

Training Strategies for Using Modern Technology in Teaching Physical and Sports Activities

Tahar Cherrouf¹, Gaied Chortane Sabri¹, Rym Dridi¹, Ben Ezzeddine Lamia¹, Thouraya Mhenni¹, Khalifa Riadh¹

¹ Higher Institute of Sport and Physical Education, Ksar-Said, University of Manouba, Tunis 2010, Tunisia.

ABSTRACT

This study aims at determining the training strategies of sports and physical education teachers related to the skills of using modern technology in teaching, by identifying the training needs of these teachers, and assisting educational training inspectors to develop training programs to address the real necessities of physical education instructors by applying modern skills. Besides, it seeks to help the inspectors to prepare teachers of education before working at universities and colleges in order to develop appropriate education programs and courses according to the actual needs of students. The importance of this research also revolves around both the search for developing the physical education and sports curricula in terms of their reliance on modern methods used for the teaching technics, and the orientation towards identifying weaknesses and shortcomings in the programs of preparing and training educators and thus heading to the adoption of modern technology in the teaching process.

Keywords: Modern technology, physical education and sports, teacher of physical education, teaching, training, training needs

INTRODUCTION

The teacher is considered as the cornerstone of the educational process, as he plays a prominent leading role in this, and bears a great burden in an attempt to provide his students with knowledge, skills and experiences inside and outside the classroom. There is no dispute about the importance of his active role, as he forms a role model for his students. Accordingly, the different aspects of the teacher's personality affect many of the behavioral patterns practiced by his students. In this respect, the task of preparing teachers for the requirements of the profession on the one hand, and the necessities of the modern era on the other hand, has become an

educational issue that is receiving increasing attention in many contemporary educational systems. Hence, the development of institutions and their underlying systems aims primarily at raising their educational efficiency to meet the new needs of society, and to enable them to produce educators with high scientific and professional qualifications. All of these considerations reflected the importance of training in an attempt to overcome those difficulties and obstacles on the one hand, and the pursuit of coping with development and progress on the other hand, which reflects the need for training programs and their continuity. (Saada Youcef, 1993, p. 33).

Through the aforementioned, the problem of the study emerges in the main question:

Are the training strategies of physical education and sports' teachers related to the skills of using modern technology in teaching?

In order to answer this question, the researcher developed the following sub-questions:

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Address for correspondence:

Tahar Cherrouf, Ph.D student. Manouba University, Higher Institute of Sports and Physical Education, Kasr El-Said.
E-mail: dr.taharcherrouf@gmail.com

Partial Questions

1. What is the degree of importance/the extent of the need for training on the skills of using modern technology in teaching?
2. Is there a statistically significant correlation between the degree of importance and the extent of the need for training on the skills of using modern technology in teaching?

General Hypothesis

There are urgent needs for teachers of physical education and sports related to the skills of using modern technology in teaching.

Partial Hypotheses

1. There is an importance and need for training on the skills of using modern technology in teaching.
2. There is a statistically significant correlation between the degree of importance and the need for training on the skills of using modern technology in teaching.

Study Objectives

1. Determining the training needs of teachers of physical education and sports related to the skills of using modern technology in teaching.
2. Assisting the educational training inspectors to develop training programs according to the actual training needs of physical education and sports' teachers related to the skills of using modern technology in teaching.
3. Helping the inspectors to prepare education teachers before working at universities and colleges to develop the vocabulary of the modern technology course in appropriate teaching according to the actual needs of the students.

Study Approach

The researchers used the descriptive method which suits the nature and objectives of the study. The descriptive approach is not limited to describing the phenomenon and collecting information and data about it. Rather, this information must be classified, organized, and expressed quantitatively and qualitatively so that this leads to an understanding of the relationships of this phenomenon with other phenomena.

Study Community

The study population consisted of 550 teachers of physical education for the intermediate stage of Algiers fundamental schools, based on the statistics of the users' service in the administration of the Directorate of National Education.

