International Journal of Education and Cognitive Sciences
Volume 4, Number 2, 46-52, July 2023
https://iase-ijeas.com
ISSN: 3041-8828

Investigating the Relationship between Technology and Educational AIDS in the teaching Process from the Point of view of Elementary School Teachers in Bojnord City

Lida Javidan[1*], Amirmohammad Raofnia[2]

1. *PhD, Department of Educational Management, Farhangian University, Bojnourd, Iran.*
2. *PhD student, Department of Computer (Software), College Teacher and University Lecturer, Iran.*

Keywords:
Technology, Teaching AIDS, Teaching, Teachers

In this research, the relationship between technology and educational aids in the teaching process has been investigated from the point of view of the teachers of girls' and boys' elementary schools in Bojnourd city. The purpose of this research is whether the use of technology and educational aids in the teaching process has an effect from the point of view of the teachers of girls' and boys' primary schools.
To answer this question, five sub-questions have been asked. The current research method from the perspective of data collection
(Research plan) was descriptive, and from the point of view of research, it was applied based on the target category. The statistical population is 898 teachers of girls' and boys' elementary schools in Bojnourd city, of which 510 are women and 388 are men. The statistical sample is 87 people, and a multi-stage or cluster method was used to obtain the sample size and was investigated. it placed . The data of this project was collected through a researcher-made questionnaire with 26 items and using a Likert scale. The validity of the research tool was confirmed by experts (experts and university professors) and its reliability was obtained through Cronbach's alpha coefficient of 0.92, which indicates an acceptable level. It was a research tool. To analyze the questionnaire from SPSS software and to analyze the data
One-sample t-test, independent t-test and Levin's test were used. The results show that the barriers to using technology and educational aids in the teaching process have a significant effect from the point of view of girls' and boys' primary school teachers, and gender, level of education, the role of teachers, administrators and the role of education and training can be very effective and in some cases different in the barriers to educational use and educational aids.

* **Corresponding Author Email: javidan.lida1@yahoo.com**

Introduction

Educational technology in our country is almost unknown, despite the efforts of education officials and some teachers who have taken steps in this direction. However, in terms of understanding educational technology and its use in our country's system, less has been done, and as a result, many teachers still consider educational technology to be just audiovisual aids or teaching aids (Athari Rad, 2010).

The world we live in is constantly changing. From one decade to the next, humans are faced with such wide material, spiritual, and ethical changes in the world that yesterday's changes can no longer meet today's needs. In addition, in this race for change, often brains lag behind organizational changes" (Ahadian, 2011). Education must create the ability to learn in learners so that they can potentially adapt themselves to the conditions resulting from the continuous changes in human knowledge (Hematzadeh, 2017). On the other hand, it must be accepted that the era of the teacher as the only absolute and sole authority in teaching and face-to-face education, traditional teaching methods, and reliance on pure theory in learning are not efficient enough to respond to the unlimited and unpredictable areas resulting from the diversity of human knowledge developments. In our era, students are exposed to unconscious learning tools outside the classroom, and educational technology and its continuous evolution are at the service of the community. The level of students' expectations of teachers' knowledge and awareness has increased significantly, and in addition to the teacher, the library alone cannot be the source of information about all sciences and arts and their educational needs (Amirshojaei, 2012).

Kivan Saeedi Zand (1999) in an article entitled "Issues and Problems of Teaching Educational Technology in Iran" has examined the concept of educational technology in Iran and criticized the teaching methods of educational technology in teacher training centers and universities. He states that the limited understanding of educational technology in Iran has not gone beyond translating some books and buying overhead and non-overhead projectors, which itself indicates an incorrect attitude towards the concept of educational technology. In the continuation of the article, while referring to the incorrect perception of educational issues by educational technology, he states that the major changes that have taken place in Iran in recent decades have only included the name of audiovisual aids or teaching aids in educational technology. The concept of education and educational technology in many teacher training centers and faculties of education is also the same. The student who is supposed to learn about the achievements of educational technology and how to use them during his studies, except for some of the reforms, definitions, and images of hardware and software, does not gain a different understanding of educational technology in his educational life and concludes that the way to use educational technology can help parents who are economically, socially, and concerned about their children's future to provide the best conditions for promoting their children's educational levels.

