes

Domains	Groups	N	Mean Rank	Sum of Ranks	U	Z	P
Cognitive	Experimental	25	10.50	262.50	36.00	0.510	0.450
	Control	25	12.40	310.00			
Emotional	Experimental	25	11.40	285.00	26.50	1.350	0.110
	Control	25	9.50	237.50			
Psychomotor	Experimental	25	11.50	287.50	23.00	0.240	0.650
	Control	25	11.70	292.50			
Total	Experimental	25	11.20	280.00	21.00	0.150	0.840
	Control	25	11.30	282.50			

Table 1 illustrates that there are no statistically significant differences in the mean scores of students in the experimental and control groups during the pre-measurement of learning outcomes across the cognitive, emotional, and psychomotor domains.

To respond to the first query that states "Are there statistically significant differences between the scores of the experimental group and the control group after applying the program of employing ubiquitous learning in teaching on the learning outcomes scale ofAjloun National University students?". The following table displays the findings.

Table 2: Post-Measurement to Learning Outcomes

Domains	Group	N	Mean Rank	Sum of Ranks	U	Z	P
Cognitive	Experimental	25	16.80	420.00	12.00	3.650	0.007

		N	Mean Rank	Sum of Ranks			
	Control	25	10.10	252.50			
Emotional	Experimental	25	18.50	462.50	5.00	3.650	0.000
	Control	25	8.90	222.50			
Psychomotor	Experimental	25	18.90	472.50	3.00	3.730	0.000
	Control	25	8.80	220.00			
Total	Experimental	25	18.00	450.00	7.00	3.560	0.001
	Control	25	9.00	225.00			

Post-test results on the cognitive, emotional, and psychomotor domains, as well as the overall score, demonstrate a statistically significant difference between the experimental and control groups (see Table 2). This indicates that there are positive learning outcomes for the pupils in the experimental sample.

The researcher believes that this outcome was possible because of the success of the proposed program in integrating pupils into the classroom. Students would be better able to reach their learning objectives and grow in critical thinking with this integration in place. In addition, the proposed program allowed for increased student engagement and a more upbeat mood in the classroom. Students would be able to put into practice the knowledge and abilities they developed through deliberate study and effort. Students would be able to work together on a variety of projects and assignments thanks to the proposed program, fostering an environment conducive to the sharing of insights and expertise. Students in the experimental group who were taught with the proposed program to apply ubiquitous learning in teaching benefited from all of these factors, which led to the development of learning outcomes. The study of Al-Omari and Al-Basil (2019) agrees with these findings. Studies by Drei (2019), Ahmed (2020), and Baklawa and Abdelhak (2023) all found that learning in a ubiquitous setting enhanced creative problem-solving, communication, and cooperation between navigational style (checklists) and cognitive ability.

To respond to the second query that states "Are there statistically significant differences between the scores of the experimental group before and after applying the program of employing ubiquitous learning in teaching on the learning outcomes scale ofAjloun National University students?". The following table displays the findings.

Table 3: Measurements Taken Pre and Post an Experiment

Domains	Pre/ Post	N	Mean Rank	Sum of Ranks	Z	P
Cognitive	Negative rank	1	1.00	1.00	3.750	0.006
		24	11.00	264.00		
	Positive rank	0				
	Ties	25				
	Total					
Emotional	Negative rank	1	1.00	1.00	3.820	0.004
		24	11.00	264.00		
	Positive rank	0				
	Ties	25				
	Total					

Domains		N	Mean Rank	Sum of Ranks	Z	P
Psychomotor	Negative rank	0	0.00	0.00	3.850	0.003
		25	13.00	325.00		
	Positive rank	0				
	Ties	25				
	Total					
Total	Negative rank	1	1.00	1.00	3.650	0.006
		24	11.00	264.00		
	Positive rank	0				
	Ties	25				
	Total					

Table 3 displays statistically significant differences between the experimental group's mean scores on the cognitive, emotional, and psychomotor domains, as well as the total score, indicating that the post-measurement is superior. This suggests that after being exposed to the experimental condition, pupils' learning results improved.

The researcher also took into account that the experimental group students' average grades improved significantly after implementing the program within the suggested program. This allowed the students to put their knowledge and skills into practice and put what they had learned into practice through the course material. The proposed program also gave students the chance to make mistakes when using infographic design and multimedia design techniques and then allowed them to fix these mistakes in a collaborative and interactive environment, which helped them learn the necessary knowledge and abilities. After all, learning isn't possible without making mistakes. The suggested program's activities were dependent on students practicing the abilities it covered in both individual and group settings. This practice helped students gain control of the program's theoretical and scientific components.

To respond to the third query that states "Are there statistically significant differences between the scores of the experimental group in the post-apply and follow-up apply on the learning outcomes scale ofAjloun National University students?". The following table displays the findings.

Table 4: Measurements of the Experimental Sample Post and Follow-up Test

Domains	Pre/ Follow	N	Mean Rank	Sum of Ranks	Z	P
Cognitive	Negative rank	3	2.50	7.50	1.520	0.160
		0	0.00	0.00		
	Positive rank	23				
	Ties	25				
	Total					
Emotional	Negative rank	22	6.60	145.20	1.360	0.224
		2	8.70	17.40		
	Positive rank	1				
		25				

	Ties					
	Total					
Psychomotor	Negative rank	1	4.00	4.00	0.755	0.360
		2	8.00	16.00		
	Positive rank	22				
		25				
	Ties					
	Total					
Total	Negative rank	22	8.00	176.00	1.720	0.095
		3	6.50	19.5		
	Positive rank	0				
		25				
	Ties					
	Total					

Based on the data presented in Table 4, there is a lack of statistically significant differences observed in the mean scores of the experimental group during the post-test and follow-up evaluations. These findings indicate that the program's efficacy remained consistent during the post-intervention period and that there was no recurrence of symptoms or regression after its completion.

These results can be explained by the fact that the suggested program helped the students understand the knowledge and skill content, practice it, and apply it in new settings, enabling them to reach high levels of learning outcomes. As a result, there was no decline in these levels for them. In addition, rather than merely knowledge and information, the three tiers of learning outcomes include skills. When students can apply and practice their mental and practical abilities in various circumstances, as was done in the proposed program, the researcher believes that they will not be lost easily or soon.

Conclusion

This study supports the idea that a ubiquitous learning program in teaching impacts the development of learning outcomes among students of the College of Education at Ajloun National University. Therefore, it is beneficial for faculty members to enhance students' learning outcomes across the cognitive, emotional, and psychomotor domains by the objectives of the program. Students would be better able to meet their learning objectives and develop their critical thinking skills if a dispersed learning program was used in the classroom. The findings of this study demonstrated that students who participate in a ubiquitous learning program have high levels of learning outcomes in the cognitive, affective, and psychomotor domains. One might draw the conclusion that a ubiquitous learning program enables students to collaborate on a range of projects and assignments, promoting an atmosphere favorable to the exchange of insights and skills. All of these elements contributed to the establishment of learning outcomes, which helped students who were taught using the suggested program to utilize ubiquitous learning in teaching. Additionally, the suggested program allowed students to make mistakes while utilizing infographic design and multimedia design techniques and then allowed them to rectify these mistakes in a cooperative and dynamic environment, which helped them develop the necessary skills.

Acknowledgments

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