Study Sample

The sample of the study consisted of physical education teachers in the middle schools of the state of Tizi Ouzou. The study sample was randomly selected among the institutions located in the Central Directorate of Education, the district of Sidi M'hamed, the district of Ain El Hammam, the district of Hussein Dey, and the district of Ain El Na'adja, and the total number of the research sample amounted to 114 teachers, which represents 20% of the total community.

Study Tool

The questionnaire was used as a tool for this study, as it is one of the most widely used scientific research tools, as well as for its relevance to the nature of this study which employs the descriptive approach.

Steps to Design and Construct the Study Tool

The following steps were taken in designing and building the study tool (the questionnaire).

First: Determining the sources of building the questionnaire through:

1. Reviewing many previous researches and studies related to the study problem, as well as education-oriented journals.
2. Interviewing a group of specialists in this field to benefit from their expertise.

Second: Determining the dimensions of the questionnaire: the questionnaire was designed with the aim of knowing the following:

1. The degree of importance/extent of the need for training on computer skills and its components in teaching physical education and sports.
2. The degree of importance/the extent of the need for training on the skills of using the Internet in teaching physical education and sports.

Third: The questionnaire: was constructed as follows:

1. Based on the study problem, objectives and questions, and in light of the theoretical framework,

Table 1: Frequencies and percentages of computer and its accessories' skills (degree of importance – extent of need)

Number	Skill	Degree of importance						Extent of need to train on it					
		Not important		Important		Very important		Low		Medium		High	
		Fr	%	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%
01	Identifying the components of a computer and its attached devices.	2	1.8	60	57.0	47	41.2	1	0.9	42	36.8	71	62.3
02	Knowing the specifications of a good computer.	8	7.0	64	56.1	42	36.8	5	4.4	51	44.7	58	50.9
03	Identifying the importance of using computers in physical education and sports lessons.	5	4.4	57	50.0	52	45.6	2	1.8	38	33.3	74	64.9
04	Preparing connections to operate the computer and its accessories for use.	12	10.5	53	46.5	49	43.0	7	6.1	47	41.2	61	52.5
05	Turning on and off the computer and its accessories.	4	3.5	47	40.4	64	57.1	8	7.0	37	32.5	69	60.5
06	Identifying devices attached to the computer.	9	7.9	51	44.7	54	47.4	4	3.5	44	38.6	66	57.9
07	Defining terms and abbreviations used in the field of computers.	12	10.5	67	58.8	35	3.7	3	2.6	62	54.4	49	43.0
08	Dealing with desktop components.	5	4.4	59	51.8	50	43.9	4	3.5	39	34.2	71	62.3
09	Downloading various programs on the computer.	6	5.3	42	36.8	66	57.9	3	2.6	29	25.4	82	71.9
10	Using different input units such as (keyboard, mouse, scanner, etc ...).	4	3.5	42	37.8	28	59.6	3	2.6	28	24.6	83	72.8
11	Using different output units such as (screen, printer, etc...).	4	3.5	44	38.6	66	57.9	2	1.8	30	26.3	82	71.9
12	Managing, saving and renaming files.	3	2.6	44	38.6	67	58.8	3	2.6	25	21.9	87	75.4
13	Managing disks such as: (selecting disk types and showing, copying and formatting disks).	8	7.0	53	46.5	53	46.5	4	3.5	38	33.3	72	63.2
14	Dealing with disk players (Disk Drives).	7	6.1	67	58.8	40	35.1	7	6.1	44	38.6	63	55.3
15	Dealing with storing units (Memory Units).	9	7.9	59	51.8	46	40.4	8	7.0	42	36.8	64	56.1
16	Installing and removing programs from the operating system.	12	10.5	47	41.2	55	48.2	11	9.6	31	27.2	72	63.2
17	Using compression and decryption programs such as WinZip.	10	8.8	58	5.9	46	40.4	7	6.1	30	30.7	72	63.2
18	Detecting and getting rid of viruses.	6	5.3	32	27.1	76	66.7	4	3.5	23	20.2	87	76.3
19	Using word processing software (Word).	1	0.9	34	29.8	79	69.3	2	1.8	21	18.4	91	79.8
20	Using spreadsheet program (Excel).	26	22.8	51	44.7	37	32.5	15	13.2	44	38.6	55	48.2
21	Using Power Point presentation software.	3	2.6	44	38.6	67	58.8	3	2.6	24	21.1	87	76.3
22	Using multimedia program.	25	17.5	58	5.9	36	31.6	13	11.4	44	38.6	57	50.5
23	Overcoming the different technical problems encountered during the usual use of the computer and its programs.	10	8.8	59	51.8	45	39.5	5	4.4	47	41.2	62	54.4
24	Considering the general rules of security and safety with computers and their accessories.	6	5.3	50	43.9	58	5.9	4	3.5	44	38.6	66	57.9

