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RESEARCH ARTICLE **EDUCATIONAL TECHNOLOGY**

Study of Students Attitudes Towards Multimedia Tools: Case of Faculty Science in Tobruk University-Libya

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ABSTRACT

In today's world, incorporating multimedia into teaching allows students to engage with new challenges, phenomena, and learning settings. Different types of images and videos, coupled with specific teaching methods, can affect students' understanding and performance across various media. Learners may also develop practical skills that aid their ongoing education. This research seeks to explore students' attitudes toward multimedia use in higher education. A sample of 257 students from the Faculty of Science at Tobruk University was utilized for the study, and the data was analyzed using IBM SPSS Statistics version 21. The findings from the empirical portion of the research revealed that a significant majority of students strongly agreed with statements reflecting their positive views on the integration of multimedia in the educational environment.

دراسة اتجاهات الطلبة نحو أدوات الوسائط المتعددة: دراسة حالة كلية العلوم بجامعة طبرق/ليبيا

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الكلمات المفتاحية

ادوات الوسائط المتعددة
أس بي اس اس
اتجاهات الطلبة
التعليم العالي

الملخص

في عالم اليوم، يسمح دمج الوسائط المتعددة في التدريس للطلاب بالانخراط في تحديات وظواهر وإعدادات تعليمية جديدة .يمكن أن تؤثر أنواع مختلفة من الصور ومقاطع الفيديو، إلى جانب طرق التدريس المحددة، على فهم الطلاب وأدائهم عبر وسائل الإعلام المختلفة .قد يطور المتعلمون أيضًا مهارات عملية تساعد في تعليمهم المستمر .يسعى هذا البحث إلى استكشاف مواقف الطلاب تجاه استخدام الوسائط المتعددة في التعليم العالي .تم استخدام عينة من 257 طالبًا من كلية العلوم بجامعة طبرق للدراسة، وتم تحليل البيانات باستخدام IBM SPSS Statistics الإصدار 21. كشفت النتائج من الجزء التجريبي من البحث أن غالبية كبيرة من الطلاب وافقوا بشدة على البيانات التي تعكس وجهات نظرهم الإيجابية بشأن دمج الوسائط المتعددة في البيئة التعليمية.

Introduction

Technology integration is essential in the ever changing sector of education to meet the demands of students in the digital age. In order to enhance the teaching and learning process, a multimedia- refers to an educational approach that incorporates various forms of multimedia components, such as text, visual imagery, audio, video, and interactive elements. Through the use of technological innovations, it actively engages students through a variety of sensory modalities and distributes educational materials, encouraging participatory learning and improving information retention. Multimedia technology has revolutionized teaching and learning processes, leading to new educational needs and teaching strategies. Examples of this technology include mobile phones, laptops, interactive whiteboards, tablets, liquid-crystal display (LCD) projectors, and video conferencing [1]. According to Abdulrahaman et al. [2], multimedia study materials that include still and animated graphics, video, and audio presented in an organized way have been shown to be more effective tools for learning new information than standard textbooks. Additionally, it has been shown that using multimedia effectively supports learning and improves understanding [3]. Dupchu, investigated multimedia integration in bhutanese chemistry education. Where the academic achievement of 62 eleventh-grade students was analyzed. The data were acquired through surveys and achievement exams. There were no significant differences between the groups during the pre-test. the post-test results showed that the experimental group improved significantly. And multimedia integration resulted in improved mean scores and learner satisfaction. The findings imply that multimedia improves academic performance over traditional techniques [4]. Krause et al. examines the manner in which students perceived the incorporation of multimedia by their educators and peers within online announcements and discussions. Furthermore, it sought to ascertain the likelihood of these students employing multimedia for analogous communications in their own practices. The findings revealed that students predominantly express a favorable disposition towards the multimedia communications implemented by their instructors. Nevertheless, in spite of this favorable disposition, they

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frequently exhibit reluctance to engage these technologies within their own communicative efforts [5].

despite significant progress in this field, effect of the use multimedia tools on students' academic performance has not yet been comprehensively inn university learning addressed. Previous studies indicate that multimedia effect has been limitedly analyzed by many researchers. The paper will be broken up into three sections. The first section merely provides a review of the literature that covers the research on the theory and model of multimedia tools that can be explained and predict an acceptance of using the multimedia. the second section serves as the foundation for the rest of the study and includes a description of the research methods, hypotheses, and instrument measurement reliability. the third section will be specifically focused on the study's findings, which will help to place the research in a larger context, while the final section will draw conclusions and recommendations.

