

## THE ABILITIES OF PHYSICAL EDUCATION TEACHERS IN EDUCATIONAL TECHNOLOGIES AND MULTIMEDIA

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### ABSTRACT

In the field of education, information and communication technologies and multimedia tools have become more prevalent than ever that almost all schools can obtain. Physical education which is not only very important component of formal and informal education but also an important part of lifelong learning has been affected by these developments and physical education teachers has begun to use educational technologies and multimedia. On the other hand, because of some reasons like lack of technical facilities and inadequate in-service training, educational technologies and multimedia tools are either not used in physical education classes or used ineffectively. In this study, how often and which educational technologies and multimedia tools are used by physical education teachers and – if there are – the reasons for ineffective use of these tools are investigated. Moreover, based on the findings of the study, some suggestions for physical education teachers to use educational technologies better are made.

**Key Words:** Educational technology, Multimedia, Physical education teachers

### INTRODUCTION

Rapid developments in electronic technology have made important effects on education systems in the world. It is doubtless that new technology has affected both economical system and social and education system. People who plan the future education have to know where this technology inclines to and act considering this (Akkoyunlu, 2002; Jones, 1997).

Technology is a powerful mean to reform schools, increase students' success and make education effective (Equilin, 2004). Software and Information Industry Association in the USA published a 135-page-report called "Effectiveness of Technology at Schools 2000 Report" in 2000 and analyzed the results of quality researches, PhD. Thesis and 300 professional magazines about educational technology in the report. This report showed how the technology increased the students' success, developed students' trust and attitude to learning and how it developed the effectiveness between students and teachers in the education atmosphere (Zhu, 2003).

Students learn to know the abilities of other people in their lives and their own abilities with the help of physical education to satisfy some feelings which are innate like winning, losing, racing. Students also learn to accept losing, to respects others rights to help each other, duty and responsibility in an appropriate way in different practical atmospheres. Because of this, in modern education system, physical education and sport are important means which aim to make people ready for life according to the expectations of their societies.

It is obvious from the definition that expectations from physical education and sport are huge and the width of the area they affect is remarkable. It will be a limited thinking to apply this without using technology and it will decrease its effectiveness.

### EDUCATIONAL TECHNOLOGY AND MULTIMEDIA

The term educational technology is used as the design, development, practice and evaluation of the system, method, materials in order to get effective results and develop human's learning process. Throughout the history, the terminology about educational technology developed related to others like educational technology, distant education learning with computer (Hedberg and McNamara, 2002).

In the 18<sup>th</sup> century, Rousseau (1762/1933) claimed that the most effective and social learning took place by interaction of students with the nature and natural environment. With regard to this meaning educational technologies provide the students with organized and modified atmosphere and provide their interaction with nature in an artificial way.

Many technology supported educational environments are in the form of natural environments' simulation. This enables the students to make a correspondence between their own projects and the real existing problems and this also makes an authentic learning possible (Winn, 2002). Cuban (1993), argues that rapid spread of educational technology is related to three factors; a) getting the students well prepared for the growing demand for technology workforce b) the potential of computer in learning individually c) the belief that using computer in the classroom will increase the productivity.

Societies are transforming from industrial culture in to port modern culture. Post modern society is changing rapidly and the sides affecting each other in the society cannot depend on once-learned curriculum or educational content. They have to act in the bigger knowledge masses and they also have to organize the knowledge the need. Multimedia tools and internet are media which perform to make it easier to access that big knowledge masses. These needs of modern societies are among the main reasons for using multimedia in educational environments (Witfelt, 2000).

In today's world, by stating modern education we mean environments which have no place limitation and which contribute to the development of individuals regardless of place and time. In order to be sure of efficiency, this contribution must be very fast using all the technological innovations and it must be joyful and must meet the requirements of the contemporary world.

According to Scolnick, Larson and Smith (1993) today's generations are brought up with the technologies of video, audio and computer. Multimedia technologies are arousing the interests of these generations. At first, educational ethnology was regarded only as the application of communication media. The effect of media, especially the television, on the behavioral change and its educational use has been gone over (Levie, 1978).

In this context, in our time we mainly mean the ones related to computers, intranet, internet technologies and World Wide Web when w talk about educational technology (Assiri, 2003). The rapid improvements in the computer technology have made the lesson activities easier for students and have increased their motivation.

The students can cooperate with the students from other classrooms or the other schools an can do the projects through internet (Mohnsen, 2001; Sheingold and Hadley 1990). For instance the forums on the internet can increase the group interaction and WebPages can make the students reach huge piles of information easily. The use of e-mail is a beneficial way for informal communication between teachers as well (Knapper, 2001). The use of internet in the field education provides the information to spread fast improves communicative and writing skills and facilitates motivation for learning.