Table 2: Arithmetic averages and relative importance of computer use and supplies. (The degree of importance – extent of need)

Number	Skill	Degree of importance			Extent of need to train on it		
		Arithmetic average	Relative importance	Training	Arithmetic average	Relative importance	Training
01	Identifying the components of a computer and its attached devices.	2.39	79.67	12	2.61	87.00	9
02	Knowing the specifications of a good computer.	2.30	76.67	20	2.46	82.00	21
03	Identifying the importance of using computers in physical education and sports lessons.	2.41	80.33	10	2.63	87.67	8
04	Preparing connections to operate the computer and its accessories for use.	2.22	77.33	16	2.47	82.33	20
05	Turning on and off the computer and its accessories.	2.53	84.33	7	2.54	84.67	13
06	Identifying devices attached to the computer.	2.39	79.67	11	2.54	84.67	14
07	Defining terms and abbreviations used in the field of computers.	2.20	73.33	22	2.40	80.00	22
08	Dealing with desktop components.	2.39	79.67	13	2.09	86.33	11
09	Downloading various programs on the computer.	2.53	84.33	8	2.69	89.67	7
10	Using different input units such as (keyboard, mouse, scanner, etc ...).	2.56	85.33	3	2.70	90.00	5
11	Using different output units such as (screen, printer, etc...).	2.56	84.67	6	2.70	90.00	6
12	Managing, saving and renaming files.	2.56	85.33	4	2.73	91.00	3
13	Managing disks such as: (selecting disk types and showing, copying and formatting disks).	2.39	79.67	14	2.60	86.67	10
14	Dealing with disk players (Disk Drives).	2.29	76.33	21	2.49	83.00	18
15	Dealing with storing units (Memory Units).	2.32	77.33	17	2.49	83.00	19
16	Installing and removing programs from the operating system.	2.38	79.33	10	2.54	84.67	10
17	Using compression and decryption programs such as WinZip.	2.32	77.33	18	2.57	85.67	12
18	Detecting and getting rid of viruses.	2.61	87.00	2	2.73	91.00	4
19	Using word processing software (Word).	2.64	88.00	1	2.78	92.67	1
20	Using spreadsheet program (Excel).	2.10	70.00	24	2.30	78.33	24
21	Using Power Point presentation software.	2.56	85.33	5	2.74	91.33	2
22	Using multimedia program.	2.14	71.33	23	2.39	79.67	23
23	Overcoming the different technical problems encountered during the usual use of the computer and its programs.	2.31	77.00	19	2.50	83.33	17
24	Considering the general rules of security and safety with computers and their accessories.	2.46	82.00	9	2.54	84.67	16
Overall Average		2.40	80.05	-	2.57	85.80	-
Spearman Brown Correlation Coefficient		0.926 A statistical function at a significance level of 0.05					

previous studies and the aforementioned steps, the researcher formulated the questionnaire in its initial form, and then presented it to the research supervisor in order to express his opinion and observations.

2. It was presented to a group of reviewers to express their opinions and observations about

the paragraphs of the questionnaire in terms of relevance to the part to which they belong and the clarity of the wording.