Demographical Statistics

The present study used the stratified sample technique, which includes department, number, and percentage as shown in Table 1.

Table 1: Sample details

Department	Number	Percentage
Computer science	36	14%
Physics	18	7%
Chemistry	52	20%
Zoology	78	30%
Mathematics	21	8%
Geology	52	20%
Total	257	100%

Descriptive analysis

Descriptive statistics showed that 68% of participants were female and 32% of participants were male, 250 of the sample size, representing 97%, are between 19 and 23 years old. (Table 2).

- What are the justifications for your decision to refrain from utilizing multimedia?

Table 2: Demographics of respondents

Measuremer	Item	Frequency	Percentage
Gender	Male	83	32%
	Female	174	68%
Age	19-23	250	97%
	24-28	5	2%
	29-33	0	0%
	33-	2	1%
	First year	0	0%
Academic	Second year	103	40%
Year	Third year	96	37%
	Fourth year	58	23%
Place OF	In-Town	247	96%
Residence	Outside the town	10	4%

It is clear from the Table 3 above that 30 of the sample size do not use multimedia, 50% of which is due to the financial cost, 17% of which is due to the fact that 15 individuals are not convinced of its importance, and others do not have a Smartphone or a computer.

- Table 4 answers the question; what extent are you capable of utilizing multimedia independently?

Table 3: Justifications for your decision

Item	Frequency	Percentage
I am not convinced of its significance	5	17%
Convinced but don't know how to use it	3	10%
I don't have a computer.	4	13%
I don't have a Smartphone.	3	10%
Financial cost	15	50%
Other reasons	0	0%
Total	30	100%

Table 4: The capable of utilizing multimedia independently

Item	Frequency	Percentage
None	0	0%
Weak	19	7%
Medium	90	35%
Good	76	30%
Excellent	72	28%
Other	0	0%
Total	257	100

It is obvious from above that 90 out of the sample size, 35% of them have an average capacity to utilize multimedia, 28% 72 individuals, have an excellent skill, and 30% 76 individuals, have a good ability.

- Table 5 answers the question; to what extent do you interact with different types of multimedia?

Table 5: Interact with different types of multimedia

Item	Frequency	Percentage
Always	104	40%
Sometimes	117	46%
Rarely	36	14%
Total	257	100%

It is clear from the above that 117 of the sample size, representing 46% of the sample, use the media sometimes, 40%, representing 104 individuals, use it all the time, and 14%, representing 36 individuals, rarely use multimedia.

- Table 6 answers the question; what is the duration of use of new media?

Table 6: Duration of use of new media

Item	Frequency	Percentage
Less than one year	57	22%
From 1 to 3 years	42	16%
More than 3 years	158	62%
Total	257	100%

It is clear from the above that 158 of the sample size, representing 62%, have been using multimedia for more than 3 years, 23%, representing 57 individuals, have been using multimedia for less than a year, and 16%, representing 42 individuals, have been using media for a period of one year to less than 3 years.

- Table 7 answers the question; how much time do you spend using multimedia?

Table 7: Time spends using multimedia

Item	Frequency	Percentage
Less than an hour	66	26%
From 1 to 3 hours	91	35%
More than 3 hours	100	39%
Total	257	100%

It is clear from the above that 100 out of the sample size, 39%, use multimedia for more than 3 hours per day, 35%, 91 individuals, use multimedia for 1 to 3 hours per day, and 26%, 66 individuals, and use multimedia for less than 1 hour per day.

- Table 8 answers the question; where are multimedia used?

