

# Need of Information Technology in Institution Education

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## Abstract

The aim of our research was to investigate the role of ICT within the population of college instructors and to identify the pedagogical implications that the integration of ICT into teaching and learning processes results in. We conducted a pilot session at Pranveer Singh Institute of Technology 20011-2012 focusing on the ICT usage of our students (n=615). We applied the method where students themselves filled in the questionnaires regarding the characteristic features of using computers and the internet, their attitudes towards the usage of the internet and the role that the internet plays in their studies. Our conclusions based on the research and relevant to the current examinations are as follows: Among college student's computer and internet usage for personal purposes plays a significant role. Routine and skill level knowledge of new equipment are necessary for confident and multi-purpose application. The cultural and the financial background of the given institution play an important role in usage. We have found that the majority of students find the role of ICT in their studies highly important. However, we decided to collect data about the user-habits of our instructors and compare the data gained from the two populations.

**Keywords:** *ICT, higher education, the ICT usage of instructors.*

## 1. Introduction

The high-speed development of ICT together with the appearance and dominance of the Internet has economic, social and cultural implications. Daniel Bell referred to a post-industrial change in 1973 and argued that

technological innovations will lead to social transformations [1]. The implications are both at the macro- and the micro-level. The aims concerning the contents have changed, besides the traditional educational schemes the usage of open educational environments has evolved which make methodological transformations a necessity [2].

## 2. Research Design and Methods

The research was descriptive based on the data collected in a survey among the three faculties of Kecskemét College (n=96). We focused on the ICT usage at the faculties, the attitudes towards new technologies, staffs' methodology (whether they have used ICT in their teaching practice) and their future aims. Having surveyed the relevant special literature we realized that teachers had not been examined in this field. However, in public education studies have been made regarding both teachers and students (Csákó, 2001; Török, 2001; Tót, 2001; Pedagógusok a digitális, információs tudásszerzés szükségességéről és új módjáról, 2002; Tót, 2007). Moreover, we found data of Hungarian relevance in international research too (Are Students Ready for a Technology-Rich World? 2005).

We compiled a questionnaire to be filled in independently and gave them to the full time academic staff working at the three

faculties. About ¾ of the staff (94 teachers) honored us by returning the filled questionnaires. The questionnaire serving for research contained the following topics:

- Computer and internet usage
- Attitudes related to ICT usage at school
- Methods applied in education/teaching
- ICT usage in teaching processes
- Opinions regarding the future usage of educational equipment
- Personal data

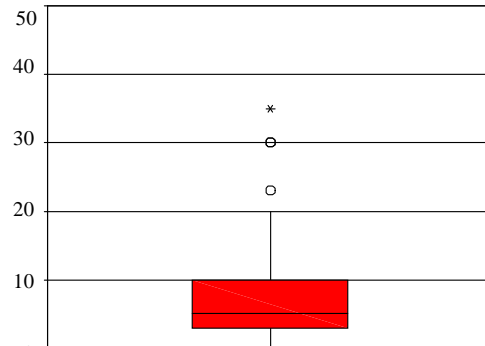
### 2.1 Hypotheses

The usage of ICT necessitates pedagogical-methodological changes in higher education. Among academic staff the usage of ICT for private purposes is typical. Using ICT for pedagogical purposes is typical of a well-defined (domain-specific) community of instructors. All the college instructors use ICT.

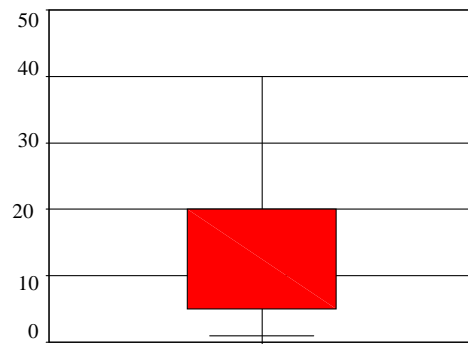
### 3. Results and Discussion of Computer and Internet usage

