

## **Technology Usage of Teachers in High Schools of Erbil City**

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**Abstract** In this research, high school teachers' technology usage rates in lessons or pre-lesson period in Erbil City, Kurdistan Region-Iraq, is studied. A questionnaire was prepared and the survey was done in April 2010 in 7 high schools on 65 teachers. The research included most of the technologies in education such as board, book, projection and internet. According to the results, it is obtained that high school teachers in Erbil have never used some technologies and are not using some technologies sufficiently except from boards and books. One of the reasons for this is identified as these technologies are not available in schools. It is remarkable that most of the teachers have computers and internet connection at home but they are not using these technologies for their lessons despite the striking improvements in educational technologies.

**Key Words:** Erbil, information Technologies, high school.

### **Introduction**

The rapidly developing technologies are in all parts of today's world as it is associated with terms information era, information society and globalism. Thus, it is inevitable to use them in education.

Technology exists with the existence of humankind and is used in all steps of education (Yanpar, 2005). For a long time, the name of technology in education had been book and blackboard. Later on, some other materials were also begun to be used. Many films, bands, slides, tapes related to the subjects and cinema, projections, cassette players, overhead projectors to show them, and also plenty of physics and chemistry laboratory materials set in schools all over the world (MEB, 1983).

It is now inevitable for education to make use of scientific and technological facilities. The information burst in this age, which means the rapid and continuous increase in the quantity and details of information, requires renewal of course subjects and educational materials every year and delivery of new information to students and teachers on time (Alkan et. al., 1995; Alkan, 2005).

Education is a process that both brings in skills and transfers information. In this process, handling of information is the base. Information technologies, especially computers, generally function as supporting means in teaching and learning processes. Educational institutions both start and direct the social changes and progress. With those characteristics, educational institutions have to follow technological developments, learn how to use them and use these technologies. In other words, educational institutions should build up the students eligible for information age by considering characteristics of information society (Akkoyunlu, 1998).

Ozkul and Girginer list the reasons to use technology in education (Ozkul, Girginer, 2001):

1. Increasing the access to education,
2. Increasing the educational quality,
3. Decreasing the educational cost efficacy,
4. Responding the essentiality of changing technology,
5. Providing the skills that students need both in their work and private life.

When technology is considered, we think about computers. Computers revolutionized by changing the system and structure of classical education. Today, computers are used in all aspects of education (İsman, 2001).

The most important product which emerge as a result of technological developments is, certainly, computer. But all other tools and technologies that provide information and help to use it are also called information technologies (Canan and Topaloglu, 2006).

Information technologies are used in different ways in education. They can be grouped in four (Yasar, 1998);

1. using as means of instruction,
2. using as report preparation tool,
3. using in development of software,

4. using in administrative works

Using information technologies as means of instruction has also many benefits. These can be listed as (Yasar, 1998):

1. using information technologies as means of lesson presentation,
2. using information technologies to practice and repetition,
3. using information technologies as a private instructor,
4. using information technologies as means of presenting simulation activities,
5. using information technologies for informative games,
6. using information technologies to communicate,
7. using internet supported activities.

In the administrative works content, the first area in which computer is used effectively and intensely is measurement and evaluation. It is obvious that measurement and evaluation activities take teacher's time and require great effort. Computer decreases the teacher's burden to a little. A teacher can benefit from computer during measurement and evaluation in such ways (Akkoyunlu, 1998); preparation of question banks, preparation of tests, saving exam results, evaluation of exam results, and analysis of test items.

Moreover, the use of computer in administrative works in schools facilitates the daily work (Akkoyunlu, 1998). Using management programs such as planning, budget, personnel, payroll, accounting and using special programs about student registration and reporting increase the quality of administrative duties (Baykal, 1991).

Internet is the most preferred way of collecting information during lesson preparation process by teachers. Teachers may direct students to internet in order them to search and get information. Searches in internet come after the use of word processing programs and educational software among the computer activities of students in schools (Becker, 1999).