Table 8: Place multimedia used

Item	Frequency	Percentage
Home	191	74%
University Library	10	4%
Intranet Café	5	2%
University Residence	2	1%
Other Places	49	19%
Total	257	100%

It is clear from the above that 191 of the sample size, representing 74%, prefer to use multimedia at home, and 19%, representing 49 individuals, prefer to use multimedia in other places.

- Table 9 answers the question; what are the most important multimedia tools you use to obtain information in your studies?

Table 9: Important multimedia tools you use

Item	Frequency	Percentage
Smartphone	196	76%
Computer	32	12%
Tablet	28	11%
Other media	1	1%
Total	257	100%

It is clear from the Table 9 above that 196 of the sample size, representing 76%, prefer to use a Smartphone in multimedia to obtain information, 12%, representing 32 individuals, prefer to use a computer, and 11%, representing 28 individuals, prefer to use a tablet.

- Table 10 answers the question; with whom do you utilize multimedia?

Table 10: With whom utilize multimedia

Item	Frequency	Percentage
Alone	203	79%
With friends	11	4%
43With family	43	17%
Total	257	100%

It is clear from the above that 203 individuals of the sample size, representing 77%, prefer to use multimedia alone, 17%, representing 43 individuals, prefer to use multimedia with family members, and 4%, representing 11 individuals, prefer to use it with friends.

- Table 11 answers the question; How do you feel psychologically while using multimedia?

Table 11: Psychologically while using multimedia

Item	Frequency	Percentage
Enjoyment	176	68%
Anxiety	40	16%
psychological comfort	41	16%
Total	257	100%

It is clear from the above that 176 out of the sample size, 68%, feel that the psychological feeling while using multimedia is enjoyable, and 16%, 40 individuals, feel anxious due to frightening scenes.

- Table 12 answers the question; what are the most important types of multimedia that you use?

Table 12: Types of multimedia that you use

Item	Frequency	Percentage
Facebook	98	38%
YouTube	92	36%
Google	60	23%
Other	22	9%
Total	272	100%

It is clear from the above that 98% of the sample size, or 38%, prefer to use Facebook, 36%, or 92 individuals, prefer to use YouTube, and 23%, or 60 individuals, prefer to use Google. There are also a number of sample individuals who use more than one type, such as Facebook, YouTube, and Google together. Also, 9% of the sample individuals, or 22 individuals, use Telegram and WhatsApp.

- Table 13 answers the question; what underlying intellectual and research-driven inspirations do you aspire to fulfill through your engagement with these platforms?

Table 13: Types of multimedia that you use

Item	Frequency	Percentage
Follow the news	63	25%
Study different cultures	58	23%
Educate and raise awareness	59	23%
Help conduct research	26	10%
Enrich scientific knowledge	20	8%
Exchange information	29	11%
Other motives	2	1%
Total	257	100%

It is clear from the above shows that 63 of the sample, representing 25%, use multimedia to follow news, both local and international. 23% of the sample use multimedia to learn about new cultures, raise awareness and increase knowledge. 26 of the sample, representing 10%, use multimedia to conduct scientific research at the university level and enrich scientific research.

- Table 14 answers the question; what are the emotional motivations used in multimedia?

Table 14: Types of multimedia that you use

Item	Frequency	Percentage
Entertainment	132	51%
Spending free time	78	30%
Getting rid of routine	47	19%
Total	257	100%

It is clear from the above that 132 individuals, representing 51% of the sample, say that their emotional motivation for using new media is entertainment and amusement, while 30% of the sample, representing 78 individuals, say that their emotional motivation is to spend free time, and 47 individuals, representing 19% of the sample, say that their emotional motivation for using new media is to get rid of routine.

- Table 15 answers the question; what are the communicative motivations for using multimedia?

Table 15: The communicative motivations for using multimedia

Item	Frequency	Percentage
Making new friends	36	14%
Connecting with family and friends	197	77%
Total	257	100%

It is clear from the above that 197 of the sample size, 77%, have a communicative motive for using multimedia to communicate with family and friends. Also, 14% of the sample size, 36 individuals, have a communicative motive for gaining new friends. Some of the sample members also have a communicative motive for gaining new friends and communicating with family and friends together.