Educational technology in our country is almost unknown, despite the efforts of education officials and some teachers who have taken steps in this direction. However, in terms of understanding educational technology and its use in our country's system, less has been done, and as a result, many teachers still consider educational technology to be just audiovisual aids or teaching aids (Atahari Rad, 2010).

The world we live in is constantly changing. From one decade to the next, humans are faced with such wide material, spiritual, and ethical changes in the world that yesterday's changes can no longer meet today's needs. In addition, in this race for change, often brains lag behind organizational changes" (Ahadian, 2011). Education must create the ability to learn in learners so that they can potentially adapt themselves to the conditions resulting from the continuous changes in human knowledge (Hematzadeh, 2017). On the other hand, it must be accepted that the era of the teacher as the only absolute and sole authority in teaching and face-to-face education, traditional teaching methods, and reliance on pure theory in learning are not efficient enough to respond to the unlimited and unpredictable areas resulting from the diversity of human knowledge developments. In our era, students are exposed to unconscious learning tools outside the classroom, and educational technology and its continuous evolution are at the service of the community. The level of students' expectations of teachers' knowledge and awareness has increased significantly, and in addition to the teacher, the library alone cannot be the source of information about all sciences and arts and their educational needs (Amirshojaei, 2012).

Kivan Saeedi Zand (1999) in an article entitled "Issues and Problems of Teaching Educational Technology in Iran" has examined the concept of educational technology in Iran and criticized the teaching methods of educational technology in teacher training centers and universities. He states that the limited understanding of educational technology in Iran has not gone beyond translating some books and buying overhead and non-overhead projectors, which itself indicates an incorrect

attitude towards the concept of educational technology. In the continuation of the article, while referring to the incorrect perception of educational issues by educational technology, he states that the major changes that have taken place in Iran in recent decades have only included the name of audiovisual aids or teaching aids in educational technology. The concept of education and educational technology in many teacher training centers and faculties of education is also the same. The student who is supposed to learn about the achievements of educational technology and how to use them during his studies, except for some of the reforms, definitions, and images of hardware and software, does not gain a different understanding of educational technology in his educational life and concludes that the way to use educational technology can help parents who are economically, socially, and concerned about their children's future to provide the best conditions for promoting their children's educational levels.

Parviz Mashayekhi (2018) conducted a research thesis in collaboration with the General Directorate of Education in Mazandaran province on the inhibiting factors of using educational technology in the process of productivity and learning from the perspective of elementary school teachers. The following results were obtained:

- Lack of suitable physical facilities and educational equipment has led to their non-use.
- Many teachers are not familiar with the new concept of educational technology.
- Many teachers have not paid attention to the importance of technology.
- Many teachers have become accustomed to traditional teaching methods due to their simplicity.

In a study conducted by Jamshid Nazari (2011) titled "Investigating the reasons for teachers' lack of interest in using teaching aids" under the supervision of the Research Council of Education in Kermanshah province, the following results were obtained:

- The shortage of teaching aids and materials in proportion to the number of students and teachers has led to their non-use in teaching.
- Teachers generally believe in the effectiveness of teaching aids and materials, and the reason for not using them should be sought in other areas.
- Teachers lack material and financial incentives, as well as unsuitable housing conditions and a lack of balance between their income and living expenses, which affects their positive attitude towards using teaching aids.
- Insufficient educational management, supervision, and planning affects teachers' non-use of these aids, as the use of aids has been considered a prohibited act due to the lack of encouragement and reminders from educational authorities. Sufficient supervision and guidance are not provided, and this issue is mostly addressed through occasional inspections.
- Teachers' performance in using or not using teaching aids is not objectively and acceptably evaluated.
- Scientific research on the effectiveness of teaching aids has not been conducted, and teachers' interest in using these aids has not increased, and a suitable environment for their widespread and continuous use has not been created.
- The existence of unofficial organizations is a hindrance to the use of teaching aids. When using these aids, teachers feel separated from other colleagues and face negative reactions from them.
- Unfamiliarity with how to use teaching aids and the application of educational media has led many teachers to abandon the use of these aids.
- The voluminous content of some textbooks and the lack of necessary time for teaching them are related to the non-use of teaching aids.
- The organization of the content of some books does not require the use of these aids.

