# THE INFORMATION AND COMMUNICATION TECHNOLOGIES - CONTEMPORARY CHALLENGE FOR THE EDUCATION IN HEALTH CARE

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**Abstract**

*The introducing of information and commutation technologies in the education puts the training of health care in new intellectual challenge. In the current conditions, health care became an area of global education where the education interacts with a scientific research in this field. The healthcare professionals must have new knowledge, skills and competences which allow them to communicate effectively, to analyze the global processes, to reflect their role globally, to take initiatives for improving the healthcare service by using the information and communication technologies. The article explores the needs of introducing information and communication technics in the healthcare training for improving the quality and the relevance of the teaching process in "Prof. Dr. Iv. Mitev", Vratsa, Medical University - Sofia.*

**Keywords:** *information and communication technology, training, healthcare*

## 1. INTRODUCTION

The evaluation of information and communication technologies affects all spheres of our lives. They are key components not only in the contemporary society and economics but also in the training and the education in all their forms. Many people want to get educational services at any time and from anywhere and that is why the use of these technologies is so demanding. Because of the vast amount of information which the students get in the different learning disciplines it needs to use the information and communication technology (ICT). Many people prefer e-learning and especially e-learning at any time and from anywhere. The introduction and widespread use contemporary ICT in the learning process is about rationalizing the work of lecturers, ensuring an accessibility and improving the quality of training. It is necessary to review the training of the healthcare professionals, forms and training methods, as well the needs of introduction of ICT for improving the quality of healthcare training.

It is necessary to restruct the learning process for successful professional training of the healthcare professionals. The new needs in the health care system require the creation of new technologies in the training of the future nurses. The information progress requires trained students to solve independently very important issues, to eliminate the differences in the knowledge, to use the acquired knowledge in solving new tasks. The introduction of ICT in the healthcare training is motivated by the needs to form integrated type of professional competencies, which can help students to combine and integrate the different elements of knowledge and skills into their behavior so that they can successfully do the job.

The modern requirements for professional competence of nurses with higher education requires building a new model of education at the Higher Medical School about integrating the link between general and professional knowledge. The application on a technology for a distance learning allows students to develop the capacity for professional self-improvement in the system of continuous medical education. It will improve the organization and the self-preparation of students. It is used the information resources of the global network for improving the quality of the training. The methodological materials provided via the Internet have the possibility of regular updates and additions and the students have possibilities for an interconnection and complementarity of educational material from one discipline with materials on the other.

One of the important trends in the modern education are more of the student's own work. Then the teacher has to provide educational resources by using an information and communication technologies. The importance of e-resources in the learning process is much greater than traditional

paper tools, as the new educational technologies increasing the share of self-learning. There is a problem with the providing e-educational resources in the teaching health care. It is necessary to develop and introduce didactic materials in electronic format to increase the efficiency of the learning material.

Purpose: To examine the need to introduce information and communication technologies in the healthcare education for improving the quality and relevance of the learning process in "Prof. Dr. Iv. Mitev"- Vratsa; Medical University - Sofia.

## 2. MATERIALS AND METHODS

The opinion of students from the professional field "Health care", trained in "Prof. Ivan Mitev", Vratsa, Sofia University was researched with an anonymous poll. The number of students surveyed is 300, of which 200 are in the "nursing" specialty, 70 are in the "midwifery" and 30 are "medical assistants". The study period is the summer semester of the 2017/2018 academic year – February- May 2018. Statistical data processing uses SPSS v.19.0. The accepted level of significance is $\alpha = 0,05$. MS Excel is used to graphically present the results.

## 3. RESULTS AND DISCUSSION

During the summer semester of the school year 2017/2018, 92 first-year students were surveyed, 66 second-year students, 76 third-year students and 66 students in the fourth year. The distribution of the participants by specialties and stage of training is presented in Table 1.

**Table 1.** Distribution of the respondents by a specialty and a course of study

| Speciality / curse | Nurse | | Midwife | | Medical assistant | | Total: | |
|---|---|---|---|---|---|---|---|---|
| | Number of students N | Relative share % | Number of students N | Relative share % | Number of students N | Relative share % | Number of students N | Relative share % |
| **I curse** | 50 | 16,7 | 12 | 4 | 30 | 10 | 92 | 30,7 |
| **II curse** | 45 | 15 | 21 | 7 | | - | 66 | 22 |
| **III curse** | 54 | 18 | 22 | 7,3 | | - | 76 | 25,3 |
| **IV curse** | 51 | 17 | 15 | 5 | | - | 66 | 22 |
| Total:: | 200 | 66,7 | 70 | 23,3 | 30 | 10 | 300 | 100 |

The largest share of students in the specialty "nurse" - 66.7%, the students of "midwife" are 23.3% and the smallest is the proportion of the students in the specialty "medical assistant" - 10% , but this specialty is new to the affiliate and that is why the students are only in the first course. In our country, the health care professions are strongly feminized, that is why of the surveyed students predominate women's share - 94% (282) and men only 18% (18), the average age of respondents is 24 years (min. 19, max. 50 years, v. deviation 11.71). The specialties which the students study in our country are regulated and the form of training is regular, which does not allow the introduction of distance learning.