- Table 16 answers the question; what are the positive effects of your use of new media on your academic achievement?

Table 16: Positive effects of your use of new media

Item	Frequency	Percentage
Providing opportunities to see scientific experiences	90	35%
Develop creative education	31	12%
Communicate with colleagues	24	9%
Communicate with professors outside of working hours	11	4
Conducting scientific research	52	20
Increase knowledge	29	11%
Download scientific topics	16	6%
Follow the developments of scientific research	14	5%
Other effects I mention……	6	2%
Total	273	100%

It is clear from the above that the number of 90 of the sample size is 34%.New media use in providing access to scientific experiences, and 20 % of The size of the sample is 52 singles, the positive impact on the completion of scientific research, and the 11 % of The size of the sample is 29 singles, the positive effect is due to the increase in the cognitive balance.

- Table 17 answers the question; what are the negative effects of your use of multimedia on your academic achievement?

The Table 17 shows that 117 of the sample size, representing 46%, have negative effects of using multimedia in wasting time. Also, 24% of the sample size, representing 62 individuals, have negative effects of using multimedia in neglecting study materials and assignments. Also, 10% of the sample size, representing 26 individuals, have negative effects in weakening the ability to memorize.

Table 17: Negative effects of your use of multimedia

Item	Frequency	Percentage
Neglecting academic subjects and assignments	62	%24
Poor ability to remember	26	%10
Absence of the Arabic language	11	4%
Poor usage skills	8	3%
Wasting time	117	46%
Low level of reading and writing	4	2%
Low level of educational attainmen	11	4%
Low Sleeping during class	9	4%
Use it to cheat during exams	5	2%
Other effects I mention.....	4	2%
Total	257	100 %

- Table 18 answers the question; what is your evaluation of the use of these media in obtaining information?

Table 18: Valuation of the use multimedia

Item	Frequency	Percentage
very good	149	58%
Good	67	**26%**
middle	38	**15%**
Weak	3	2%
the total	257	**%100**

It is clear from the above that 149 out of the sample size, representing 58%, rate their multimedia use as “very good”, 26% out of the sample size, representing 67 individuals, rate their multimedia use as “good”, and 15% out of the sample size, representing 38 individuals, rate their multimedia use as “average”.

- Table 19 answers the question; what are the deficiencies in the multimedia used?

Table 19: Deficiencies in the multimedia used

Item	Frequency	Percentage(%)
Lack of supervis	93	36%
Lack of quality	69	27%
Lack of credibil	95	37%
Total	257	100%

It is clear from the above that 93 of the sample size, 36%, have shortcomings in the multimedia they use, such as “lack of control”. Also, 37% of the sample size, 96 individuals, have shortcomings in the multimedia they use, such as “lack of credibility”. Also, 27% of the sample size, 69 individuals, have shortcomings in the multimedia they use, such as “lack of quality”.

As shown in Table 20 correlation coefficient greater than 0.5 indicates a strong relationship, and a coefficient greater than 0.60 indicates a higher level of agreement among the opinions regarding multimedia. Pearson's correlation analysis is used to evaluate the validity of the relationship between the viewpoints of students enrolled in scientific disciplines regarding the use of multimedia by their peers.

Table 20: Correlation Of Adoption Factors

	Computer science	Physics	Chemistry	Zoology	mathematics	Geology
Computer science	1					
Physics	0.477	1				
Chemistry	0.785	0.779	1			
Zoology	0.742	0.625	0.575	1		
mathematics	0.548	0.668	0.643	0.562	1	
Geology	0.673	0.527	0.567	0.658	0.576	**1**

Conclusion

Previously, a study was conducted on the acceptance of e-learning among students of the Faculty of Science at Tobruk University [6]. Through the ability to use these media in a unique structure to develop students' skills and educational abilities, the current research aims to raise awareness among students in Tobruk University's Faculty of Science about the role that multimedia can play in developing the components and elements of the educational system. the efficacy of education within a digital context necessitates the establishment of precise standards and criteria. These standards are contingent upon a comprehensive understanding of the learners' requirements and the educational content, which is fundamental for the selection of the most suitable electronic educational medium.[7].In order to fit this technique with the nature of the research, the descriptive analytical approach was employed to accomplish the research objectives. A sample of 257 students from Tobruk university's faculty of science participated in the study.

