

THE EFFECT OF INSTRUCTIONAL MEDIA ON PROFESSIONAL DEVELOPMENT IN SARI HIGH SCHOOLS

Zeinab Ghasemnezhad¹, Dr.Farshideh Zameni²

¹M.A in Educational Technology, Faculty of Humanities Sciences, Islamic Azad University, Sari Branch, Mazandaran, Iran

²Assistant professor, Educational Management, Faculty of Humanities Sciences, Islamic Azad University, Sari Branch, Mazandaran, Iran

Abstract

The aim of this research is to find the effect of teaching media on professional improvement of teachers at high schools In second district of sari, in which the influence of teaching media along with their components (ie writing, audio,visual,3D and multimedia)are considered in professional improvement of teachers at high schools. The method used in this research is descriptive, its population is all the high school teachers in 2nd district of sari but during the research there were 658 teachers. To determine the sample used Morgan and Karjasi table and 242 teachers were chosen randomly. The means of collecting data is questionnaire made by researcher. The permanence of questionnaire is calculated by cronbach's alpha coefficient was .84.To analyzes the data which have normal distribution the one sample T test is used and the data without normal distribution binomial test is used. The findings have revealed that teaching media have appositve influence on professional improvement of teachers and also have shown that writing media, visual media 3D and multimedia have influence on professional improvement of teachers at high school in second district of Sari but the audio media has no influence on them.

Keyword: Media, Education, Professional Development, Teacher

Introduction

At the beginning of the third millennium and entering the knowledge age, a massive development emerged in Human society bring about so many changes in human life whereby easy access to a variety of information and technology reported, one of them reported in the context of education.

Any change in education system would lead to success while teachers get acquainted with it, desired to apply it whereby it can hope the change assigned would result in development in students' performance (Sadeghi, 2008). Development in Teachers' proficiency plays a major role in increasing students' learning and modifications in education system; thus, a particular attention has to be paid to content knowledge development and teachers' pedagogy knowledge (Sadeghi, 2008). Professional Development of Teachers conveyed as technical skill and knowledge in the context of technology, the use of technology learning assigned in schools, the skills to manage class in integrating educational Technology in class and teaching skills by means of educational technologies(Sarmadi, Seif, 2009). The educational system in accomplishing its mission will succeed if having teachers who have received

scientific competence, acquainted to educational methods and provided with professional, occupational and educational skills (Shahpasand, Rajab beigi, 2009). Teachers have a key role in the development of education. The most important quality factor accounted as the interaction that occurs between teachers and students. Therefore, most capable and qualified individuals to be hired for teaching profession is the most critical issue because quality of education system relies severely on the teachers dealing in that society(Raoof, 1999). Along with the increasing development of educational media and its importance in education, it is necessary to focus the issue of educational media to sustain the learning with more stability increasing it in learners. Today, impact of Medias in education is an unavoidable issue. Concurrent with the development and expansion of human populations and population distribution and the importance of education in human life, use of media for educational and training as well as needing them, have been increased. For an efficient instructor, there are a variety of materials and tools that can facilitate teaching and learning to take advantage of them. (Shah pasand and Rajab Begay, 2009). After the industrial revolution, a major change in the teaching method and the ways for transmission of information has been created. In this regards, Educational Medias are tools which help instructors to better control learning process and transmit the contents in a better way (Shah pasand and Rajab Begay, 2009). In general, Media education is a tool to provide comprehensive training, accounted as a part of education process and educational technology (Fardanesh, 2009). Although the material is constantly changing, get updated creative instructors who use them in their learning environment, in addition to use educational updated tools, create modern tools. In this way, the instructors would be able to have the most use by means of the least facilities where they would be motivated to learning (Shah pasand and Rajab Begay, 2009). In spite of a large effort to find literature reviews associated to present paper, the main purpose not found. In this regards, it seems the cases as follows found associated to the present paper somehow.