Technology can be a solution to educational problems and a way to address educational issues on all dimensions, including curriculum planning, evaluation system, teacher recruitment and training system, school organization, and educational management and planning. To activate students in the learning process, teachers need to renew their teaching methods (Pazouki, 2010). Based on this, the research objectives are explained as follows:

Main Objective

Investigating the use of technology and educational aids in the teaching process from the perspective of elementary school teachers in Shahrood

Sub-objectives:

1. Examining the gender of teachers and the reasons for using educational technology in the teaching process.
2. Investigating the level of education of teachers and the reasons for using educational technology in the teaching process.
3. Examining the role of teachers and the reasons for using educational technology in the teaching process.
4. Examining the role of managers and the reasons for using educational technology in the teaching process.
5. Examining the role of education and training and the reasons for using educational technology in the teaching process.

Research Questions:
Main question: Is the use of educational technology and aids effective in the teaching process?
Sub-questions:
1. Does the gender of teachers affect the use of educational technology in the teaching process?
2. Does the level of education of teachers affect the use of educational technology in the teaching process?
3. Does the role of teachers affect the use of educational technology in the teaching process?
4. Does the role of managers affect the use of educational technology in the teaching process?
5. Does the role of education and training affect the use of educational technology in the teaching process?

Given the importance of educational technology and preventing obstacles to its use, the question now is whether the obstacles to the use of technology and educational aids in the teaching process have an impact from the perspective of elementary school teachers in Shahrood or not?

Methodology

The present research method is descriptive and survey-based. The survey research method can be considered a scientific method in social research that includes regular and standard methods for collecting information about individuals, families, or larger groups in society. Also, the research method of background study is used in educational sciences to study the current conditions of education and to investigate educational needs. The statistical population is 898 elementary school teachers in Shahrood, including 510 women and 388 men.

Findings

The sample size is 87, with 21.5% male respondents and 78.5% female respondents. 10% of the respondents have a diploma, 47% have a higher diploma, 26% have a bachelor's degree, and 17% have a master's degree.
Hypothesis 1: Is there a difference in the use of educational technology in the teaching process between male and female teachers?

Table 1: frequency, mean, standard error and standard deviation of the groups regarding the first hypothesis

	Group	Frequency	Mean	SD	Standard error
Educational assistive technology	Male	35	50.3509	5.09761	0.70021
□	Female	52	48.2766	7.39771	1.07907

Table 2: The assumptions of independent t-test for the first hypothesis

		Levene's test for equality of variances		t-test for equality of means							
		F	Sig.	t	Critical t-value	df	sig.	Mean diff.	Std error diff.	95% Confidence interval of the difference	
										Lower	Upper
Gender	Equal variances assumed	4.818	0.031	1.648		85	0.10	2.07435	1.25887	0□42383	4.57253
	Equal variances not assumed	□	□	1.613	1.093	80.30	0.10	2.07435	1.28634	0□48541	4.63411

The value of sig related to the variances of the two groups (male and female) is 0.031 (less than the significant level of 0.05), indicating the inequality of the variances of the two groups. Therefore, the calculated t-value is 1.61, which is greater than the critical t-value of 1.093 with degrees of freedom of 80.30 and sig equal to 0.011 (less than the significant level of 0.05). As a result, the null hypothesis (the hypothesis of equality between the means of male and female groups) is rejected, and the research hypothesis is confirmed. Therefore, the use of educational technology in the teaching process is different for male and female teachers.

Hypothesis 2: Is the level of education of teachers and the use of educational technology in the teaching process effective?

Based on the significant level obtained from the one-sample t-test (less than 5%), the t-value is equal to 9.380, which is greater than the critical t-value. Therefore, the null hypothesis is rejected, and with 95% confidence, it can be said that hypothesis 5, the role of education can be effective in increasing the use of educational technology in the teaching process. It has a mutual relationship, meaning that the higher the mean of this index is above the average limit, the more the role of education in increasing the use of educational technology in the teaching process is also higher.

Table 3: frequency, mean, standard error and standard deviation of the groups regarding the second hypothesis

	Sum	Df	Mean	F	Sig.
Mean	863.867	2	287.956	8.883	.000
Value	3111.975	85	32.416		
Total	3975.842	87			

The results obtained from Table (3) show that the value of sig is equal to zero, and considering that this value is less than 0.05, the ratio of F-value is considered significant at 8.883. With the obtained value of p (9.231), it can be said that there is a statistically significant difference between the means. Therefore, the use of educational technology in the teaching process is different for teachers based on their level of education.