In today's world computers can both run the software faster and they offer quality service in terms of graphics and video. By the help of using such multimedia tools it can be said that psychomotor skills can improve in addition to the cognitive ones. Moreover, multimedia technology has facilitative effects on the analysis of motor skills for physical education (McKethan and Everhart, 2001).

### **THE USE OF TECHNOLOGY AND MULTIMEDIA IN PHYSICAL EDUCATION**

In the history of various country's cultures physical education has served people for differing purposes. Since the primitive ages, physical activities have played an important role in the society formally or informally. Physical activities have been needed for a number of reasons; such as, defense, environmental factors and continuing the lives. In some other situations, the most important motive for physical activity has been the longing for a more quality life (Bird, 1998).

It was found that the use of technology in physical education programs increased the motivation to materials offered and learning (Thornburg and Hill, 2004). Physical education teachers have started to be enthusiastic n using the technology together with the potential of the internet in their class. The results of the studies showed that the use of technology in physical education as a teaching tool could be useful for both the teachers and the students. Technology offers the atmosphere which can provide students autonomous learning. That is, it provides a learning environment where the students more actively involve in learning process (Thornburg and Hill, 2004). Most of the students consider taking responsibility in their own learning as more motivating (Witfeld, 2000).

In addition to being an educational tool, the understanding and acquiring the skills will be accomplished after applying the technology in teaching process effectively. Technology must be seen as a way to facilitate learning and improving interaction with the students (Thurnburg and Hill, 2004). From this point of view, the use of technology in physical education can be regarded as a factor teaching both theoretical information and psychomotor skills, improving interaction and increasing motivation.

### **PHYSICAL EDUCATION TEACHERS AND EDUCATIONAL TECHNOLOGY**

By using technological developments and internet in an organized way; students, teachers, athletes and trainers, doctor and patient may come together eve if they are in different countries. Using WebPages, teleconference, e-mail and Msn, schools can be more than being just a building with walls and can become something that has a

connection with every phase of life. The methods like Msn, pps and video might provide education to be more effective and enjoyable.

However, in the related studies it is stated that educational technologies are not meaningful alone, they cannot be used as the only teaching method, they cannot take the place of teachers.

Today, educators should use technology to be able to find the source of related studies at least. Hansen and Witfelt (1999) stated that teachers should have two abilities: technology literacy and technology/multimedia ability. These abilities should use the educational technologies at the user level and this level includes using multimedia applications, comprehending and adjusting the screens, using the search facilities and so forth. Besides, it is necessary to use some specific software and simulations for teaching; this is a job that needs interest and time (Shephard, 2004).

American Office of Technology Assessment emphasized that technological expenses will not be effective even if the teachers get the proper education and support. In the 1998 yearly report, 4 conditions were mentioned for teacher education in technology application: Teachers,

- Should be educated in using the technology,
- They should get the necessary training and support to have an understanding and a vision on the role of technology in education.
- They should be backed up in their trial of innovations.
- They should have time for learning and practice (Office of Technology Assessment, 1988).

Adequate in service training may help to solve the problems related with time, education and support which are the important factors of using technology in the class. The teachers who get the education during previous education stages before beginning the profession will be more successful in using the technology in their class (Smarkola, 2004)

One of the biggest difficulties in using the educational software and multimedia technologies more commonly is that the teachers' not feeling comfortable with technology (Electronic education report, 2002). According to social cognitive theory and performance models there are personal, behavioral and environmental factors affecting the teachers' use of technology. Zhu (2003), adapted these factors from Dusick (1998) and described as the following in the study named "The Application of Computer Technology at State Schools":

- a. Personal and behavioral factors; opinions, conformity with the knowledge and topic, attitude, personal ability, computer ability, experience in teaching and expertise.
- b. Environmental factors: Education and workshop support from managers and colleagues, accessing the sources.

### **THE AIM OF THE STUDY**

The aim of the study is to determine the level of the use of educational technology of physical education teachers working in Turkey.

### **THE POPULATION**

The population of the study consists of the physical education teachers in Turkey.

### **DATA COLLECTION**

The data used in the study was collected with the scale named "Use of Educational Technology Questionnaire". The questionnaires were applied at the in service training courses in Çanakkale dated 20.06.2005 and in Mersin dated 10.10.2005 to the physical education teachers from 81 provinces of Turkey.

### **THE QUESTIONNAIRE**

The questionnaire was prepared by the researcher in order to determine the use of educational technologies taking the specialists opinions on the issue. Six questions at the beginning were related with the personal information of the teachers and the latter 58 questions were related with the level of educational technology use.

There are totally 64 questions in the questionnaire. The validity and reliability of the questionnaire as provided. The opinions of the specialists were taken for validity. As for reliability, the reliability coefficient cronbach alpha was found to be, 9516.

### The Statistical Method of the Study

In the study qualitative and quantitative research methods were used. In order to check if there are differences according to sex, educational status and in service training t-test; for the other variables One Way ANOVA were applied using the SPSS.