3. The questionnaire was presented in its final form.

The study questionnaire involved the following two parts:

Table 3: Order of importance of computer-use skills (based on the proportion of importance)

Order	Skill	Relative importance
01	Using word processing software (Word).	%88.00
02	Ability to detect and get rid of viruses.	87.00%
03	Using different input units such as (keyboard, mouse, scanner).	85.33%
04	Ability to manage files such as: (create, move, erase, save and rename files).	85.33%
05	Using Power Point presentation software.	85.33%
06	Using different output units such as: (screen, printer, etc.).	84.67%
07	Ability to turn on and off the computer and its accessories.	84.33%
08	Can download various programs on the computer.	84.33%
09	Considering the general rules of security and safety with computers and their accessories.	82.00%

Table 4: Order of the need for training on computer skills (based on the proportion of importance)

Order	Skill	Relative importance
01	Using word processing software (Word).	92.67%
02	Using Power Point presentation software.	91.33%
03	Ability to manage files such as: (create, move, erase, save and rename files).	91.00%
04	Ability to detect and get rid of viruses.	91.00%
05	Using different input units such as (keyboard, mouse, scanner).	91.00%
06	Using different output units such as: (screen, printer, etc.).	91.00%
07	Can download various programs on the computer.	89.67%
08	Determining the importance of computer use in physical education lessons.	87.67%
09	Determining the components of the computer and the devices attached to it.	87.00%

- The first part: skills of using computer and its accessories (importance – need). It includes 24 paragraphs.

The second part: skills of using Internet (importance – need). It includes 19 items.

The researcher used the triple scale, and the answer score was determined as follows:

- Very Important/High – (3) marks.
- Important/Medium - (2) marks.
- Unimportant/low – (1) mark.

In light of this, the following criterion was determined to judge the degree of response of the study sample members in terms of (importance and the extent of the need for training) as follows:

- The value of the arithmetic mean (from 1-1.66) (less than 50%) is a low score.
- The value of the arithmetic mean (from 1.67-2.33) (50-54%) is a medium score.
- The value of the arithmetic mean (from 2.34-3) (70-100%) is a high score.

DISCUSSION AND INTERPRETATION OF THE RESULTS

The results of the First Hypothesis

The purpose of the first hypothesis

Knowing the extent of need/degree of importance for training on computer skills and its accessories in teaching physical education and sports.

Looking at Table (1) in general:

We see that the percentage of the degree of importance and the extent of the need for training on it for all computer skills are close, which means that the two degrees of importance and the degree of need for training are similar. We also note the high percentage rate of the degree of importance (important and very important), and the extent of the need for training in those skills (medium and high), which means that there is an urgent need for the sample members to be trained on computer skills.

This result is consistent with the results of the study of: Al-Batea (2001), which showed the sample's need for training on the use of the computer, and Al-Dosari study (2005), which demonstrated that the most important training needs for teachers are: managing and organizing files within folders and using the Word processing program (Microsoft Word). And the study of Al-Ghamdi (2007), which revealed that there is a high need for teachers to use computers and their accessories.

* The study used frequencies, percentages, arithmetic averages and the relative importance of each skill included in the second part, which measures the degree of importance/the extent of the need for training on Internet skills in teaching physical education, and the Spearman-Brown correlation

coefficient was used to find the relationship between the degree of importance and the extent of the need for training on those skills.

RESULTS OF THE SECOND HYPOTHESIS

Purpose of the Second Hypothesis

Exploring if there is a statistically significant correlation between the degree of importance and the need for training on using computer and its accessories.

Through reviewing the previous results of computer usage skills it appears that the most important skills represented in the use of text processing program, the ability to detect and get rid of viruses, the use of various input units, the ability to manage files, and the use of the presentation program.