A questionnaire was used as the measuring tool to help these students understand the value of multimedia instruction. The significance of using multimedia and current media in all of its forms became evident through the research's theoretical portion and a review of other studies. Even while there are still certain barriers to using contemporary technology media in the classroom, their existence including multimedia as part of the teaching and learning process, with its sophisticated apparatus, is undeniable and unavoidable. In contrast to traditional methods, these devices, with their advanced technologies, represent the presentation and presentation of topics in an appealing and engaging manner that relies on sound, image, movement, and lighting effects. This draws students' attention to the lesson and increases their positive participation in the educational process. The findings of the research's field section demonstrated that most students strongly agreed with statements expressing their favorable opinions of the use of multimedia in the classroom and disagreed with the idea that the curricula's design hinders their use.

Key findings from the research include:

1. Among the analyzed sample, 227 individuals, constituting 88%, engage with multimedia resources, while 247 individuals, representing 96%, also utilize multimedia. Notably, 4% of these individuals originate from areas external to the metropolitan region. This phenomenon may be attributable to the subpar quality of internet services prevalent in these outlying areas.
2. It is evident that 30% of the surveyed population refrains from utilizing multimedia resources, with 50% of 15 respondents ascribing this behavior to the associated financial burden, while 17% of 5 individuals express skepticism regarding its significance, and other participants lack access to a Smartphone or computer.
3. With regard to multimedia, 35% of the 90 participants in the sample had an average skill, 28% had an exceptional ability (72 items), and 30% had a good ability (76 items).
4. Of the 158 people in the sample, 62% have been using multimedia for more than five years, 22% (57 people) have been using multimedia for less than a year, and 16% (42 people) have been using media for one year to less than three years.
5. Of the 100 people in the sample, 39% use multimedia for more than three hours a day, 35% use it for one to three hours, and 26% use it for less than an hour.
6. A total of 196 individuals from the sample population, constituting 76%, express a preference for utilizing a smartphone as their primary means of information acquisition, while 12%, amounting to 32 individuals, indicate a preference for employing a computer in multimedia contexts to gather information, and 11%, comprising 28 individuals, demonstrate a preference for utilizing a tablet.
7. A significant majority, specifically 98% of the surveyed population (38%), exhibited a preference for utilizing Facebook, while 36% opted for YouTube, and 23% favored Google; additionally, a segment of the respondents engaged in the concurrent use of multiple platforms, including Facebook, YouTube, and Google. Furthermore, 9% of the surveyed 22 individuals indicated their use of Telegram and WhatsApp.
8. Of the sample, 63 people 25%, are motivated to use multimedia to keep up with local and global news 23% are motivated to learn about new cultures, increase their awareness, and gain more knowledge; and 26 people 10%, are motivated to use multimedia to conduct and enhance scientific research at the university level.

The results of study[8] were consistent with many of the findings of our study, as follows: with regard to the study the previous study concluded that the use of multimedia is effective in developing the spirit of exploration, creativity, and solution it also increases scientific and learning efficiency, attracts students' attention and makes them eager to study, and this is relatively similar with the findings of our study, it also increases scientific and learning efficiency, attracts students' attention and makes them eager to study, and this is relatively similar with the findings of our study, multimedia is an innovative and effective teaching and learning tool, because it helps students motivate their learning process

Based on these findings, the study recommends:

1. The need to promote multimedia in order to provide the most possible benefit in terms of students' skill and ability development.
2. Offering the information and technical support services needed to create multimedia and its applications to meet the intended learning objectives.
3. Interest in the development of multimedia programs across all academic disciplines within the university context.
4. It must be there is more scholarly interest in integrating

multimedia into different educational situations than only e-learning platforms.

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