As a result, it is obvious that using information technologies, especially computer, internet and projections is indispensable part of today's education and education quality and efficacy without using technology is low.

### **The Aim of the Research**

The aim of this research is to determine how much the high school teachers in Erbil, Iraq, use information technologies during lesson and lesson preparation process, to determine the meaningful differences about it depending on gender, age and experience year.

### **Method of the Research**

The method of the research is quantitative research approach and survey method. A survey, which had derived from a survey taken from Learning Community Project of Ohio University, USA, and used in a research in Sakarya, Turkey (Isman, 2002), was prepared and applied to high school teachers in Erbil. There were 41 questions in the survey. 8 questions were about teachers themselves. 33 questions were about information technologies.

### **Universe and Sampling**

Universe of the research comprises high school teachers in Erbil City, Iraq. Sampling includes 65 teachers in 7 high schools. These high schools were chosen according to their successes in national exams. The most successful high schools, the less successful and mean ones were chosen. Survey was filled by randomly chosen teachers who were in break.

### **Information About The Sampling**

Teachers answered 8 questions about themselves. As a result the following information is obtained about them. Sampling included:

1. Male: 40 people (61, 5 %)
2. Female: 25 people (38, 5 %)

Teachers' branch of teaching are given in the following table:

| <u>Course</u> | <u>Number of Teachers</u> | <u>Percentage</u> |
|---------------|---------------------------|-------------------|
|---------------|---------------------------|-------------------|

|                    |           |            |
|--------------------|-----------|------------|
| Arabic             | 8         | 12.3       |
| Physical Education | 2         | 3.1        |
| Biology            | 1         | 1.5        |
| Geography          | 1         | 1.5        |
| Religion           | 1         | 1.5        |
| Physics            | 7         | 10.8       |
| Economy            | 2         | 3.1        |
| English            | 9         | 13.8       |
| Chemistry          | 6         | 9.2        |
| Kurdish            | 10        | 15.4       |
| Math               | 14        | 21.5       |
| Guidance           | 1         | 1.5        |
| History            | 3         | 4.6        |
| <b>Total</b>       | <b>65</b> | <b>100</b> |

We grouped teachers into three according to their ages:

1. 30 years old and under : 14 people (21,5 %)
2. between 31 – 40 years old: 30 people (46,2 %)
3. 40 years old and over: 21 people (32,3 %)

Most of the teachers were over 31 but in contrast experience year average were low. Teachers had service in government as:

1. 10 years and under: 39 people (60 %)
2. between 11 – 20 years: 24 people (36,9 %)
3. 21 years and over: 2 people (3,1 %)

Most of the teachers are university graduates. Educational level of the teachers is:

1. 2-year institute graduates: 1 person (1,5 %)
2. 4-year university graduates: 63 people (96,9 %)
3. Graduate degree: 1 person (1,5 %)

In order to understand computer skills level of teachers, there were questions about computer and internet usage. According to teachers' answers, their computer skills statistics, owning computer and internet at home statistics are below. The number of teachers who can use computer is high and owning computer and internet connection at home rate is also high.

1. Teachers who can use computer: 57 people (87,7 %)
2. Teachers who can not use computer: 8 people (12,3 %)
1. Teachers who have computer at home: 54 people (83,1 %)
2. Teachers who don't have computer at home: 11 people (16,9 %)
1. Teachers who have internet connection at home: 35 people (53,8 % )
2. Teachers who don't have internet connection at home: 30 people (46,2 % )

### **Findings And Technology Usage Of High School Teachers Of Erbil**

In the second part of the survey, there were questions about information technologies and teachers were supposed to choose one of the four choices (I have never used, I have rarely used, I have frequently used, I have always used) for each technology. There was another column to obtain whether the technology is available at school. Results are given below, with titles in groups of thirty three technologies and on tables of numbers and percentages.

### **Black/White Board, Graphics, Big Picture, Book, Panel, Caricature, And Diagram**

Black/white board, graphics, big picture, book are available in all schools of Erbil. In two (28,5 %) of the seven schools attended the survey, teachers say panel for announcements is not available in their schools. Caricature is not available in five (71,5 %) of the seven schools while diagram is available in four (57,1 %).