### Demographical Situations of the Cases

**Table 1. Sex of the Physical Education Teachers Who Took The Survey**

1.	24 %	(46 people)	woman
2.	76 %	(145 people)	man

In the study the demographical situations of the teachers were determined. As it can be seen in the Table 1 the 24 % (46 people) of the cases are women, 76 % (145 people) of the cases are men.

**Table 2. Age of the Physical Education Teachers Who Took The Survey**

1.	4,2 %	25 and below	(8 people)
2.	35,4 %	26-30	(68 people)
3.	46,4 %	31-35	(89 people)
4.	5,7 %	36-40	(11 people)
5.	7,8 %	41 and older	(15 people)

% 4.2 (8 people) of the physical education teachers who took the survey is at the age of 25 years old and below, % 35.4 (68 people) is between 26-30, % 46.4 (89 people) is between 31-35, % 5.7 (11 people) is between 36-40 and % 7.8 (15 people) is 41 years old and older.

**Table-3 Years In Service of Physical Education Teachers Who Took The Survey**

1.	% 18,2	0-5 years	(35 people)
2.	% 58,3	6-10 years	(112 people)
3.	% 13,5	11-15 years	(26 people)
4.	% 4,7	16-20 years	(9 people)
5.	% 3,6	20 years and more	(7 people)

As seen in Table 3 the years in service of physical education teachers who took the survey is % 18.2 (35 people) for 0-5 years, % 58.3 (112 people) for 6-10 years, % 13.5 (26 people) for 11-15 years, % 4.7 (9 people) for 16-20 years and % 3.6 for 20 years and more.

**Tablo-4 Place of Work of Physical Education Teachers Who Took The Survey**

1.	% 73,4	Province	(141 people)
2.	% 20,3	District	(39 people)
3.	% 5,2	Town	(10 people)

% 73.4 (141 people) of the physical education teachers who took the survey work in the provinces, while % 20.3 (39 people) of them work in the districts and % 5.2 (10 people) work in towns.

**Table-5 Educational Background of Physical Education Teachers Who Took The Survey**

1.	%89,1	Bachelor's Degree	(171 people)
2.	%9,4	Master's Degree	(18 people)

% 89.1 (171 people) of them have Bachelor's Degree and % 9.4 (18 people) have Master's Degree.

**Table-6 In-Service Training of Physical Education Teachers Who Took The Survey On Instructional technologies and Material Development**

1.	% 34,9	(67 people)	Yes
2.	% 60,9	(117 people)	No

% 34.9 (67 people) of the physical education teachers who took the survey have received in-service training about instructional technologies and material development, on the other hand % 60.9 (117 people) haven't received such an in-service training course.

## FREQUENCIES

**Blackboard:** % 3.7 (7 people) of the physical education teachers who took the survey stated that they never use the blackboard; whereas % 59.13 (112 people) of them said that they use it rarely, and % 58 (53 people) claimed to use it regularly, finally % 9 (17 people) stated that they use it frequently.

**Graphics:** % 42.2 (76 people) of the physical education teachers who took the survey stated that they never use graphics; on the other hand % 43.3 (78 people) of them said that they use them rarely, and % 12.8 (23 people) claimed to use them on regular basis, finally % 1.7 (3 people) stated that they use graphics frequently.

**Large Picture:** % 33.7 (61 people) of the physical education teachers who took the survey stated that they never use large pictures; whereas % 47 (85 people) of them said that they use them rarely, and % 16.6 (30 people) claimed to use them regularly, finally % 2.8 (5 people) stated that they use them frequently.

**Book:** % 3.8 (7 people) of the physical education teachers who took the survey stated that they never use books; on the other hand % 42.6 (49 people) of them said that they use them rarely, and % 50 (91 people) claimed to use them on regular basis, finally % 19.2 (35 people) stated that they use books frequently.

**Billboard:** % 6.7 (12 people) of the physical education teachers who took the survey stated that they never use the billboard; whereas % 19.6 (35 people) of them said that they use it rarely, and % 46.9 (84 people) claimed to use it regularly, finally % 26.8 (48 people) stated that they use it frequently.

**Cartoons:** % 44.3 (77 people) of the physical education teachers who took the survey stated that they never use cartoons; on the other hand % 39.7 (49 people) of them said that they use them rarely, and % 50 (91 people) claimed to use them on regular basis, finally % 19.2 (35 people) stated that they use cartoons frequently.

**Internet:** % 12.2 (23 people) of the physical education teachers who took the survey stated that they never use the Internet; whereas % 24.5 (47 people) of them said that they use it rarely, and % 32.8 (63 people) claimed to use it regularly, finally % 29.2 (56 people) stated that they use it frequently.

**www Page:** % 28.8 (51 people) of the physical education teachers who took the survey stated that they never use ww pages; whereas % 23.2 (47 people) of them said that they use them rarely, and % 29.9 (53 people) claimed to use them regularly, finally % 18.1 (32 people) stated that they use them frequently.

