The Impact Of Including An Interactive Educational Video On Enhancing Academic Achievement

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Abstract

The primary aim of this study was to assess the impact of including an interactive educational video on enhancing academic achievement among secondary school students in Abha Governorate. The study consisted of a sample of 64 students, with an equal distribution of 32 participants in both the experimental and control groups. The results of the study revealed a statistically significant increase in post-test scores pertaining to academic success in the experimental group as compared to the control group. Furthermore, the inquiry revealed that there was a significant improvement in the mean scores of the experimental group in terms of academic achievement, as observed from the initial assessment to the second measurement. There was no observed statistically significant disparity in academic achievement scores between the experimental group and the control group, both immediately after the intervention and over the subsequent evaluation period.

Keywords: interactive educational video, academic achievement, Secondary School Students, Abha Governorate.

Introduction

The current era is characterized by a profound technological revolution that has been shaped by a succession of advancements throughout the years, culminating in its pinnacle now (Al-Snaid & Altawalbeh, 2020). The global community has experienced a significant technology change across several sectors, with education emerging as a particularly crucial domain. In contemporary times, there is a notable proliferation

of advanced technologies that have significantly enhanced the presentation of instructional materials, rendering them aesthetically appealing and facilitating the learning process for students (Hassan, 2023). To impart knowledge to individuals in a manner that is both engaging and thorough, so facilitating their cognitive development and academic success. Educational technology currently assumes a significant and foundational role in the educational domain, facilitating the enhancement of students' cognitive, psycho-emotional, social, and motor proficiencies (Hassan & Obeidat, 2022). This is achieved through the utilization of various tools, strategies, and methodologies that effectively foster student engagement and motivation towards the learning process (Al-Mutairi, 2022).

The educational system is inherently susceptible to the influence of educational technological advancements, which have had a profound impact on various aspects such as curriculum objectives, instructional activities, presentation methods, and the roles of both teachers and learners (Anderson & Davidson, 2019). The methods employed in teaching and learning have undergone significant transformations, giving rise to various contemporary educational concepts, including e-learning, interactive video, and multimedia (Nur Laila & Fitra Raharja, 2021). Furthermore, numerous other themes pertaining to contemporary technology inside the realm of education. Hence, there is a growing imperative to identify strategies for leveraging technological advancements in the realm of education (Palaigeorgiou et al., 2019). These innovations have demonstrated their capacity to cultivate a conducive educational environment and enhance it in order to effectively accomplish the objectives of the educational process and ensure its efficacy. Furthermore, they alleviate the pedagogical responsibilities shouldered by educators. These technological advancements possess the capacity to foster progress and ingenuity within the realm of education (Sozeri & Kert, 2021).

The instructor employs various methodologies to assist learners in attaining a range of distinct objectives. The objectives encompass many activities such as engaging in discussions, posing questions to the learner, strategizing and formulating a project, or presenting a topic for the learner to contemplate and develop solutions for (Afify, 2020). The

achievement and culmination of the course hinge upon the successful execution of these tasks. The process of implementation encompasses various aspects, including the pedagogical approach employed, the strategies utilized to create educational scenarios, and the incorporation of abundant knowledge, habits, trends, and desired ideals (Altinpulluk et al., 2019). The significance of these methods and objectives cannot be overstated. Hence, the utilization of interactive videos played a crucial role in enabling teachers to effectively attain the stated objectives across various disciplines and academic domains (Ariffin & Ismail, 2018).

The current era, characterized by the information age and communications revolution, necessitates the adaptation of educational institutions' programs to align with these transformative developments. Interactive video is widely regarded as a highly significant contemporary technological advancement within the realm of education. It embodies a novel paradigm that actively contributes to the transformation of conventional educational practices inside academic institutions (Bétrancourt & Benetos, 2018).