All of the teachers use boards. They use books as well. The rate of teachers who don't use book is 4,6 percent. They are chemistry, English and history teachers and it seems they are using their own lesson notes and make students to dictate. Most of the teachers are not using graphics (61,5 % not using, 23,1 % always used), caricature (81,5 % not using, 7,7 % always used) and diagram (69,2 % not using, 18,5 % always used) while nearly half of them are using big pictures (50,8 % using, 26,2 % always used). 58,5 percent of the teachers use panels for announcements.

It is interesting to observe that most of the teachers are not using graphics, diagrams, and big pictures while 43 percent of the teachers are teaching in scientific branches (biology, physics, chemistry, economy, and math).

### **Desktop Computer, Laptop, Windows, Word, PowerPoint, Excel**

Except from one (14,2 %) of the seven schools, desktop computer is available while only two (28,5 %) of them have laptop. So Windows, Word, PowerPoint and Excel software are not available only in one (14,2 %) of the schools. In most of the schools, computers are used for office works. It is remarkable to learn that some schools have computer labs and multimedia classes while some others don't have even a computer.

32,3 percent of teachers use desktop computer during lessons (18,5 % always used) and lesson preparation process while only 24,6 percent of teachers use laptop (15,4 % always used). Parallel to these statistics, most of the teachers are not using computer software such as Windows (73,8 % not using, 15,5 % always used), Word (72,3 % not using, 16,9 % always used), PowerPoint (80 % not using, 6,2 % always used), Excel (80 % not using, 1,5 % always used). When we consider that 87,7 percent of teachers can use computers and 83,1 percent have computer at home, these rates of using computers are too low. Thus, most of the teachers are supposed to use traditional presentation methods instead of computer assisted one or preparing materials and documents such as worksheets and exam papers by writing on papers.

### **Scanner, Digital Camera, LCD Panel, Multimedia, Printer, Television, CD/DVD, Film**

Two (28,5 %) of the seven schools have scanner and film. Three (42,8 %) of them have digital camera, LCD panel, multimedia and television. While 57,1 percent (4) of the schools have printer, CD/DVD is available in 71,4 percent (5) of the schools.

Most of the teachers are not using these technologies. The rates of teachers not used them are higher than the availability rates. The rates of teachers don't use scanner (81,5 % not using, 3,1 % always used), digital camera (87,7 % not using, 6,2 % always used), LCD Panel (90,8 % not using, 6,2 % always used), multimedia (84,6 % not using, 7,7 % always used), printer (80 % not using, 12,3 % always used), television (86,2 % not using, 9,2 % always used), CD/DVD (76,9 % not using, 13,8 % always used) and film (84,6 % not using, 9,2 % always used) are very high. Usage of presentation technologies such as television, LCD Panel, projection and computer seems to be similar to each other.

### **Video camera, Radio, Cassette Player, Tape Cassette, Overhead Projector, Smartboard, Projector**

Two (28,5 %) of the seven schools have video camera. Three (42,8 %) of them have radio and tape cassette. While 57,1 percent (4) of the schools have projection and cassette player, overhead projector is available in 14,2 percent (1) of the schools. None of the schools have a smartboard.

According to the answers of the teachers, 89,2 percent of the teachers don't use video camera (3,1 % always used) while 87,7 percent don't use radio (6,2 % always used). 73,8 percent of the teachers don't use cassette player (16,9 % always used) while 78,5 percent don't use cassette player (16,9 % always used). 87,7 percent of the teachers don't use overhead projector (7,7 % always used) while 84,6 percent don't use projector (7,7 % always used). Since smartboard is not available in any of the schools, none of the teachers use smartboard.

### **Local network, internet network, www pages, search engines, e-mail**

Two (28, 5 %) of the seven schools have internet connection while only one (14, 2 %) of them have local network. But 87,7 percent of teachers can use computers and 83,1 percent have computer at home. 53,8 percent of these teachers have internet connection at home.