In the first group of questions we asked about teachers' accessibility to computers and the internet, the time they spend with them and their habits of internet usage. Among the surveyed staff 95% have their own computer and 97% uses the internet regularly. Most of them use the internet both at college and at home, only 35% does not have accessibility to the internet at home. During the week they spend about 13 hours at the college, and 8 hours at home using the computer on the average (Fig. 1). However, it is important to mention, there is a great relative deviation in both cases (at the college: 77%, at home 89%). The next question was about the frequency of searching for entertainment, news, scientific and directly educational information (Fig. 3). It is worth mentioning that 51.1% uses the internet for reading news on a daily basis regularly. On a weekly basis search for scientific and educational information are the most frequent areas, 55.3% and 52.1% respectively. The instructors use the internet, our local research results also reflect that e-mailing, searching for information, surfing the applications. 79.8% of instructors send e-mails some person do never use these functions. If we examine what the internet is used the

least for, we can see that 76.6% never plays games and 66% never downloads music or video.



**Figure1 (a): Average Use time at Home**



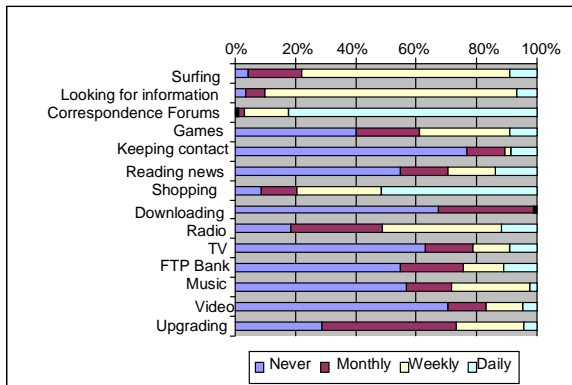
**Figure1 (b): Average Use time at Home**

### 3.1 Attitudes Related to ICT Usage at School

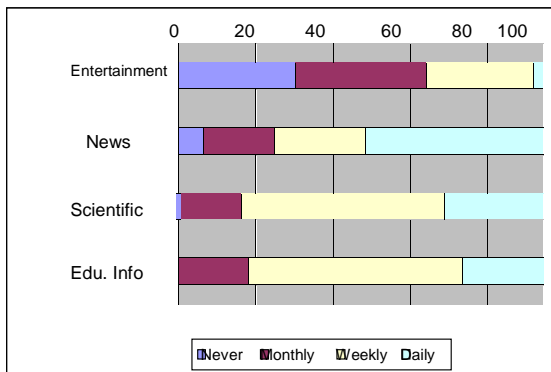
The second group of questions concerned the attitudes related to ICT usage. As regards the questionnaire we did not intend to get information in general about the attitudes connected to the usage of ICT tools but we wished to investigate the attitudes based on personal experience gained in the teaching process.

Due to restrictions on length, we can only make a short remark instead of a detailed analysis: all the questions we asked regarding the application of IT equipment the answers reflected positive attitude. Methods applied in education/teaching Methodological aspect we differentiated 3 groups of teachers: classical-traditional (teacher explanation and presentation, independent student work); interactive (group work, pair work, student presentation, debate); methods of

the new generation (group presentation, cooperative learning, and project work).