Interactive educational videos have emerged as a prominent educational tool in the modern day. The primary purpose of this system is to deliver audio-visual information based on the student's replies, so influencing their academic performance. The audio and visual elements are projected onto a screen, which serves as a component of an integrated system comprising a computer, an input device, and graphical capabilities (Diquito et al., 2023). The utilization of storage technology enables the presentation of information through interactive video, which incorporates video clips and still frames accompanied by textual content, graphics, and audio elements. This approach involves dividing the video clips into segments, each displayed on a separate screen (Hung et al., 2018). Consequently, the presentation relies on a multi-screen system for the purpose of seeing distinct components of the instructional material, so enabling the computer to facilitate interactive engagements. This feature enables students to exert control over their learning experience, including the pace, trajectory, order, and quantity of information they require (D'Aquila et al., 2019).

Interactive video is a significant advancement in educational technology due to its distinctive attributes that enable multiple applications, including teaching. This technology allows learners to engage with video sequences and subsequently respond to interactive educational prompts. The integration of interactive video has proven to enhance learners' academic performance, making its utilization imperative in the teaching process (Palaigeorgiou & Papadopoulou, 2018). Numerous studies have substantiated its efficacy in fostering academic achievement. The integration of educational technologies, such as interactive educational videos, within the teaching process necessitates careful consideration and active implementation (Razis et al., 2018). It is crucial to identify the specific areas where these technologies are needed and subsequently explore suitable recommendations and solutions to effectively address the challenges associated with their utilization in secondary school education (Shahrokni, 2018).

Numerous scholarly investigations, including those conducted by Wachtler et al. (2018), Gedera and Zalipour (2018), and Pramerta (2018), have substantiated the existence of a dearth in the utilization of interactive video as an instructional approach for certain subjects. These studies reveal that prevailing teaching methodologies continue to rely on traditional modes of instruction centered around indoctrination and rote memorization, thereby underscoring the limited adoption of alternative pedagogical strategies. Contemporary technological advancements, along with the instructor's exclusive dependence on textbooks as the primary informational resource, predominantly employing visual aids that fail to foster comprehensive comprehension of the subject matter. This study aims to investigate the impact of interactive educational videos on the academic accomplishment of secondary school students in Abha Governorate, considering the limited research available on this topic in the Kingdom of Saudi Arabia.

Research Questions

The aim of this study is to investigate the aforementioned questions within the framework of the prior discussion.

1- Do the outcomes of the experimental and control groups on an academic achievement evaluation demonstrate

statistically significant alterations subsequent to the implementation of an interactive educational video program?

2- Are there significant differences in the academic achievement of the experimental group pre- and post-implementation of an interactive educational video program?
3- Is there a statistically significant difference detected between the scores obtained from post-test and follow-up tests when assessing academic achievement?

Literature Review

The inception of the video disc may be traced back to the year 1973, with its subsequent proliferation in the United States commencing in 1978 and in Europe in 1982 (Musa & Isa, 2022). At first, the utilization of this technology was mostly confined to the production of animated films intended for personal consumption. Subsequently, the digital framework was included, resulting in enhanced visual fidelity (Ibrahim & Abu Hamid, 2017). The implementation of laser technology in computer systems in 1982 led to the emergence of compact discs (CD-ROM), which significantly enhanced the storage capacity of video disks and enabled more efficient storage of graphic data (Tuma, 2021). Subsequently, interactive CDs were introduced as a result of these advancements. The first commercially accessible compact disc (CD-1) was introduced, leading to efforts to integrate video disks and hyper cards. This technological advancement facilitated the storage of both static and dynamic visual content on video disks. During the transition from the late 1980s to the early 1990s, the development of interactive video projects started to gain prominence (Al-Sqria & Al-Salmi, 2020). The researcher's investigation did not encompass educational institutions due to the prohibitive expenses associated with the device and accompanying discs. The educational media potential was explored for the first time by teachers and students in the United Kingdom through the interactive video disc effort known as the Domes Day initiative (Al-Dosari, 2019). The effort in question is a comprehensive and nationwide endeavor that gathers data on schools and communities through various methods. The utilization of interactive CDs was documented, and subsequently, the interactive video program in schools was

implemented from October 1985 to March 1987. This initiative involved the creation of eight educational packages covering diverse subjects, along with six projects tailored for primary and secondary schools. Additionally, two projects were designed to provide in-service training for teachers (Almuqati, 2021).