Mahdavi (2012) conducted a study entitled role of information technology and communications on professional development of high schools in Sari city where this study was a descriptive survey method. Statistical population consists of the entire male and female teachers in Sari city's high schools, mentioned on the whole equal to 426 individuals where the sampling provided in accordance with Morgan table with 201 individuals by means of simple random method. Library method was used to collect data and the questionnaire prepared by researcher used as data collection instrument where the validity of questionnaire confirmed by experts' cooperation so that validity acquired as 89% using Cronbach's alpha, whereby SPSS software and chi-square test has been used to analyze data. The results of research indicate information technology and communications affect teachers' professional development.

Aghili, Delavar and Baradaran (2012) conducted a research entitled an investigation into the social sciences Teachers' views on the role of visual media (TV, satellite and Internet) in the process of globalization with an emphasis on cultural policies in Iran where as the results show with regard to major position of culture and tradition and family in Iran, interpersonal communications rather than medias found more effective. TV function in culture, to build rich applications for all types of audiences, engage with the culture of different nations to meet the needs of developing countries, is not appropriate. Although, television found with Social acceptability among people, but, some do not believe in this media and acquired with information and news through satellite and internet. TV media had not proper performance in making rich content of programs, where most programs found with entertainment aspect rather than a full content.

Madadi(2010) conducted a study entitled the role of information and communication technology (ICT) on Professional development of teachers in the city of Sari, aimed to investigate the information and

communication technology (ICT) in Professional development of teachers to get to know about diversity at teaching, innovation, creativity. The method used in this study mentioned as the descriptive survey method and the statistical population chosen among teachers in district 2 of Sari city with the total number of 462 individuals and sample size of 210 individuals. Tool used to measure finding mentioned as questionnaire where its content validity confirmed by experts' cooperation so that its validity obtained 86% using Cronbach's alpha whereby SPSS software and chi-square test has been used to analyze data. To sum up, results indicated that using information and communication technology (ICT) affects teachers' professional development positively.

Islami(2008) in a study entitled an investigation into developing information and communication technology (ICT) in public schools across Mazandaran province, concluded that Computer facilities in schools are in low status and the status of teachers' ICDL skills are not reported with the ideal situation, but the high interest and motivation of teachers to use ICT in teaching reported so that educational content status evaluated well. In the light of using ICT in the curriculum, individual learning, network learning, the use of virtual laboratories should be considered as parts of the training methods.

Khakbaz, Fadaei and Mousapoor(2008) conducted a study entitled impact of curriculum on Professional development of Teachers of Mathematics. This study relied on school and class, attempting to participate teachers increasingly in decisions on the methods to improve schools' teaching quality. Teaching in this way helps the teachers to retain their thought in gaining proficiency while working and pay attention to students in the process of learning and teaching. Data used in this study collected by means of participatory method regarding two groups with 5 and 10 individuals among Teachers of Mathematics across district 2 of Kerman's high schools. Data were collected from the questionnaires, participant observation, field notes, group members outside observer notes and comments, interviews with teachers and students, sound recordings, videos and photographs and analyzed using encoding method. The results from data analysis showed that research grounded on this topic can be used as a pattern in developing teachers' proficiency.

Wendy Martin and Scott Strother(2010) in a study entitled "Connecting Instructional Technology Professional Development to Teacher and Student Outcomes" provided a study where This article presents findings from an evaluation of an instructional-technology professional development (PD) program that uses many practices advocated by PD experts. In this multiphase evaluation, evaluators examined the program, determined whether variations in program implementation had an impact on teacher outcomes, and then looked at whether variations in program implementation and teacher outcomes had an impact on student achievement. We found that greater PD fidelity was associated with higher quality lesson plans and higher student achievement. This evaluation suggests that instructional-technology PD that is closely aligned to a program's core conceptual foundations can lead to positive teacher and student outcomes.