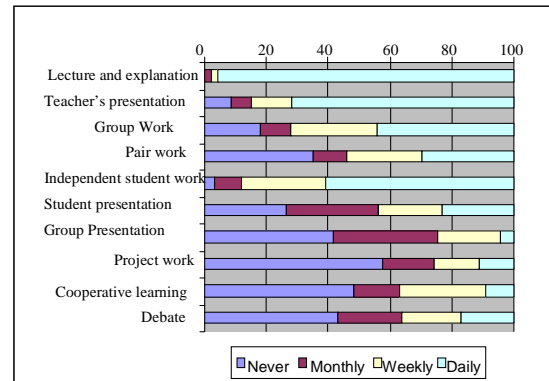


**Figure2 what and how often do you use the internet for?**

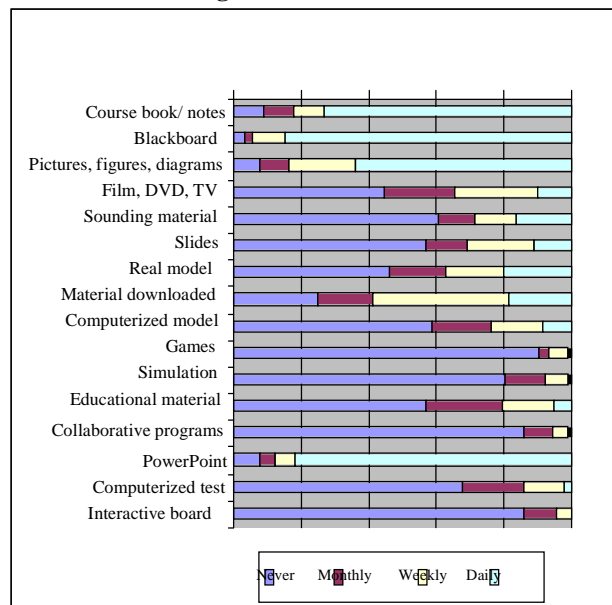


**Figure3 Frequency of searching for entertainment, news, scientific and directly educational information**

Regarding the methods and equipment applied in education we can state that the teacher's explanation or lectures are the most frequent forms, followed by teacher's presentation and independent student work (Fig. 4). The project method has never been used by 55.3% of the asked persons, neither the cooperative learning method by 45.7% or pair work by 43%. In the sample the classical-traditional methods are more common than the interactive or the new generational ones.



**Figure4 Methods applied in education/teaching**



**Figure 5 How often do you use these tools during seminars /practical lessons**

#### 4. ICT Usage in Teaching Processes

In the case of preparing for the class the usage of the more traditional resources is typical. The most frequent resources used for preparation are teachers' own notes (94.7%). Course books and notes prepared by others (91.5%), special magazines (87.2%), special books or manuals (84%) were also mentioned. Materials downloaded from the internet and used for teaching are characteristic for 72.3%, while 55.3% never or hardly ever uses digital teaching material available through the internet, DVD or CD. We also inquired about the materials collected from

the internet for teaching purposes. They included different texts, definitions, rules, pictures, figures, diagrams, maps, exercises, tests, video materials, sounding materials; internet based collaborative tools and software. Among them the most typical ones are texts, pictures, figures and diagrams. Simulations, tests video materials were not frequently searched on the internet and in only few cases were internet based collaborative tools mentioned.

During our research we paid special attention to survey how typical the usage of ICT is in education. We asked staff about the equipment they use during practical lessons and seminars in order to make them more illustrative. Fig. 5 shows that besides the traditional black board, course book/ notes, pictures, figures and diagrams used for illustration, PowerPoint presentations play an important role similarly to the materials that more than half of teachers (57.5%) download from the internet daily or weekly. It is worth observing that computer games, the interactive board, collaborative programs or computerized simulation very rarely occur among the tools used by teachers.

#### 4.1 Opinions Regarding the Future Usage of Educational Equipment

The last group of questions comprised the opinion of teachers about the role ICT will play in the future. In this respect the majority believes that ICT will gain growing importance, especially in searching for information, computerized modeling, educational materials, making presentations and computerized testing while traditional tools, like printed course books, notes work books will not lose their importance either. Having analyzed the data collected for our research, we can state that there is no significant difference between the answers given by men and women.

#### 5. Conclusion

After data analysis we have found that it is typical for all instructors to use ICT for private purposes, for pre-class preparations but only informatics- instructors integrate ICT in their daily teaching practice. The majority of instructors rely on traditional methodology and most of them are not informed about innovative practices. The results of the research do not support the hypothesis according to which the usage of ICT tools would induce "teaching from

the book" methodology dominates. The multimedia tools appear, however, they are employed with traditional methods, and their role is not more than supporting the repertoire. Thus, it is utilized as a modernized version of the overhead projector. On the basis of the survey we can state that new professional challenges and educational goals are evident – through the immense impact of ICT – and the need for new pedagogical paradigms and open educational environment is already an existing demand.

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