**Internet Camera:** % 68.2 (120 people) of the physical education teachers who took the survey stated that they never use Internet Cameras; whereas % 17 (30 people) of them said that they use them rarely, and % 6.8 (12 people) claimed to use them on regular basis, finally % 6.3 (11 people) stated that they use them frequently.

**Chat:** % 61.9 (109 people) of the physical education teachers who took the survey stated that they never use chatting; on the other hand % 25 (44 people) of them said that they use it rarely, and % 6.8 (12 people) claimed to use it regularly, finally % 6.3 (11 people) stated that they use it frequently.

**Teleconference:** % 78 (135 people) of the physical education teachers who took the survey stated that they never use teleconference; whereas % 13.3 (23 people) of them said that they use it rarely, and % 4.6 (8 people) claimed to use it on regular basis, finally % 4 (7 people) stated that they use it frequently.

**Search Engine:** % 51.7 (90 people) of the physical education teachers who took the survey stated that they never use search engine; on the other hand % 21.3 (37 people) of them said that they use it rarely, and % 15.5 (27 people) claimed to use it regularly, finally % 11.5 (19 people) stated that they use it frequently.

**Television:** % 14.5 (27 people) of the physical education teachers who took the survey stated that they never use television; whereas % 30.1 (56 people) of them said that they use it rarely, and % 35.5 (66 people) claimed to use it regularly, finally % 19.9 (37 people) stated that they use it frequently.

**Video:** % 23.9 (44 people) of the physical education teachers who took the survey stated that they never use video; whereas % 28.8 (53 people) of them said that they use it rarely, and % 35.3 (65 people) claimed to use it on regular basis, finally % 12 (22 people) stated that they use it frequently.

**CD:** % 30.4 (56 people) of the physical education teachers who took the survey stated that they never use CDs; on the other hand % 21.2 (39 people) of them said that they use them rarely, and % 34.8 (64 people) claimed to use them on regular basis.

**Film:** % 34.3 (62 people) of the physical education teachers who took the survey stated that they never use films; whereas % 32.6 (95 people) of them said that they use them rarely, and % 26 (47 people) claimed to use them regularly, finally % 7.2 (13 people) stated that they use them frequently.

**Video Camera:** % 41.8 (74 people) of the physical education teachers who took the survey stated that they never use video cameras; on the other hand % 32.8 (58 people) of them said that they use them rarely, and % 18.6 (33 people) claimed to use them regularly, finally % 6.8 (12 people) stated that they use them frequently.

**Radio:** % 64.6 (113 people) of the physical education teachers who took the survey stated that they never use radios; whereas % 18.9 (33 people) of them said that they use them rarely, and % 10.3 (18 people) claimed to use them regularly, finally % 6.3 (11 people) stated that they use them frequently.

**Cassette Player:** % 38.6 (68 people) of the physical education teachers who took the survey stated that they never use cassette players; whereas % 26.1 (46 people) of them said that they use them rarely, and % 22.2 (39 people) claimed to use them regularly, finally % 13.1 (23 people) stated that they use them frequently.



**Over-Head Projector:** % 38.6 (68 people) of the physical education teachers who took the survey stated that they never use over-head projectors; whereas % 26.1 (46 people) of them said that they use them rarely, and % 22.2 (39 people) claimed to use them regularly, finally % 13.1 (23 people) stated that they use them frequently.

**Slides:** % 73.8 (124 people) of the physical education teachers who took the survey stated that they never use slides; on the other hand % 16.7 (28 people) of them said that they use them rarely, and % 7.1 (12 people) claimed to use them regularly, finally % 2.4 (4 people) stated that they use slides frequently.

**Windows:** % 20.9 (38 people) of the physical education teachers who took the survey stated that they never use windows; whereas % 24.2 (44 people) of them said that they use it rarely, and % 28 (51 people) claimed to use it regularly, finally % 26.9 (49 people) stated that they use it frequently.

**DOS:** % 63 (104 people) of the physical education teachers who took the survey stated that they never use DOS; whereas % 18.8 (31 people) of them said that they use it rarely, and % 13.3 (22 people) claimed to use it regularly, finally % 4.8 (8 people) stated that they use it frequently.

**Powerpoint:** % 34.4 (63 people) of the physical education teachers who took the survey stated that they never use powerpoint; on the other hand % 35 (64 people) of them said that they use it rarely, and % 19.1 (35 people) claimed to use it regularly, finally % 11.5 (21 people) stated that they use it frequently.

**Excel:** % 28.6 (52 people) of the physical education teachers who took the survey stated that they never use excel; whereas % 34.6 (63 people) of them said that they use it rarely, and % 25.8 (47 people) claimed to use it regularly, finally % 11 (20 people) stated that they use it frequently.