Whereas the need for training on computer usage skills is represented in the use of the text processing program, the use of the presentation program, the ability to manage files, the ability to detect and dispose viruses,

Table 5: Frequencies and percentages of the Internet usage skills (importance – extent of need)

Number	Skill	Degree of importance						Extent of need to train on it					
		Not important		Important		Vey important		low		Medium		High	
		Fr	%	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%
01	Familiar with the concept of Internet.	2	1.8	50	43.9	62	54.4	3	2.6	36	31.6	75	65.8
02	Determining the importance of using the Internet in physical education lessons.	9	7.9	53	46.5	52	45.6	4	3.5	42	37.7	67	58.8
03	Identifying electronic information sources.	12	10.5	57	50.	45	39.5	7	6.1	55	48.2	52	45.6
04	Using electronic information sources to facilitate the educational process related to physical education.	10	8.8	50	43.9	54	47.4	7	6.1	42	36.8	65	57.0
05	Identifying physical education sites and forums.	3	2.6	59	51.8	52	45.6	4	3.5	52	45.6	58	50.9
06	The ability to contact universities, libraries and research centers and get acquainted to their forums.	12	14.0	62	54.4	36	31.6	11	9.6	55	48.2	48	42.1
07	Preparing a computer to connect to the Internet.	4	3.5	53	46.5	57	50.0	3	2.6	36	31.6	75	65.8
08	Using an Internet browser program such as: (Internet Explorer).	7	6.1	54	47.4	53	46.5	7	6.1	39	34.2	68	59.6
09	Using search engines such as: (Google).	6	5.3	40	35.1	68	59.6	11	9.6	30	26.3	73	64.0
10	Changing the start page of the Internet browser.	19	16.7	58	50.9	37	32.5	10	13.2	49	43.0	50	43.9
11	Identifying the basic terms and symbols used in the Internet.	8	7.0	57	50.0	49	43.0	5	4.4	45	39.5	64	56.1
12	Creating an e-mail.	6	5.3	35	30.7	73	64.0	6	5.3	31	27.2	77	67.0
13	Using an e-mail.	3	2.6	35	30.7	76	66.7	4	3.5	32	28.1	78	68.4
14	Using mailing lists.	17	14.9	58	50.9	39	34.2	11	9.6	56	49.1	47	41.2
15	Using the newsgroups.	30	26.3	58	50.9	26	22.8	22	19.3	56	49.1	36	31.6
16	Chatting.	38	33.3	53	46.5	23	20.2	31	27.2	57	50.0	26	22.8
17	Can register and participate in educational forums related to physical education.	5	4.4	54	47.4	55	48.2	7	6.1	37	32.5	70	61.4
18	Ability to download files and safeguard them from the w.w.w service.	7	6.1	42	36.8	60	57.0	6	5.3	35	30.7	73	64.0
19	Considering what is stipulated in the network ethics of the rules and behaviors that must be followed in dealing with the network.	7	6.1	40	35.1	67	58.8	10	8.8	48	42.1	56	49.1

the use of different input units, and the overall average of relative importance has reached (85.80%), which represents a high need.

In the light of information from (Table 3), the value of Spearman Brown indicated that there is a strong link between each of the importance of computer usage skills and the need for training on them, where the value of the correlation coefficient amounted to (0.926), a statistically valuable value at a significant level of (0.05) indicating a strong relationship between the importance of computer usage skills and the need for those skills.

The knowledge of whether there is a statistically significant relationship between the degree of

importance and the need for training on the use of the Internet skills in teaching physical and sports' education.

In view of (Table 5), the following is apparent:

We observe that the percentage of the importance degree and of the need for training on them to collect Internet skills is close, which reflects a similarity between the degree of importance and need for training. We also note the high rate of importance (important and very important) and to the need for training on those skills (medium and high). This means that there is an urgent need for the sample members to train on Internet skills.