According to Al-Snaid and Altawalbeh (2020), interactive video can be defined as a multimedia system that presents video clips and enables bidirectional interaction through audio and visual media, allowing for its utilization across many locations. According to Hassan (2023), a multimedia system encompasses many components such as video, computer, and a device for connecting the video to the computer, along with a display screen. This system is recognized as a tool for individualized, self-directed, or autonomous learning. According to Hassan and Obeidat (2022), the concept under discussion is considered an innovation in contemporary society. Its primary purpose is to deliver audio-visual information based on the replies of students. The device exhibits auditory and visual content by way of a display screen, which serves as a component of an integrated system comprising a computer, an input mechanism, and storage capabilities. The utilization of interactive video entails the presentation of information through the integration of video clips and still frames, accompanied by textual elements, graphics, and auditory components.

Interactive educational videos have several qualities that contribute to its effectiveness as a teaching tool. Utilizing this approach aids in the long-term retention of information and not alone in enhancing the learner's performance. Moreover, it is widely regarded as a crucial instrument for personal knowledge acquisition (Al-Mutairi, 2022). Interactive video offers a personalized educational setting that incorporates educational videos and computer technology as supplementary tools in the learning process. Interactive video is a system that offers educational lessons to students following their completion of video recordings. In addition to the visual and auditory components, viewers have the ability to provide responsive actions that can influence the pace and order of the educational content. This is made possible through the interactive feature of the computer-based interactive video (Anderson & Davidson, 2019). The interactive video possesses

the capability to effectively articulate the learner's viewpoints and communicate their diverse expressions or reactions, a feature that is absent in traditional video devices. This interconnection between these two technologies is regarded as a strength that facilitates the creation of a dynamic educational setting for learners. Consequently, it can be asserted that interactive video serves as a potent and pragmatic approach for individualized, self-directed learning (Nur Laila & Fitra Raharja, 2021).

Numerous scholars in the domains of education and the pedagogical process have displayed a keen interest in discerning the effects of employing interactive video on scholastic attainment and the acquisition of educational competencies and experiences (Palaigeorgiou et al., 2019). Interactive educational video possesses a technological attribute that enables learners to sequentially view the video content and subsequently pose questions utilizing computer-based platforms. The computer system receives and records the responses of the student, and then engages in the process of categorizing them. It then proceeds to offer immediate feedback and reinforcement, all the while preserving the original responses of the learner (Sozeri & Kert, 2021). The interactive video is distinguished by its capacity for students to engage in repetition, modification, and review of the offered material as necessary, hence facilitating personalized learning based on individual capacities (Afify, 2020). Additionally, this approach facilitates closer teacher-student collaboration and minimizes the need for repetitive explanations. Furthermore, it captivates the student's focus and stimulates their interest, as they engage with the keyboard, touch the screen, or interact with other components of the system (Altinpulluk et al., 2019). These interactive elements serve to arouse and engage the learner, fostering a pleasurable approach to the scientific content. The interactive instructional video serves to enhance the diversity of educational lessons within a given subject, encompassing remedial, strengthening, and skill acquisition courses. Additionally, it is beneficial to consider the unique characteristics and abilities of each student, allowing them to learn at their own pace (Ariffin & Ismail, 2018).

The description of the levels of interactive video is based on the extent of control and engagement that exists between the

learner and the program. The levels under consideration are denoted by the zero level, which corresponds to the linear video. Linear video can be understood as a cohesive unit of information that is provided for viewing in a sequential manner, starting from the beginning and concluding at the conclusion (Bétrancourt & Benetos, 2018). The initial level is contingent upon the regulation of picture and scene cessation by means of keyboard manipulation. The determination of the second level is contingent upon the magnitude and capability of the computer's memory, while the manipulation of the video display is facilitated by the use of the keyboard and computer programs. Interactive programs that control (Diquito et al., 2023). The system incorporates an external computer program, with the video disc player serving as a peripheral device connected to the computer. The fourth level of interaction offers the student the maximum degree of engagement in comparison to the preceding four levels. At this stage, the individual utilizes input devices such as the keyboard, mouse, or light pen to manipulate and navigate the interactive video display (Hung et al., 2018).