Andrew Madden(2005) in a study entitled "Using the Internet in teaching: the views of practitioners (A survey of the views of secondary school teachers in Sheffield, UK)", conducted his study in this way where A questionnaire was generated from the results of a series of interviews at The City School one of the 27 state secondary schools in Sheffield. In October 2002, it was sent out to 499 Heads of Department at the remaining 26 state secondary schools. Responses were received from 188 teachers, ranging in age from 24 to 60 years old. The purpose of the questionnaire was to gain information about teachers' views of the Internet and its usefulness as an educational tool.

Nearly 85% of teachers acquired their Internet skills informally (self-taught, learned from friends/colleagues, etc), rather than on a taught course. Despite this, most of the respondents were confident of their ability to use the Internet, with the most confident users being young teachers of technical subjects. However, there was a widespread perception (particularly amongst women teachers) that students are more competent users of the Internet than are teachers. Older teachers were more likely to feel under pressure to use the Internet than their younger colleagues.

Only about a third of teachers agreed with the statement "I often use the Internet with classes." Responses varied significantly according to school and subject. There was strong support, however, for the suggestion that the Internet is a valuable source of learning and teaching materials.

To sum up, the literature review indicated that in today's world with astonishing advances in technology and science and technology of education and the development of virtual worlds in education arena, what left unavoidable was the very notion of Central role of teacher in the process of education where teacher has not put aside in no state and under no system and nothing has replaced with it. In the most developed education systems, teacher has defined as a key source so that it can say the entire technology achievements appeared by the presence of teacher. Training materials are changing day by day and textbook is not conveyed as the only means for training any more. Further, teacher's role has changed attempted to conduct the class and students as a leader or head. Education in today's world found with a world of difference comparing to the past. Today's educational systems have to train forces to be able in understanding the complex world, creative and inventive in managing and conducting the education system. One of the most fundamental developments in the education system mentioned the transformation in attitudes and teaching methods of teachers and administrators of educational systems. Hence, it is needed to bring about changes in teaching method of teachers and administrators of educational systems by means of a variety of methods. Taking advantage of educational media is one of the things that helped to improve the process to be monitored. Medias can compensate the losses and shortcomings in education system, causing the professional skills promote and improve in teachers' teaching.

According to what mentioned above, the present paper paid a particular attention to impact of instructional media on professional development of teachers in high schools whereby the researcher started to investigate the hypotheses as follows:

- 1-Written media affects directly professional development for teachers in secondary schools.
- 2- Visual media affects directly professional development for teachers in secondary schools.
- 3- Audio media affects directly professional development for teachers in secondary schools.
- 4- Visual- Audio media affects directly professional development for teachers in secondary schools.
- 5- Three-dimensional media affects directly professional development for teachers in secondary schools.
- 6-Multimedia affects directly professional development for teachers in secondary schools.

Research methodology

This paper is an applied type of research, mentioned descriptive in nature from survey method. The statistical population consists of the entire teachers in Sari district 2's high schools, totally 658 individuals where 416 and 242 individuals of the population were females and males, respectively. Krejcie & Morgan table used to determine the sample of this study. As the statistical population reported 658 individuals, 242 individuals taken as the sample size. Sampling selected using simple random method. In this paper, library method and questionnaire have been used to collect data. Books, articles,

websites and scientific journal reference and information used as the sources in library method in order to collect data. In this study, the questionnaire prepared by researcher with 28 questions based on Likret's five-option scale has been used where the levels include very high, high, relatively, low and very low, mentioning that respectively the scores 5, 4, 3, 2 and 1 assigned to these levels. The questionnaire distributed among teachers and then filled as coordinated with the Sari province's high school teachers. The validity of questionnaire's questions revised by professors and experts and its content validity has been confirmed. Cronbach's alpha test has been used to determine reliability so that 30 questionnaires by means of Preliminary plans provided for respondents before the plan gets finished whereby data was analyzed after the data collected, consequently alpha coefficient(84%) indicated the reliability of tools to implement the questionnaire. The descriptive statistical methods including Frequency distribution tables, percentages, charting, mean and standard deviation have been used in this study and inferential statistics including Chi- square have been used to analyze data. The result of test indicates that as the alpha coefficient (84%) computed more than 70%, it can conclude that the zero hypotheses has been confirmed, indicating that the confidence level of the questionnaire used in this study is somehow acceptable.