Although teachers have computers and internet connection at home, it seems they are not using them a lot for their courses. According to the answers given for the survey, the rates of teachers not using local network (96,9 % not using, 0 % always used), internet network (86,2 % not using, 6,2 % always used), www pages (84,6 % not using, 7,7 % always used), search engines (96,9 % not using, 3,1 % always used), e-mail (81,5 % not using, 9,2 % always used) are quite high.

### **Gender, age and experience year issues**

There were teachers from both genders in the survey. Except from few technologies, meaningful differences are not obtained in the survey about the technology usage of male and female teachers. In fifteen technologies, the difference was less than 5 percent. It is identified that female teachers use seventeen of technologies more than male teachers (board, book, Windows, Word, Excel, digital camera, LCD panel, multimedia, printer, television, film, video camera, tape cassette, overhead projector, internet network, www pages and e-mail). Male teachers use fifteen technologies more than female teachers (graphics, big picture, panel, caricature, diagram, desktop computer, laptop, PowerPoint, printer, CD/DVD, radio, cassette player, projection, local network and search engines).

There were three age groups in the sampling (30 and under, between 30-40, 40 and over). It is obtained that the older the teachers are the less they use information technologies except from big picture, panel and overhead projector. It is opposite in these three items. 40 years old and older teachers are better in using caricature and diagram while teachers between 31 and 40 are better in using digital camera, multimedia, projection, local network and internet network.

Teachers were grouped into two categories according to their experience year; 10 years and under, over 10 years. The more teachers have experience year, the less they use information technologies except from six of technologies (caricature, diagram, digital camera, video camera, overhead projector and projection).