One of the essential components for the successful implementation of interactive videos is the presence of written text containing unambiguous vocabulary. Additionally, visual elements such as animation and static images play a crucial role in elucidating concepts (D'Aquila et al., 2019). Furthermore, the incorporation of sound effects in interactive videos enhances the emotional impact experienced by viewers. The perception of written texts on screens as monotonous has led to the incorporation of animation as a means to enhance the emotional resonance of depicted events (Palaigeorgiou & Papadopoulou, 2018). Animated imagery serves the purpose of effectively showcasing dynamic actions and skills. The interactive educational video employs many methods to facilitate its display, one of which is the utilization of a silent scene wherein the visual component is activated while the auditory component remains muted (Razis et al., 2018). This approach involves employing inference and prediction abilities to concentrate on the intended message. One of the methods of display involves activating the audio while deactivating the visual component. This approach necessitates the learner to engage in a process of conjecture (Shahrokni, 2018). The

setting, characters, or event can be conveyed by auditory cues, visual representations, and various display systems. The act of temporarily halting or immobilizing the frame. This process involves the utilization of auditory stimuli followed by a deliberate cessation at a predetermined juncture within the given occurrence or circumstance (Wachtler et al., 2018). Subsequently, the instructor proceeds to interrogate the student, seeking their understanding of the transpired events as well as their predictions regarding future developments. The display mechanisms allow for the simultaneous presentation of auditory and visual elements. This feature provides learners with a preview of the shapes they will encounter, enabling them to actively search for them during the learning experience (Gedera & Zalipour, 2018). Additionally, learners are provided with a series of shapes to determine whether they are present within the scenes. Furthermore, learners are presented with comprehension questions both prior to and following the viewing, enhancing their understanding and retention of the material (Pramerta, 2018). The learners respond to these questions, and one of the instances of display methods is the utilization of mixed sequences. In this approach, the learner observes the scene in an unarranged manner, independently, and is required to determine the events that occurred or will occur (Musa & Isa, 2022). Subsequently, he organizes and appropriately positions the objects, culminating in an audience of several learners being able to observe the proceedings (Ibrahim & Abu Hamid, 2017). In the absence of auditory cues, a distinct subset of individuals possesses the ability to perceive auditory stimuli without visual input, afterward engaging in various cognitive tasks to bridge the informational deficit (Tuma, 2021).

Previous Studies

The main aim of the study conducted by Al-Dosari (2019) was to determine the influence of interactive video-based training on the academic performance of first-year secondary school students in the introductory computing course. To achieve the research purpose, a quasi-experimental design was utilized to investigate a sample of first-year secondary pupils in the Wadi Al-Dawasir Governorate inside the Kingdom of Saudi Arabia. The study's sample comprised a total of 48 pupils. The participants were allocated into two unique cohorts: the

experimental group, which interacted with an interactive video for the purpose of studying, and the control group, which employed a written video for their studying activities. The examination was utilized as a method of investigation, and the results revealed that there were no statistically significant differences between the two cohorts in relation to their capacity for recall. Significant statistical differences were noted in the areas of comprehension and application.

The study conducted by Al-Snaid (2020) investigated the effectiveness of an interactive instructional film in improving academic performance in geography for sixth-grade students enrolled in schools located in Madaba Governorate. In order to achieve the objective of the study, a quasi-experimental methodology was utilized and the sample was intentionally chosen. The research sample consisted of 60 students who were registered in the sixth grade at Ibntaimia School in Madaba Governate during the second semester of the academic year 2019/2020. The study sample was partitioned into two distinct groups: the experimental group, which consisted of 30 students who received instruction in the subject of geography through the utilization of an interactive video, and the control group, which comprised 30 students who were taught the same subject of geography using a conventional instructional approach. A solitary tool, namely an achievement test, was administered both prior to and subsequent to the implementation of the intervention. The results revealed that there were statistically significant differences at a significance level of $\alpha \leq 0.05$ between the two groups, with the experimental group exhibiting better outcomes in the post-test. The primary focus of this investigation was the application of interactive video as an instructional resource. The research findings provided evidence for the effectiveness of incorporating interactive films as a strategy to improve academic performance in the discipline of geography.