**Scanner:** % 39 (71 people) of the physical education teachers who took the survey stated that they never use scanner; on the other hand % 35.2 (64 people) of them said that they use it rarely, and % 17.6 (32 people) claimed to use it regularly, finally % 8.2 (15 people) stated that they use it frequently.

**Digital Camera:** % 43.2 (76 people) of the physical education teachers who took the survey stated that they never use video; whereas % 27.3 (48 people) of them said that they use it rarely, and % 18.8 (33 people) claimed to use it regularly, finally % 10.8 (19 people) stated that they use it frequently.

**CD-ROM:** % 33.9 (60 people) of the physical education teachers who took the survey stated that they never use CD-ROM; whereas % 24.3 (43 people) of them said that they use it rarely, and % 26.6 (47 people) claimed to use it regularly, finally % 15.3 (27 people) stated that they use it frequently.

**Data Show:** % 61.8 (107 people) of the physical education teachers who took the survey stated that they never use data show; whereas % 23.7 (41 people) of them said that they use it rarely, and % 9.2 (16 people) claimed to use it regularly, finally % 5.2 (9 people) stated that they use it frequently.

**Multimedia:** % 56.2 (100 people) of the physical education teachers who took the survey stated that they never use multimedia; on the other hand % 24.7 (44 people) of them said that they use it rarely, and % 12.9 (23 people) claimed to use it regularly, finally % 6.2 (11 people) stated that they use it frequently.

**Printer:** % 20.6 (37 people) of the physical education teachers who took the survey stated that they never use printers; whereas % 19.4 (35 people) of them said that they use them rarely, and % 27.8 (50 people) claimed to use them regularly, finally % 32.2 (58 people) stated that they use them frequently.

**Laptop:** % 69.8 (134 people) of the physical education teachers who took the survey stated that they never use laptops; whereas % 10.9 (21 people) of them said that they use them rarely, and % 9.9 (19 people) claimed to use them regularly, finally % 9.4 (18 people) stated that they use them frequently.

**Narration:** % 5.9 (11 people) of the physical education teachers who took the survey stated that they never use narration; whereas % 28.3 (53 people) of them said that they use it rarely, and % 47.6 (89 people) claimed to use it regularly, finally % 18.2 (34 people) stated that they use it frequently.

**Discussion:** % 4.3 (8 people) of the physical education teachers who took the survey stated that they never use discussion; on the other hand % 23.4 (43 people) of them said that they use it rarely, and % 57.6 (106 people) claimed to use it regularly, finally % 14.7 (27 people) stated that they use it frequently.

**Sample Situation:** % 3.7 (7 people) of the physical education teachers who took the survey stated that they never use sample situation; whereas % 5.9 (11 people) of them said that they use it rarely, and % 55.6 (104 people) claimed to use it regularly, finally % 34.8 (65 people) stated that they use it frequently.

**Demonstration:** % 1.1 (2 people) of the physical education teachers who took the survey stated that they never use demonstration; whereas % 2.1 (4 people) of them said that they use it rarely, and % 27.1 (52 people) claimed to use it regularly, finally % 68.1 (131 people) stated that they use demonstration frequently.

**Problem Solving:** % 7.2 (13 people) of the physical education teachers who took the survey stated that they never use problem solving; on the other hand % 20 (36 people) of them said that they use it rarely, and % 42.8 (77 people) claimed to use it regularly, finally % 30 (54 people) stated that they use it frequently.

**Group-work:** % 2.7 (5 people) of the physical education teachers who took the survey stated that they never use group-work; whereas % 9.6 (18 people) of them said that they use it rarely, and % 41.2 (77 people) claimed to use it regularly, finally % 46.5 (87 people) stated that they use it frequently.

**Experimentation:** % 4.8 (9 people) of the physical education teachers who took the survey stated that they never use discussion; whereas % 24.7 (46 people) of them said that they use it rarely, and % 45.2 (84 people) claimed to use it regularly, finally % 25.3 (47 people) stated that they use it frequently.

**Computer Laboratory:** % 56.5 (100 people) of the physical education teachers who took the survey stated that they never use computer laboratory; on the other hand % 27.7 (49 people) of them said that they use it rarely, and % 10.7 (19 people) claimed to use it regularly, finally % 5.1 (9 people) stated that they use it frequently.

**Science Laboratory:** % 83 (146 people) of the physical education teachers who took the survey stated that they never use science laboratory; whereas % 11.9 (21 people) of them said that they use it rarely, and % 3.4 (6 people) claimed to use it regularly, finally % 1.7 (3 people) stated that they use it frequently.

**Research:** % 18.7 (34 people) of the physical education teachers who took the survey stated that they never use research; on the other hand % 36.8 (67 people) of them said that they use it rarely, and % 37.9 (69 people) claimed to use it regularly, finally % 6.6 (12 people) stated that they use it frequently.