Hypothesis 3: Is the role of teachers and the use of educational technology in the teaching process effective?

Table 4: frequency, mean, standard error and standard deviation of the groups regarding the third hypothesis

Option	Frequency	Mean	SD	Standard mean error
Teachers' roles	87	15.3231	2.86742	0.35566

Table 5: The results of t-test for the third hypothesis

Option	Test value = 12						
	t-value	Critical t-value	df	Sig.	Mean	95% Confidence Interval of the Difference	
						Lower	Upper
Teachers' role	9.343	2	85	0.00	3.3231	2.6126	4.0336

Based on the significant level obtained from the one-sample t-test (less than 5%), the t-value is equal to 9.343, which is greater than the critical t-value. Therefore, the null hypothesis is rejected, and with 95% confidence, it can be said that hypothesis 3, the role of teachers can be effective in increasing the use of educational technology in the teaching process. It has a mutual relationship, meaning that the higher the mean of this index is above the average limit, the more the role of teachers in increasing the use of educational technology in the teaching process is also higher.

Hypothesis 4: Is the role of managers and the use of educational technology in the teaching process effective?

Table 6: frequency, mean, standard error and standard deviation of the groups regarding the fourth hypothesis

Option	Frequency	Mean	SD	Standard mean error
Teachers' role	87	14.8154	2.96802	0.36814

Table 7: The results of t-test for the fourth hypothesis

Option	Test value = 12						
	t	Critical t-value	df	Sig.	Mean	95% Confidence Interval of the difference	
						Lower	Upper
Teachers' role	7.648	2	85	□□□□0	2.8154	2.0799	3.5508

Based on the significant level obtained from the one-sample t-test (less than 5%), the t-value is equal to 7.648, which is greater than the critical t-value. Therefore, the null hypothesis is rejected, and with 95% confidence, it can be said that hypothesis 4, the role of managers can be effective in increasing the use of educational technology in the teaching process. It has a mutual relationship, meaning that the higher the mean of this index is above the average limit, the more the role of managers in increasing the use of educational technology in the teaching process is also higher.

Hypothesis 5: Is the role of education and the use of educational technology in the teaching process effective?

Table 8: frequency, mean, standard error and standard deviation of the groups regarding the fifth hypothesis

Option	Frequency	Mean	SD	Standard mean error
Education role	87	19.5846	3.94054	0.48876

Table 9: The results of t-test for the fifth hypothesis

Option	Test value = 15						
	t	Critical t-value	df	Sig.	Mean	95% Confidence Interval of the difference	
						Lower	Upper
Education role	9.380	2	85	□□□□0	4.5846	3.6082	5.5610

Based on the significant level obtained from the one-sample t-test (less than 5%), the t-value is equal to 9.380, which is greater than the critical t-value. Therefore, the null hypothesis is rejected, and with 95% confidence, it can be said that hypothesis 5, the role of education can be effective in increasing the use of educational technology in the teaching process. It has a mutual relationship, meaning that the higher the mean of this index is above the average limit, the more the role of education in increasing the use of educational technology in the teaching process is also higher.

Conclusion

Analysis regarding hypothesis one shows that the T-test of two variables, namely teachers' gender and the use of educational technology in the teaching process, is equal to 1.61. Considering the critical T-value and level (P=0.05), the null hypothesis (H0) is rejected, and hypothesis one is accepted. It can be said that teachers' gender affects the use of educational technology in the teaching process. This means that the higher the average of this index is above the mean, the more the gender of the teacher affects the use of educational technology and the teaching process.

Hypothesis two: Does the level of education of teachers and the use of educational technology in the teaching process have an effect?

Analysis regarding hypothesis two shows that the F-test of two variables, namely the level of education of teachers and the obstacles to using educational technology in the teaching process, is equal to 8.883. Considering the obtained p-value and level (0.05), the null hypothesis (H0) is rejected, and hypothesis two is accepted. It can be said that the use of educational technology in the teaching process of teachers is different depending on their level of education.

Hypothesis three: Does the role of teachers and the use of educational technology in the teaching process have an effect?