Al-Sqria and Al-Salmi (2020) assessed the efficacy of utilizing an interactive learning website in enhancing academic achievement and promoting visual thinking abilities among eleventh-grade students studying the subject of Islamic education in Oman. The study sample comprised 62 female students, who were separated into two groups: the experimental group, consisting of 30 students, and the control

group, consisting of 32 students. The investigators employed a quasi-experimental methodology. To accomplish the objective of the study, a 20-question accomplishment exam was developed. The study employed the visual thinking skills exam, which consisted of a total of 23 questions assessing five distinct skills. The study findings indicated the presence of statistically significant disparities, with a significance level of 0.05, between the average scores of students in the experimental and control groups on both the achievement test and the visual thinking test. These differences favored the experimental group, which received instruction through the interactive learning website.

The study conducted by Almuqati (2021) was to evaluate the influence and efficacy of an interactive instructional approach on the academic performance of students in the cognitive domain, with a particular focus on the domains of recall, comprehension, and application as outlined in Bloom's taxonomy. The research was centered on students enrolled in the fourth level of the educational evaluation course provided by the Faculty of Education at Shaqra University. The pedagogical approach of interactive teaching was employed during lecture sessions, and its impacts were assessed and analyzed. The research sample consisted of 30 students who were randomly allocated into two groups of equal size. The experimental group comprised 15 pupils, whereas the control group also comprised 15 individuals. To achieve the study's purpose, the researcher utilized an experimental (semi) approach. The experimental group was provided with instruction using an interactive teaching method that placed emphasis on engaging learners in both lesson preparation and presentation during lectures. On the other hand, the control group was provided with education via the conventional lecture approach. The research employed a rigorous assessment tool in order to collect data. After conducting an analysis of the gathered data, it has been concluded that the research hypotheses were not substantiated. No statistically significant differences were identified in measuring the impact and efficacy of an interactive teaching technique that focuses on the learner's activity in planning and presenting lessons to pupils, at a significance level of 0.01. The lecture presented findings that demonstrated a notable disparity in the mean levels of achievement between the experimental group and the

control group with regards to the recall, knowledge, and application of the (Bloom) categorization. The experimental group demonstrated superior performance compared to the control group in various domains, as well as in the total achievement test score.

Methodology

The research utilized an experimental methodology, which entails examining a current occurrence by changing one or more variables (known as the independent variable) and evaluating the resulting impacts of this variable on the dependent variable. The researcher employed an interactive instructional video program in combination with a conventional approach to assess its effect on the study population. The research involved the classification of participants into two distinct groups: an experimental group that received training through the implementation of an interactive instructional video program, and a control group that received education using a conventional technique.

Population and Sample

The study sample comprises 535 twelfth-grade students residing in Abha Governorate, who have been later categorized into 70 divisions. A deliberate decision was made to incorporate a sample comprising of students in the twelfth grade from Abha Secondary School for Boys. The sample was chosen in a random manner. The research employed a sample of two classrooms, with one classroom assigned as the experimental group consisting of 32 students, and the other classroom designated as the control group, also including 32 students.

Research Instrument

The objectives of the study were accomplished by employing two distinct research instruments.

1. Teaching plan according to an interactive educational video program: The experimental study encompassed a distinct domain of inquiry, specifically focusing on the academic accomplishments of students in the twelfth grade. This study was designed to be conducted in the forthcoming academic year of 2022/2023. The collection of 35 initial behavioral objectives was created by the researcher after

careful consideration of the overarching purposes and subject matter pertaining to the topics under investigation in the experiment. The framework comprises various components, namely remembering, understanding, applying, analyzing, synthesizing, and evaluating. In order to guarantee the precision and comprehensiveness of the information, it underwent assessment by a panel comprised of professionals and specialists. In response to the feedback received, specific objectives were modified, while ensuring that the total number of objectives remained at 35. The study groups have prepared instructional plans utilizing an interactive educational video package for the experimental group, while employing a conventional method for the control group. The panel of specialists in the field of instructional techniques were presented with several instances of these examples. The purpose of this action was to assess their suitability in relation to the topic at hand and the established behavioral goals. Following the criticism offered by the experts, specific paragraphs were further altered, leading to their final rendition. The total number of instructional plans for both groups was 20, with half of the plans (10) utilizing an interactive educational video program, while the other half used a conventional approach.