**Discovery:** % 41.7 (75 people) of the physical education teachers who took the survey stated that they never use discovery; whereas % 28.9 (52 people) of them said that they use it rarely, and % 21.1 (38 people) claimed to use it regularly, finally % 8.3 (15 people) stated that they use it frequently.

**Reinforcement:** % 18.8 (34 people) of the physical education teachers who took the survey stated that they never use reinforcement; on the other hand % 24.3 (44 people) of them said that they use it rarely, and % 37 (67 people) claimed to use it regularly, finally % 18.8 (36 people) stated that they use it frequently.

**Reward:** % 5.9 (11 people) of the physical education teachers who took the survey stated that they never use reward; whereas % 10.8 (20 people) of them said that they use it rarely, and % 40.5 (75 people) claimed to use it regularly, finally % 42.7 (79 people) stated that they use it frequently.

**Clue:** % 10.9 (20 people) of the physical education teachers who took the survey stated that they never use clues; whereas % 28.4 (52 people) of them said that they use them rarely, and % 41.5 (76 people) claimed to use them regularly, finally % 19.1 (35 people) stated that they use clues frequently.

**Feedback:** % 14.9 (27 people) of the physical education teachers who took the survey stated that they never use feedback; on the other hand % 29.3 (53 people) of them said that they use it rarely, and % 32.6 (59 people) claimed to use it regularly, finally % 23.2 (42 people) stated that they use it frequently.

**Brain Storming:** % 12.8 (23 people) of the physical education teachers who took the survey stated that they never use brain storming; whereas % 29.1 (52 people) of them said that they use it rarely, and % 38 (68 people) claimed to use it regularly, finally % 20.1 (36 people) stated that they use it frequently.

**Question-Answer:** % 4.3 (8 people) of the physical education teachers who took the survey stated that they never use question-answer; on the other hand % 9.6 (18 people) of them said that they use it rarely, and % 53.5 (100 people) claimed to use it regularly, finally % 32.6 (61 people) stated that they use it frequently.

**Role-play:** % 13.2 (24 people) of the physical education teachers who took the survey stated that they never use role-play; on the other hand % 26.4 (48 people) of them said that they use it rarely, and % 36.3 (66 people) claimed to use it regularly, finally % 24.2 (42 people) stated that they use it frequently.

**Simulation:** % 14.8 (27 people) of the physical education teachers who took the survey stated that they never use simulation; whereas % 21.3 (39 people) of them said that they use it rarely, and % 39.9 (73 people) claimed to use it regularly, finally % 24 (44 people) stated that they use it frequently.

**Educational Games:** % 1.6 (3 people) of the physical education teachers who took the survey stated that they never use educational games; on the other hand % 3.8 (7 people) of them said that they use them rarely, and % 24.5 (47 people) claimed to use them regularly, finally % 66.7 (128 people) stated that they use educational games frequently.

**Practice:** % 3.2 (6 people) of the physical education teachers who took the survey stated that they never use practice; whereas % 10.8 (20 people) of them said that they use it rarely, and % 24.3 (48 people) claimed to use it regularly, finally % 61.6 (114 people) stated that they use it frequently.

**Role-play:** % 13.2 (24 people) of the physical education teachers who took the survey stated that they never use role-play; on the other hand % 26.4 (48 people) of them said that they use it rarely, and % 36.3 (66 people) claimed to use it regularly, finally % 24.2 (42 people) stated that they use it frequently.

**Behavioral Approach:** % 8 (14 people) of the physical education teachers who took the survey stated that they never use behavioral approach; whereas % 27.4 (48 people) of them said that they use it rarely, and % 42.3 (74 people) claimed to use it regularly, finally % 22.3 (39 people) stated that they use it frequently.

**Cognitive Approach:** % 11.7 (20 people) of the physical education teachers who took the survey stated that they never use cognitive approach; on the other hand % 29.2 (50 people) of them said that they use it rarely, and % 42.1 (72 people) claimed to use it regularly, finally % 17 (29 people) stated that they use it frequently.

**Constructivist Approach:** % 12.4 (21 people) of the physical education teachers who took the survey stated that they never use constructivist approach; whereas % 25.9 (44 people) of them said that they use it rarely, and % 46.5 (79 people) claimed to use it regularly, finally % 15.3 (26 people) stated that they use it frequently.

## STATISTICAL ANALYSES

After the percentages of using educational technologies of physical education teachers are found out, it was uncovered whether any difference exists according to gender, age location of service, years spent in service, level of education, and whether in-service training has been taken or not. T-test method was used for age, level

of education, and in-service training, while for other variables ANOVA was preferred. There, the alpha value ( $\alpha$ ) was taken as 0.05. Comparative analyses were conducted according to this value.

### **T-Test Gender Analysis**

The values for which the alpha value is  $<0.05$  are as below according to the analysis conducted.