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| Technology             | Answers                | Number of Teachers     | Percentage         | Technology             | Answers                | Number of Teachers     | Percentage             |        |                    |    |      |
|------------------------|------------------------|------------------------|--------------------|------------------------|------------------------|------------------------|------------------------|--------|--------------------|----|------|
| Black Board            | I have never used      | 0                      | 0,0                | Printer                | I have never used      | 52                     | 80,0                   |        |                    |    |      |
|                        | I have rarely used     | 1                      | 1,5                |                        | I have rarely used     | 1                      | 1,5                    |        |                    |    |      |
|                        | I have frequently used | 9                      | 13,8               |                        | I have frequently used | 4                      | 6,2                    |        |                    |    |      |
|                        | I have always used     | 55                     | 84,6               |                        | I have always used     | 8                      | 12,3                   |        |                    |    |      |
|                        | Graphics               | I have never used      | 40                 |                        | 61,5                   | Television             | I have never used      | 56     | 86,2               |    |      |
|                        |                        | I have rarely used     | 4                  |                        | 6,2                    |                        | I have rarely used     | 2      | 3,1                |    |      |
|                        |                        | I have frequently used | 6                  |                        | 9,2                    |                        | I have frequently used | 1      | 1,5                |    |      |
|                        |                        | I have always used     | 15                 |                        | 23,1                   |                        | I have always used     | 6      | 9,2                |    |      |
|                        |                        | Big Picture            | I have never used  |                        | 32                     |                        | 49,2                   | CD/DVD | I have never used  | 50 | 76,9 |
|                        |                        |                        | I have rarely used |                        | 3                      |                        | 4,6                    |        | I have rarely used | 3  | 4,6  |
|                        | I have frequently used |                        | 13                 |                        | 20,0                   | I have frequently used | 3                      |        | 4,6                |    |      |
|                        | I have always used     |                        | 17                 |                        | 26,2                   | I have always used     | 9                      |        | 13,8               |    |      |
| Book                   | I have never used      |                        | 3                  | 4,6                    | Film                   | I have never used      | 55                     |        | 84,6               |    |      |
|                        | I have rarely used     |                        | 14                 | 21,5                   |                        | I have rarely used     | 3                      |        | 4,6                |    |      |
|                        | I have frequently used | 12                     | 18,5               | I have frequently used |                        | 1                      | 1,5                    |        |                    |    |      |
|                        | I have always used     | 36                     | 55,4               | I have always used     |                        | 6                      | 9,2                    |        |                    |    |      |
|                        | Panel                  | I have never used      | 27                 | 41,5                   |                        | Video camera           | I have never used      | 58     | 89,2               |    |      |
|                        |                        | I have rarely used     | 11                 | 16,9                   |                        |                        | I have rarely used     | 3      | 4,6                |    |      |
| I have frequently used |                        | 15                     | 23,1               | I have frequently used | 2                      |                        | 3,1                    |        |                    |    |      |
| I have always used     |                        | 12                     | 18,5               | I have always used     | 2                      |                        | 3,1                    |        |                    |    |      |
| Carte                  |                        | I have never used      | 53                 | 81,5                   | Radio                  |                        | I have never used      | 57     | 87,7               |    |      |
|                        |                        | I have rarely used     | 5                  | 7,7                    |                        |                        | I have rarely used     | 3      | 4,6                |    |      |
|                        | I have frequently used | 2                      | 3,1                | I have frequently used |                        | 1                      | 1,5                    |        |                    |    |      |
|                        | I have always used     | 5                      | 7,7                | I have always used     |                        | 4                      | 6,2                    |        |                    |    |      |
|                        | Diagram                | I have never used      | 45                 | 69,2                   |                        | Cassette Player        | I have never used      | 48     | 73,8               |    |      |
|                        |                        | I have rarely used     | 4                  | 6,2                    |                        |                        | I have rarely used     | 4      | 6,2                |    |      |
| I have frequently used |                        | 4                      | 6,2                | I have frequently used | 2                      |                        | 3,1                    |        |                    |    |      |
| I have always used     |                        | 12                     | 18,5               | I have always used     | 11                     |                        | 16,9                   |        |                    |    |      |
| Desktop Computer       |                        | I have never used      | 44                 | 67,7                   | Tape Cassette          |                        | I have never used      | 51     | 78,5               |    |      |
|                        |                        | I have rarely used     | 3                  | 4,6                    |                        |                        | I have rarely used     | 2      | 3,1                |    |      |
|                        | I have frequently used | 6                      | 9,2                | I have frequently used |                        | 1                      | 1,5                    |        |                    |    |      |
|                        | I have always used     | 12                     | 18,5               | I have always used     |                        | 11                     | 16,9                   |        |                    |    |      |
|                        | Laptop                 | I have never used      | 49                 | 75,4                   |                        | Overhead Projector     | I have never used      | 57     | 87,7               |    |      |
|                        |                        | I have rarely used     | 3                  | 4,6                    |                        |                        | I have rarely used     | 3      | 4,6                |    |      |
| I have frequently used |                        | 3                      | 4,6                | I have frequently used | 0                      |                        | 0,0                    |        |                    |    |      |