2. Designing an academic achievement test: The study was devised to assess the degree to which the academic achievement of twelfth-grade students was enhanced by the materials used in the experiment. The item of the exam was meticulously designed to ensure its precise reflection of its intended purpose and adherence to the procedural description of academic achievement as outlined in current research. The test's vocabulary was constructed according to the interactive educational video program, specifically the multiple-choice format. The selection of words was based on the desired level of academic achievement for twelfth-grade students. Each question consists of an introductory statement followed by four alternative options, requiring students to choose the correct one. The test comprises a total of twenty-five items. The determination of the average exam time was contingent upon the collective performance of the pupils.

Instrument Validity and Reliability

Two distinct approaches were employed to ascertain the reliability of the instrument:

1. The process of evaluating the validity of the scale instrument involves administering the instrument to a panel consisting of ten arbitrators and establishing a minimum acceptance rate requirement of 80%.
2. A cohort of 12 individuals received an assessment to ascertain the extent to which it exhibits discriminant validity. The statistical significance of the coefficients' discriminant validity was established using the observed (F) values, specifically 4.70.

The Cronbach's alpha formula was utilized to calculate the internal consistency of the instrument. The instrument had a high level of reliability, as evidenced by a coefficient of 0.853.

Data Analysis

After the conclusion of the data collection period, the mean test scores and standard deviations for both the pre-test and post-test were calculated. The Eta square was utilized to calculate the effect size, serving as a measure of the degree to which the interactive educational video program contributes to the improvement of academic performance. The statistical methods of Wilcoxon's test and Z-value were utilized to improve comprehension of the differences between two similar samples.

Results and Discussion

Table 1 demonstrates that the academic achievement of both the experimental and control groups was comparable prior to the implementation of the interactive educational video program.

Table 1: Pre-Measurement

Variable	Group	N	M/R	S/R	U	Z	P
Academic achievement	Experimental	32	24.40	780.80	365.00	0.850	0.180
	Control	32	25.30	809.60			

Based on the data provided in Table 1, there was no statistically significant disparity identified between the two groups in

relation to the mean scores of students' academic performance prior to the deployment of the interactive educational video program.

In order to address the first question, which investigates potential disparities in the outcomes of the academic achievement assessment between the experimental and control groups subsequent to the implementation of the interactive educational video program. The aforementioned table illustrates the attained outcomes.

Table 2: Post-Measurement

Variable	Group	N	M/R	S/R	U	Z	P
Academic achievement	Experimental	32	30.30	969.60	36.00	10.120	0.000
	Control	32	24.40	780.80			

The outcomes derived from the post-measurement conducted on the experimental group are presented in Table 2. The results suggest that there were statistically significant disparities in the average scores of both the control and experimental groups with regards to evaluations of academic achievement. This implies that the students in the experimental group have outstanding academic performance.

This outcome can be ascribed to various factors, with one of the most significant being the efficacy of interactive educational videos in fostering student motivation and yielding positive outcomes. The engaging and enjoyable nature of interactive educational videos contributes to students' enthusiasm and eagerness to learn. Additionally, the learner employs many senses to facilitate the learning process, hence enhancing ease of comprehension. By engaging in the process of memorization, the student gains the capacity to pose inquiries, so facilitating self-assessment and enabling the comprehension of educational content across various temporal contexts. Consequently, this engenders heightened interest through the incorporation of auditory, visual, and kinesthetic stimuli.

This finding aligns with the findings of prior research conducted by Al-Dosari (2019), Al-Snaid (2020), Al-Sqria and Al-Salmi (2020), and Almuqati (2021) in relation to the superior performance of students in the experimental group who were instructed using the interactive educational video program,

compared to students in the control group who were taught using the conventional approach for acquiring various skills. This finding provides evidence supporting the appropriateness of utilizing the interactive educational video program for the acquisition of academic achievement.