Table 6: Arithmetic averages and relative importance of Internet usage skills (importance – extent of need)

Number	Skill	Degree of importance			Extent of need to train on it		
		Arithmetic Average	Relative Importance	Training	Arithmetic Average	Relative Importance	Training
01	Familiar with the concept of Internet.	2.53	84.21	4	2.63	87.76	2
02	Determining the importance of using the Internet in physical education lessons.	2.36	79.24	12	2.55	85.09	6
03	Identifying electronic information sources.	2.29	76.32	14	2.39	79.82	14
04	Using electronic information sources to facilitate the educational process related to physical education.	2.39	79.53	11	2.01	83.63	11
05	Identifying physical education sites and forums.	2.43	80.99	9	2.47	82.46	12
06	The ability to contact universities, libraries and research centers and get acquainted to their forums.	2.18	72.01	16	2.22	77.49	10
07	Preparing a computer to connect to the Internet.	2.46	82.16	7	2.63	87.76	3
08	Using an Internet browser program such as: (Internet Explorer).	2.40	80.12	10	2.54	84.50	8
09	Using search engines such as: (Google).	2.54	84.80	3	2.54	84.80	9
10	Changing the start page of the Internet browser.	2.16	71.93	17	2.31	76.90	17
11	Identifying the basic terms and symbols used in the Internet.	2.36	78.60	13	2.52	83.92	10
12	Creating an e-mail.	2.59	86.26	2	2.62	87.43	4
13	Using an e-mail.	2.64	88.01	1	2.60	88.30	1
14	Using mailing lists.	2.19	73.10	10	2.32	77.49	16
15	Using the newsgroups.	1.96	65.50	18	2.12	70.76	18
16	Chatting.	1.87	62.28	19	1.96	65.20	19
17	Can register and participate in educational forums related to physical education.	2.44	81.29	8	2.55	85.09	7
18	Ability to download files and safeguard them from the w.w.w service.	2.01	83.63	6	2.09	86.26	5
19	Considering what is stipulated in the network ethics of the rules and behaviors that must be followed in dealing with the network.	2.53	84.21	2	2.40	80.12	13
Overall Average		2.36	78.67	-	2.45	81.83	-
Spearman Brown Correlation Coefficient		0.837 at a significance level of 0.05					

This result is consistent with the results of: Albatea (2001), which showed the need for training on ways to obtain information from the Internet and how to use e-mail, and the study of Al-Ghamdi (2007) that showed that teachers had high needs for the Internet.

In the light of information from (Table 6), Spearman Brown indicated that there is a real link between each of the importance of the Internet usage skills and the need for training on them, where the value of the correlation reached (0.837) with an indication of 0.05, which reflects that there is a strong relationship between the importance of the Internet usage skills and the need for those skills.

CONCLUSION

In the end, it is worth mentioning that there are urgent training needs for physical and sports' teachers related to the use of modern technology in teaching, and this is shown in the first and second parts. The first hypothesis showed that the needs of physical and sports education teachers related to the skills of modern technology in teaching were generally high, as the relative importance reached (85.80%). This means that there is an urgent need for the sample persons to train on the use of modern technology in teaching. The second hypothesis also showed that there is a close connection between each of the importance of computer usage skills and the need for training on these skills, where the value of the correlation reached (0.926), with an indication of (0.05), reflecting a strong relationship between the importance of computer usage skills and the need for those skills.

The results of the third hypothesis also showed that the needs of physical education teachers related to the Internet skills were generally high, as the relative importance reached (81.83%). The fourth hypothesis says that there is a close connection between each of the probability of the importance of the use of the Internet skills and the need for training on them, with the value of the correlation reaching (0.837) at a level

of indication (0.05), indicating a strong relationship between the importance of the Internet usage skills and the need for those skills.

To conclude, the skills of using computer and internet are part of training needs associated with the use of modern technologies, therefore the educational institutions have no choice but to cope with global changes and achieve quality requirements in education. This latter requires these institutions to develop their programs and review their systems and laws both administratively and professionally and exploit modern technologies as a basic means in the education system, and there should a recognition of the importance of integration between professional preparation and academic preparation for teachers and the significance of their training by educational supervisors on using and mastering of information and communication technics to improve the educational process.

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