-Educational Games	0.043
-Practice	0.003
-Behavioral Approach	0.004

**Conclusion:** According to this result, female teachers use the above educational technologies meaningfully more compared to male ones at the level of  $p<0.05$ .

### **T-Test Educational Level Analysis**

The values for which the alpha value is  $<0.05$  are as below according to the analysis conducted.

-Narration	0.035
-Problem-solving	0.006

**Conclusion:** According to the result above, teachers who have completed their master's degree use narration and problem solving methods meaningfully more compared to those who haven't at the level of  $p<0.05$ .

### **T-Test In-Service Training Analysis**

The values for which the alpha value is  $<0.05$  are as below according to the analysis conducted.

-Large Picture	0.044
-CD	0.007
-Film	0.001
-PowerPoint	0.048
-Discovery Method	0.005
-Clue	0.049
-Cognitive Approach	0.018

**Conclusion:** According to their result, teachers who have taken in-service training use the educational technologies above meaningfully more compared to those who haven't at the level of  $p<0.05$ .

### **ANOVA Results for The Age Variable**

*Results Obtained At The Level of  $p<0.05$ :*

#### **-The Use of Books 0.033**

According to the LSD test results, people at the age of 25 or below use the book meaningfully more than those between 36-40, those at the age of 25 and below than those at the age of 41 and above, and finally those between 31-35 than those between 36 and 40.

#### **-Group-work 0.003**

According to the LSD test results, people at the age of 41 and older use the group-work meaningfully more than those 25 and below, those between 31-35 than those between 36-40 and 25 and below, those between 26-30 than those between 36-40 and at the age 25 and below.

#### **-Individual Study 0.001**

According to the LSD test results, people at the age of 25 or below use the individual study meaningfully more than those between 26-30 and 36-40, those between 31-35 than those between 36-40, and finally those 41 and older than those between 36 and 40.

### **ANOVA Results for Years in Service**

*Results Obtained At The Level of  $p<0.05$ :*

#### **-Large Picture 0.020**

According to the results of LSD test teachers who worked 11-15 years use large pictures meaningfully more than teachers who worked 0-5 years and 6-10 years.

#### **-Book 0.047**

According to the results of LSD test teachers who worked 0-5 years use books meaningfully more than teachers who worked 16-20 years and 6-10 years use it meaningfully more than 16-20 years.

#### **-Search Engines 0.030**



According to the results of LSD test teachers who worked 11-15 years use search engines meaningfully more than teachers who worked 6-10 years and 16-20 years.

**-Discussion Method 0.012**

According to the results of LSD test teachers who worked 6-10 years use discussion method meaningfully more than teachers who worked 0-5 years and 11-15 years use it meaningfully more than 0-5 years.

**-Demonstration Method 0.049**

According to the results of LSD test teachers who worked 6-10 years use demonstration method meaningfully more than teachers who worked 16-20 years.

**-Problem Solving Method 0.026**

According to the results of LSD test teachers who worked 6-10 years use problem solving method meaningfully more than teachers who worked 0-5 years; 11-15 years use it meaningfully more than 0-5 years and 21 and more years use it meaningfully more than 0-5 years.

**-Individual Studying Method 0.017**

According to the results of LSD test teachers who worked 6-10 years use individual studying method meaningfully more than teachers who worked 11-15 years and 16-20 years; and 21 and more years use it meaningfully more than 16-20 years.

**-Research Method 0.008**

According to the results of LSD test teachers who worked 6-10 years use research method meaningfully more than teachers who worked 0-5 years and 21 and more years use it meaningfully more than 16-20 years.

**-Behavioral Approach 0.006**

According to the results of LSD test teachers who worked 0-5 years use behavioral approach meaningfully more than teachers who worked 6-10 years, 16-20 years and 21 and more years.

**COMPARISON OF THE AVERAGES**

Certain analyses were conducted based on the general classification levels of the technologies used. The aim of these analyses is to determine how frequently the teachers use educational technologies of that specific level. Therefore, the existing educational technologies were divided into 6 groups as Technologies with Basic Structure, Internet Based Technologies, Audio Visual Technologies, Computer Technologies, the Dimension of Learning-Teaching Methods, and the Theoretical Dimension.

**T-Test Results for Gender Variable (Dimension of Learning-Teaching Methods)**

Gender	N	X	S	Sd	T	p
Female	67	2,9020	,44736	,05465	2,214	,028*
Male	116	2,6324	,51090			

The analyses conducted show that woman use learning methods meaningfully more than men at the level of  $p < 0.005$ .