| I have always used     |                        | 10                     | 15,4               | I have always used     | 5                      |                        | 7,7                    |        |                    |    |      |
| Windows                |                        | I have never used      | 48                 | 73,8                   | Smartboard             |                        | I have never used      | 65     | 100,0              |    |      |
|                        |                        | I have rarely used     | 3                  | 4,6                    |                        |                        | I have rarely used     | 0      | 0,0                |    |      |
|                        | I have frequently used | 4                      | 6,2                | I have frequently used |                        | 0                      | 0,0                    |        |                    |    |      |
|                        | I have always used     | 10                     | 15,4               | I have always used     |                        | 0                      | 0,0                    |        |                    |    |      |
|                        | Powerpoint             | I have never used      | 47                 | 72,3                   |                        | Projection             | I have never used      | 55     | 84,6               |    |      |
|                        |                        | I have rarely used     | 3                  | 4,6                    |                        |                        | I have rarely used     | 2      | 3,1                |    |      |
| I have frequently used |                        | 4                      | 6,2                | I have frequently used | 3                      |                        | 4,6                    |        |                    |    |      |
| I have always used     |                        | 4                      | 6,2                | I have always used     | 5                      |                        | 7,7                    |        |                    |    |      |
| Word                   |                        | I have never used      | 54                 | 83,1                   | Local Network          |                        | I have never used      | 63     | 96,9               |    |      |
|                        |                        | I have rarely used     | 6                  | 9,2                    |                        |                        | I have rarely used     | 1      | 1,5                |    |      |
|                        | I have frequently used | 4                      | 6,2                | I have frequently used |                        | 1                      | 1,5                    |        |                    |    |      |
|                        | I have always used     | 4                      | 6,2                | I have always used     |                        | 0                      | 0,0                    |        |                    |    |      |
|                        | Excel                  | I have never used      | 1                  | 1,5                    |                        | Internet Network       | I have never used      | 56     | 86,2               |    |      |
|                        |                        | I have rarely used     | 53                 | 81,5                   |                        |                        | I have rarely used     | 3      | 4,6                |    |      |
| I have frequently used |                        | 6                      | 9,2                | I have frequently used | 2                      |                        | 3,1                    |        |                    |    |      |
| I have always used     |                        | 4                      | 6,2                | I have always used     | 4                      |                        | 6,2                    |        |                    |    |      |
| Scanner                |                        | I have never used      | 2                  | 3,1                    | www pages              |                        | I have never used      | 55     | 84,6               |    |      |
|                        |                        | I have rarely used     | 6                  | 9,2                    |                        |                        | I have rarely used     | 2      | 3,1                |    |      |
|                        | I have frequently used | 4                      | 6,2                | I have frequently used |                        | 3                      | 4,6                    |        |                    |    |      |
|                        | I have always used     | 2                      | 3,1                | I have always used     |                        | 5                      | 7,7                    |        |                    |    |      |
|                        | Digital Camera         | I have never used      | 57                 | 87,7                   |                        | Search Engines         | I have never used      | 63     | 96,9               |    |      |
|                        |                        | I have rarely used     | 2                  | 3,1                    |                        |                        | I have rarely used     | 0      | 0,0                |    |      |
| I have frequently used |                        | 2                      | 3,1                | I have frequently used | 0                      |                        | 0,0                    |        |                    |    |      |
| I have always used     |                        | 4                      | 6,2                | I have always used     | 2                      |                        | 3,1                    |        |                    |    |      |
| Multimedia             |                        | I have never used      | 59                 | 90,8                   | E-mail                 |                        | I have never used      | 53     | 81,5               |    |      |
|                        |                        | I have rarely used     | 1                  | 1,5                    |                        |                        | I have rarely used     | 5      | 7,7                |    |      |
|                        | I have frequently used | 1                      | 1,5                | I have frequently used |                        | 1                      | 1,5                    |        |                    |    |      |
|                        | I have always used     | 4                      | 6,2                | I have always used     |                        | 6                      | 9,2                    |        |                    |    |      |
|                        | LCD Panel              | I have never used      | 55                 | 84,6                   |                        |                        |                        |        |                    |    |      |
|                        |                        | I have rarely used     | 3                  | 4,6                    |                        |                        |                        |        |                    |    |      |
| I have frequently used |                        | 2                      | 3,1                |                        |                        |                        |                        |        |                    |    |      |
| I have always used     |                        | 5                      | 7,7                |                        |                        |                        |                        |        |                    |    |      |

Table: Results of Survey about Information Technologies

## **Conclusion**

The results of the survey can be assessed both for teachers and schools. According to the results, it seems high schools of Erbil are insufficient for most of the information technologies. Even the number of computers is not enough or they are only used for office works instead of lessons. It is observed that some schools don't have most of the technologies even a computer while some of them have most of them.

Secondly, teachers are not using information technologies sufficiently in their lessons and lesson preparation process. It seems that is because of lack of materials in schools. But teachers don't seem eager to use technology in their classes while we consider that most of the teachers have computer at home.

We can advise in service trainings for teachers. The holiday periods are long in Iraq. Teachers are free in the summer. There are some curriculum changes in Erbil but teachers are still in adaptation period of using new course books and curriculum. It is more essential to do the educational reforms both in schools and related faculties of universities.

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