Research Findings

To investigate the descriptive statistics, mean and standard deviation of data distributed would be as that of in table 1.

Table 1. Results of descriptive statistics on the research data distributed

Indicators	Written media	Visual media	Audio media	Visual- Audio media	Three-dimensional media	Multimedia
Frequency	238	240	244	242	245	243
Mean	4.00	3.78	3.16	3.84	3.85	4.14
Standard deviation	0.71	0.64	0.83	0.79	0.75	0.69

The results of table show that mean of respondents' view on the impact of instructional media in using Written media, Visual media, Audio media, Visual- Audio media, Three-dimensional media and multimedia reported 4, 3.78, 3.16, 3.84, 3.85 and 4.14, respectively where the highest mean relates to using multimedia and the least relates to Audio media.

The first research hypothesis:

Written media affects directly professional development for teachers in secondary schools.

Table 2. The results of Binomial test associated to the first research hypothesis

Groups	Expected limit	Number	The probability observed	The probability expected	Significance level
Lower than average level	≤ 3	23	0.10	0.10	0.000
More than average level	> 3	215	0.90	0.90	
Total		238	1.00	1.00	

Because the data distribution was not normal in this hypothesis, so nonparametric binomial distribution has been used to test hypothesis. The results of table show that the frequency of responses associated to the effect less than average limit for Written media in teachers' professional development (10%) and the frequency of responses more than average limit for the effect of Written media in teachers' professional

development (90%) reported. the difference of frequency in two group of responses has been reported significant at 99% level. Hence, the zero hypotheses based on using written media did not affect the teachers' professional development so that the zero hypotheses accepted. Hence, to respond to the first question of research, it is deduced that using written media affects teachers' professional development.

The second research hypothesis:

Visual media affects directly professional development for teachers in secondary schools.

Table 3. one-sample t-test associated to the second research hypothesis

Mean	Standard deviation	Mean expected	T calculated	Freedom degree	t-value	Significance level
3.78	0.64	3	18.98	239	2	0.001

The results of table 3 indicate that the mean calculated (3.78) has been increased to the mean expected (3). Calculated t (18.98) in one-sample t-test has been exceeded from t indicated in table. Hence, the difference between both means mentioned significant at 99% significant level. Hence, the zero hypotheses based on using Visual media did not affect the teachers' professional development so that the zero hypotheses accepted. Hence, to respond to the second question of research, it is deduced that using Visual media affects teachers' professional development.

The third research hypothesis

Audio media affects directly professional development for teachers in secondary schools.

Table 4. The results of Binomial test associated to the third research hypothesis

Groups	Expected limit	Number	The probability observed	The probability expected	Significance level
Lower than average level	≤ 3	116	0.48	0.50	0.481
More than average level	> 3	128	0.52		
Total		244	1.00		

Because the data distribution was not normal in this hypothesis, so Nonparametric binomial distribution has been used to test hypothesis. The results of table show that the frequency of responses associated to the effect less than average limit for Audio media in teachers' professional development (48%) and the frequency of responses more than average limit for the effect of Audio media in teachers' professional development (52%) reported. the difference of frequency in two group of responses has not been reported significant at 99% level. Hence, the zero hypothesis based on using Audio media did not affect the teachers' professional development so that the zero hypothesis accepted. Hence, to respond to the third question of research, it is deduced that using Audio media affects teachers' professional development.

The forth research hypothesis

Visual- Audio media affects directly professional development for teachers in secondary schools.