To address the second inquiry, "Are there significant differences in the academic achievement of the experimental group pre- and post-implementation of an interactive educational video program?". The results are displayed in the following table.

Table 3: Pre and Post-Measurement

Variable	Pr/Po	N	M/R	S/R	Z	P
Academic achievement	negative	6	10.50	63.00	42.210	0.000
	rank	26	18.10	470.60		
	positive rank	0				
	ties	32				
	total					

The results displayed in Table 3 illustrate a statistically significant disparity in the mean scores of the experimental groups with regard to several aspects of academic achievement. This suggests that following the evaluation, students who were part of the experimental group showed improvements in their academic achievement.

The observed outcome can be ascribed to the utilization of interactive instructional videos, which offer students the opportunity to engage in repetition, modification, and review in accordance with their individual preferences and requirements. This facilitates learning in accordance with their unique aptitudes and pace. Additionally, this approach facilitates tighter teacher-student collaboration and mitigates the necessity for repetitive explanations. Furthermore, it captures the learner's attention and evokes a sense of excitement. Educators also hold the belief that interactive educational videos facilitate students' comprehension of complex concepts, foster student engagement in discussions, and are distinguished by their expeditious information retrieval capabilities. This finding is consistent with the results of previous studies conducted by Al-Dosari (2019), Al-Snaid

(2020), Al-Sqria and Al-Salmi (2020), and Almuqati (2021), which also demonstrated the superior performance of students in the experimental group who received instruction through an interactive educational video program. In contrast, students in the control group, who were taught using a conventional approach, exhibited lower proficiency in acquiring diverse skills. This discovery offers empirical support for the suitability of employing interactive educational video programs as a means to enhance student achievement.

In order to provide an answer, it is necessary to address the final question, "Is there a statistically significant difference detected between the scores obtained from post-test and follow-up tests when assessing academic achievement?" The findings are presented in the subsequent table.

Table 4: Post and Follow-up

Variable	Po/ Foll	N	M/R	S/R	Z	P
Academic achievement	negative	14	10.50	147.00	11.300	0.195
	rank	7	8.60	60.2		
	positive rank	11				
	ties	32				
	total					

The examination of the data presented in Table 4 indicates that there are no statistically significant differences in the mean scores of the experimental group between the post-test and follow-up evaluations. The findings of this study indicate that the efficacy of the program remained consistent during the post-intervention period, without any observable signs of regression upon its completion.

The significance of interactive video lies in its role as a crucial technology within the realm of education. It serves as a novel model that facilitates the transformation of traditional educational practices within academic institutions. Moreover, interactive video plays a pivotal role in ensuring the continuity of education and training, particularly in the development of professionals across various educational domains. Interactive video programs are distinguished by their capacity and efficiency in delivering tailored training to individual students based on their abilities, requirements, interests, and academic proficiency.

Conclusion

This research study presents empirical evidence to substantiate the proposition that the integration of an interactive instructional video program in secondary schools located in the Abha Governorate has a significant impact on the improvement of students' academic performance. The integration of an interactive educational video program inside the educational environment has the potential to augment students' capacity to attain their learning goals and foster their academic performance. The findings of this study suggest that students who participate in an interactive instructional video program demonstrate increased levels of academic performance. It may be deduced that the utilization of an interactive instructional video program, designed to enhance student motivation, has demonstrated a favorable influence, leading to advantageous consequences. The engaging and enjoyable attributes of interactive educational movies serve to heighten students' enthusiasm and drive in their pursuit of knowledge acquisition. Moreover, the individual engages many sensory modalities in order to facilitate the acquisition of knowledge, hence enhancing the comprehension process. By engaging in the cognitive process of remembering, students develop the capacity to formulate critical inquiries, so fostering self-assessment and enhancing comprehension of instructional content across varying temporal contexts. Consequently, this gives rise to a heightened inclination towards the incorporation of auditory, visual, and tactile stimuli.

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