Analysis regarding hypothesis three shows that the T-test of two variables, namely the role of teachers and the use of educational technology in the teaching process, is equal to 9.343. Considering the critical T-value and level (P=0.05), the null hypothesis (H0) is rejected, and hypothesis three is accepted. It can be said that the role of teachers affects the use of educational technology in the teaching process. This means that the higher the

average of this index is above the mean, the more the role of the teacher affects the use of educational technology and the teaching process.

Hypothesis four: Does the role of managers and the use of educational technology in the teaching process have an effect?

Analysis regarding hypothesis four shows that the T-test of two variables, namely the role of managers and the use of educational technology in the teaching process, is equal to 7.648. Considering the critical T-value and level (P=0.05), the null hypothesis (H0) is rejected, and hypothesis four is accepted. It can be said that the role of managers affects the use of educational technology in the teaching process. This means that the higher the average of this index is above the mean, the more the role of the manager affects the use of educational technology and the teaching process.

Hypothesis five: Does the role of education and the use of educational technology in the teaching process have an effect?

Analysis regarding hypothesis five shows that the T-test of two variables, namely the role of education and the obstacles to using educational technology in the teaching process, is equal to 7.648. Considering the critical T-value and level (P=0.05), the null hypothesis (H0) is rejected, and hypothesis five is accepted. It can be said that the role of education affects the use of educational technology in the teaching process. This means that the higher the average of this index is above the mean, the more the role of education affects the use of educational technology and the teaching process.

1. The results of the research indicate that teachers do not show much interest in using media in the classroom due to their lack of awareness of the role, importance, and benefits of educational technology. Therefore, it is suggested that training courses on the role and importance of educational technology be organized for all teachers throughout the academic year in a practical and applicable manner.

2. According to the results of this study, most elementary schools in the city of Bojnourd lack sufficient teaching aids and materials. Therefore, it is recommended that attention be paid to this issue in schools and sufficient budget be allocated to school managers to provide teaching aids and materials.

3. It is recommended that education officials in the regions and districts take the issue of not using educational technology in schools seriously and encourage teachers who actively use educational technology in their teaching during evaluations, while holding teachers who are indifferent to this issue accountable.

4. Since the hours of teaching lessons are limited compared to the content of textbooks, it is recommended that the volume of textbooks be adjusted to match the hours allocated for teaching.

5. It is recommended that education officials and staff take special measures to alleviate and reduce economic pressures caused by issues outside of school, in order to provide material comfort and peace of mind for teachers and create a positive spirit for them to carry out their work.

6. School managers are essential pillars of educational institutions, so it is recommended that the best, most specialized, and experienced individuals be selected and employed as school managers. This is because the familiarity and belief of school managers in the positive effects of using educational technology in the teaching and learning process will facilitate the realization of this goal in education.

Given the urgent need and increasing demand for the use of educational technology in all levels of education in our country, it is recommended that this issue be taken seriously from the beginning of teacher training centers and universities.

References

Ahadian, M. (2011). Introduction to educational technology. Tehran: Ayij. (In Persian)

Athari Rad, A. (2010). The role of educational technology in facilitating school management. Journal of Educational Technology Development, 10(3), 89. (In Persian)

Fardanesh, H. (2014). Theoretical foundations of educational technology. Tehran: Samt. (In Persian)

Hematzadeh, N. (2017). The necessity of using advanced educational technology in education and obstacles to its application in Iran. Journal of Educational Technology and Development, 4. (In Persian)

Khorshidi, Z. (2012). Practical guide to designing, producing, and using educational materials. Tehran: Daneshyar Research, Publishing, and Consulting Company. (In Persian)

Marashi, S. M. (2011). Effective use of media in education. Journal of Educational Technology Development, 11(7), Farvardin. (In Persian)

Mashayekhi, P. (2018). Master's thesis, Factors inhibiting the use of educational technology in the process of productivity and learning from the perspective of elementary school teachers. (In Persian)

Nazari, J. (2011). Investigating the reasons for teachers' reluctance to use teaching aids. Kermanshah Education Department. (In Persian)

Pazouki, I. (2010). Topics in technology and educational technology. Tehran: Anis. (In Persian)

Shabani, A. (2012). Topics in technology and educational technology. Tehran: Anis. (In Persian)