**ANOVA Results for the Variable of Years in Service (Theoretical Dimension)**

The Source of Variance	The Total of Squires	Sd	The Averages of Squires	F	p
Inter-groups	5,514	4	1,378	2,526	,043*
Inner-groups	92,231	169	0,546		
Total	97,745	173			

At the end of the analysis, a result at the level of  $p < 0.05$  was obtained. The results of LSD test carried out to find out which groups this figure originates from are as follows:

Years in Service	N	Average
0-5	32	247,71
6-10	103	109,47
11-15	104	102,71
16-20	9	1,9630
21 ve üzeri	6	2,5556

According to the results of LSD test teachers who worked 0-5 years use behavioral, cognitive and constructivist approaches meaningfully more than teachers who worked 16-20 years, 6-10 years use it meaningfully more than 16-20 years, and finally 11-15 years use it meaningfully more than 16-20 years at the level of  $p < 0.05$ .

## CONCLUSION AND SUGGESTIONS

In this study, the level of educational technology usage of 46 female and 145 male physical education teachers working in various cities of Turkey was studied and changes in these teachers' usage of educational technology. Besides, changes in these teachers' usage of technology according to gender, level of education, age, in-service training and years in service are studied.

T-test was implemented according to gender, in-service training and educational level of individuals who participated in the study. When studied in terms of their gender, it is found that female teachers use technologies of educational games ( $p=0.043$ ), practice ( $p=0.003$ ) and behavioral approach ( $p=0.004$ ) meaningfully more than male ones.

As to the level of using educational technologies of physical education teachers on graduate and graduate level, it can be said that teachers with a master's degree use narration technology on the level of  $p=0.035$  and problem-solving technology at the level of  $p=0.006$  more than undergraduate teachers. T-test results about in-service training of physical education teachers who participated in the study show that physical education teachers who took in-service training use large picture ( $p=0.044$ ), CD ( $p=0.007$ ), film ( $p=0.001$ ), PowerPoint ( $p=0.048$ ), discovery ( $p=0.005$ ), clue ( $p=0.049$ ), cognitive approach ( $p=0.018$ ) meaningfully more than those who did not take in-service training.

When we take the physical education teachers' level of using educational technologies according to their age trails, we see that there is a meaningful difference between age groups in book usage on the level of  $p=0.033$ , group-work on the level of  $p=0.003$  and individual study on the level of  $p=0.001$ . Mostly the age group of 25 and below use books, the group of 41 and above use group study and teachers at the age 25 and below use individual study technique.

The most meaningful difference about the level of using educational techniques of physical education teachers was found in years in service. According to the ANOVA conducted according to the years in service of physical education teachers, meaningful difference was found in large pictures ( $p=0.020$ ), book ( $p=0.047$ ), search engines ( $p=0.030$ ), discussion ( $p=0.012$ ), demonstration ( $p=0.049$ ), problem-solving ( $p=0.026$ ), individual study ( $p=0.017$ ), research ( $p=0.008$ ), behavioral approach ( $p=0.006$ ).

An average score was obtained from the responses of individuals related to their level of using educational technology and this average score was studied according to the individuals' demographic characteristics. According to the analyses, it is found that physical education teachers' level of using educational technologies differs according to their gender and years in service.

A meaningful difference was found in the level of  $p=0.28$  ( $p<0.05$ ) according to t-test conducted between the average scores of physical education teachers about gender and educational technology usage. Female physical education teachers ( $X=2.9020$ ) use educational technologies more than male teachers ( $X=2.6324$ ).

ANOVA was used in order to study the relation between teachers' years in service and average scores they get from educational technologies. According to the ANOVA, a meaningful difference was found among groups on the level of  $p>0.043$ . Those teachers who worked for 0-5 years were the group that used educational technologies most ( $X=247.71$ ) and those who worked for 21 years and more were the group that used them most ( $X=2.5556$ ).

The methods that physical education teachers most frequently use are demonstration and educational games. Such methods bear importance since they address to all the senses. However, it is also necessary that technological facilities be included in education and teaching activities and adapt to the developing technology by means of various training activities. To achieve this, physical education teachers must be provided with tutorial CDs about the lessons covered and it is necessary that materials used by the teachers less frequently such as data-show, CD, over-head projector, be used during this process. It is certain that students' success will increase in a lesson supported by audio-visual materials.

Computer technology provides people with unbelievable facilities thanks to the simulation programmes developed in recent years for example, a programme produced in the area of physical education may enable us to reach a decision by assessing various possibilities at once such as how much an athlete with a certain amount of weight, whose data is put into the computer can exercise and to which level they can succeed and reduce the risk of injuries.

We have a comprehensive, interactive, three-dimensional simulation programme on human anatomy. With this programme the data of your athlete or student are loaded and all the possibilities required so that they can achieve the expected physical and motor development are tested, and thus the results can be obtained in shortest time with minimal loss.

From now on, a lifestyle interconnected with and in line with technology and it is essential that we use and spread the use of the technological tools, which utilize the opportunities and possibilities that make life easier, and which save time.

As we can do sports at every age, technology can also be used. It will be appropriate to add lifelong technology and technology at every age to sports slogans like “lifelong sports and sports for everybody” and to reflect these in their lifestyles.

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