Table 5. the results of Binomial test associated to the forth research hypothesis

Groups	Expected limit	Number	The probability observed	The probability expected	Significance level
Lower than average level	≤ 3	58	0.24	0.50	0.000
More than average level	> 3	184	0.76		

Total		242	1.00		
-------	--	-----	------	--	--

Because the data distribution was not normal in this hypothesis, so Nonparametric binomial distribution has been used to test hypothesis. The results of table show that the frequency of responses associated to the effect less than average limit for Visual- Audio media in teachers' professional development (24%) and the frequency of responses more than average limit for the effect of Visual- Audio media in teachers' professional development (76%) reported. the difference of frequency in two group of responses has been reported significant at 99% level. Hence, the zero hypothesis based on using Visual-Audio media did not affect the teachers' professional development so that the zero hypothesis accepted. Hence, to respond to the third question of research, it is deduced that using Visual- Audio media affects teachers' professional development.

The fifth research hypothesis

Three-dimensional media affects directly professional development for teachers in secondary schools.

Table 6. the results of Binomial test associated to the fifth research hypothesis

Groups	Expected limit	Number	The probability observed	The probability expected	Significance level
Lower than average level	≤ 3	56	0.23	0.50	0.000
More than average level	> 3	189	0.77		
Total		245	1.00		

Because the data distribution was not normal in this hypothesis, so nonparametric binomial distribution has been used to test hypothesis. The results of table show that the frequency of responses associated to the effect less than average limit for Three-dimensional media in teachers' professional development (23%) and the frequency of responses more than average limit for the effect of Three-dimensional media in teachers' professional development (77%) reported. the difference of frequency in two group of responses has been reported significant at 99% level. Hence, the zero hypotheses based on using Three-dimensional media did not affect the teachers' professional development so that the zero hypotheses accepted. Hence, to respond to the fifth question of research, it is deduced that using Three-dimensional media affects teachers' professional development.

The sixth research hypothesis

Multimedia affects directly professional development for teachers in secondary schools.

Table 7. the results of Binomial test associated to the sixth research hypothesis

Groups	Expected limit	Number	The probability observed	The probability expected	Significance level
Lower than average level	≤ 3	16	0.07	0.50	0.000
More than average level	> 3	227	0.93		
Total		243	1.00		

Because the data distribution was not normal in this hypothesis, so Nonparametric binomial distribution has been used to test hypothesis. The results of table show that the frequency of responses associated to the effect less than average limit for Multimedia in teachers' professional development (7%) and the frequency of responses more than average limit for the effect of Multimedia in teachers' professional development (93%) reported. the difference of frequency in two group of responses has been reported significant at 99% level. Hence, the zero hypothesis based on using Multimedia did not affect the teachers' professional development so that the zero hypothesis accepted. Hence, to respond to the sixth question of research, it is deduced that using Multimedia affects teachers' professional development.

Discussion and conclusion

The results of first hypothesis showed that Written media affects directly professional development for teachers in secondary schools. In previous literatures the same case with this finding has not achieved, but, as the written media such as Books, magazines, educational publications and so forth are used by teachers, affecting substantially increase of professional development, it is recommended to use such media to increase teachers' knowledge and attraction in order to receive more attention by students.

The results of second hypothesis showed that Visual media affects directly professional development for teachers in secondary schools. This is not in consistent with the findings of the research by Aghili, Delawar and Baradaran(2011). The results from this hypothesis showed that using Visual media including Slide, overhead, training boards, posters and so forth besides teachers in educational environments helped the teachers whereby more efficiency in transmitting educational message by teachers to learners would come to realize. Hence, it is recommended to use this media to increase teachers' skill in transmitting new issues as well as proposing teaching with higher quality in all education levels.

The results of third hypothesis showed that Audio media does not affect directly professional development for teachers in secondary schools. In this topic of interest, the same findings were not obtained. The results from this hypothesis show that the audio tools and devices provided with less efficiency than other media in teachers' teaching. This indicates that teachers have to be provided with newer together with modern facilities in order to increase the quality to transmit information and data. Hence, it is recommended to use other media as alternatives in order to increase teachers' quality of teaching and enhance the speed to transmit the educational message.

The results of forth hypothesis showed that Visual- Audio media affects directly professional development for teachers in secondary schools. This is not in consistent with the findings of the research by Aghili, Delawar and Baradarn(2012). The results from this hypothesis show that using this type of media by teachers affects learning and teaching motivating the learners. Further, in the regions found with less specialized teachers, using such media helps upmost. Hence, it is recommended to use such media to increase teachers' learning quality and skills in understanding the lessons and contexts to students.

The results from fifth hypothesis showed that Three-dimensional media affects directly professional development for teachers in secondary schools, not found the same results in this context. The results from this hypothesis show that Three-dimensional media affects directly professional development for teachers particularly at teaching process while there does not exist the possibility of education by means of real objects. Hence, it is recommended to use such media to enhance the Professional skills of

teachers in teaching and increase Professional skills of teachers in transmitting the educational content to students.

The results from sixth hypothesis showed that Multimedia affects directly professional development for teachers in secondary schools. This is in consistent with the findings of research by Madden (2005). The results from this hypothesis show that applying multimedia in teachers' teaching rather than traditional teaching method would find with more effect so that use of internet and websites and computer-based programs besides teachers would find with more efficiency getting the process of information exchange faster. Hence, it is recommended to use such media to proliferate the new information exchange in teachers' teaching as well as increase the skill to transmit the lesions by teachers.

According to the research findings, suggestions to develop applying educational Medias on teachers' professional development are proposed:

Attempt to assign culture on the concept, necessity and methods of applying educational media in schools due its positive effect on skill, quality and speed of teachers' teaching.

- Develop knowledge and development in teachers' view on the use of educational Medias by means of organizing educational courses with high quality.
- Use culture and bring about positive attitude in designing educational Medias by teachers.
- Enhance human force teaching infrastructures in relation to educational Medias.
- Introduce proper websites to teachers and students and their parents.
- Develop and enhance teachers' knowledge on information and communication technology to let them to know the different types of IT and ICT technologies and scientific data.

References

- Islami Rajabali (2008). Examine the development of ICT in the public schools of the province of Mazandaran, Mazandaran Education Research Center.
- Khakbaz, Azimeh Sadat, Fadaei, Mohammad, Mosapoor, Nemat Ullah (2008). Impact of Studying Courses on Professional Development of Teachers of Mathematics, Journal of Education, No. 94.
- Raoof, A. (1998). World Movement for Reform in Teacher Training, Tehran, Press Institute of education.
- Sarmadi, M. and Seif, MH (2009), classroom management, Tehran, Payam Noor University Press.
- Shahpasand, Mohammad, Rajab Beigi, M. (2009). Educational media, agriculture education publishing center.
- Sadeghi, N. (2008). Approach to continuous professional development of teachers, Journal of Psychology, in the thirty-eighth, No. 2.
- Rezaei, Seyed Vahid, Delaware, Baradaran, Hanieh (2012), review the social teachers' views regarding the role of visual media (TV, satellite and Internet) in the process of globalization with its emphasis on cultural policies in Iran, Journal of Culture and Communication, first-year Vol.
- Fardanesh, H. (2009). Theoretical Foundations of Educational Technology, Tehran, Samt publishing.
- Madadi, Gulshan (2010). The role of ICT on teacher professional development, master's thesis, Islamic Azad University, Sari Branch.
- Mahdavi Jamnani, Rezvaneh(2012). The role of ICT on professional development for high school teachers Sari, MS Thesis, Islamic Azad University, Sari Branch.

- Madden, Andrew; Ford, nigel; Miller, david; Levy, philippic.(2005). Using the internet in teaching; the views of practitioners, A survey of the views of secondary school teachers in Sheffield.
- Reddi, usha V et all.(2003). Educational multimedia: a handbook for teacher developers. New Delhi: common wealth educational media center for Asia.
- Wendy, martin, & Scott, strother.(2010). Connecting instructional technology professional development to teacher and student outcomes.