The global e-learning market continues to be active. It is way because the increased demand for an educational services and the development of the information technologies and the growing number of Internet users. The number of online e - learning courses is growing extremely fast. The results show that only 7,3% of the respondents participated in an e-learning course and 92.7% did not participate in a course (Figure 1).

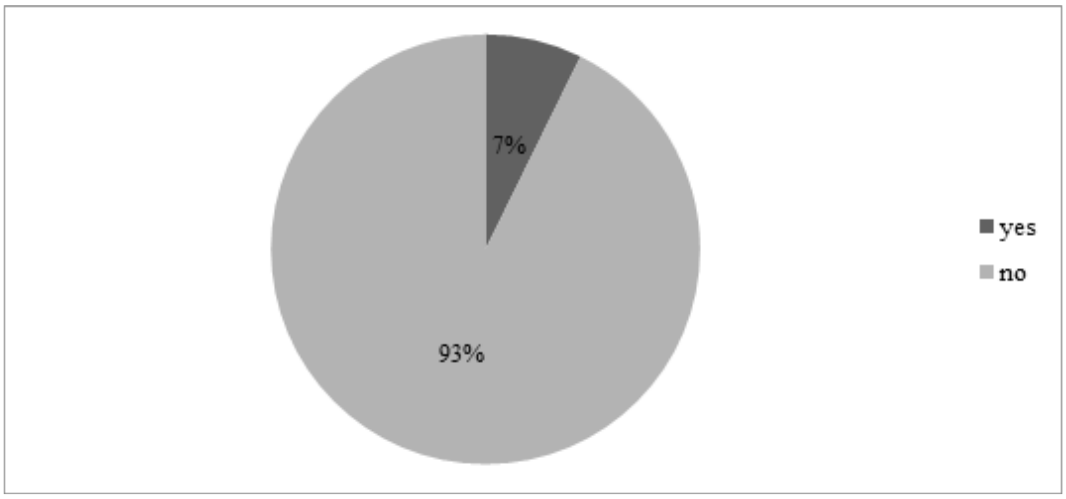



**Figure 1.** Participation of the students in an e-learning course

In spite of that more of the students do not have a completed e-learning course, 77,4% think that they can study in an electronic environment and this means that they would benefit from developed e-learning content. This is confirmed by the answers of the question "If there is a published content for the subject" Health Care ", will this facilitate you in learning?". 85,3% of the respondents think that the e-learning content in the subject “Health care” would make it easier for them to learn and they gave a positive answer, there is a small number of those who guess partly, only 1.3% would not use electronic content, but their share is negligible (Figure 2).

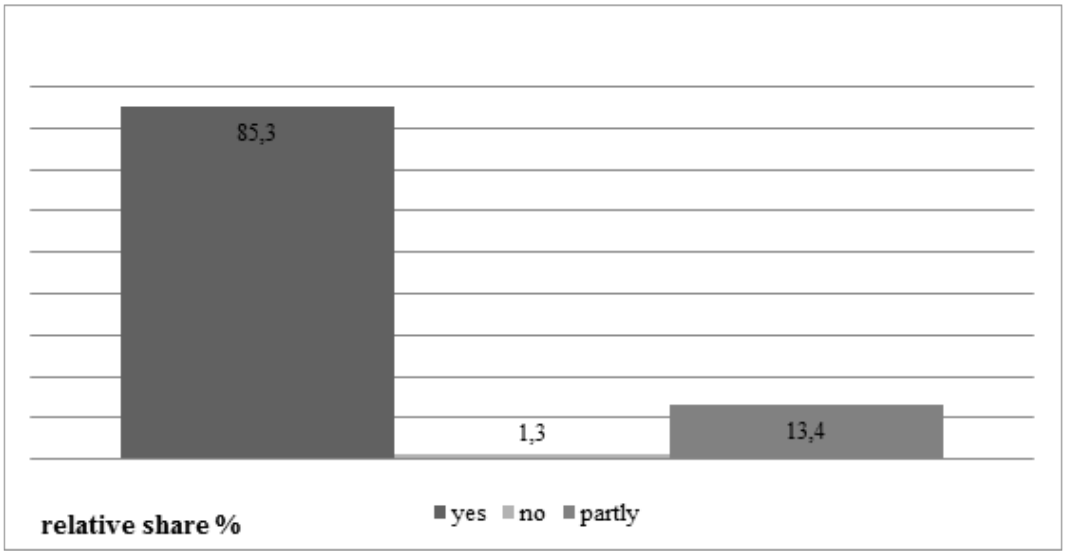



**Figure 2.** Distribution of the respondents according to their need for e-learning content about Healthcare

The share of the students who need to use an e-learning content in the subject “Health care” is significant. After the distribution of the courses becomes clear that the students who need an e-learning content about “Health care” are in first, second and third course, but these in fourth course almost do not need. ($p < 0.05$).

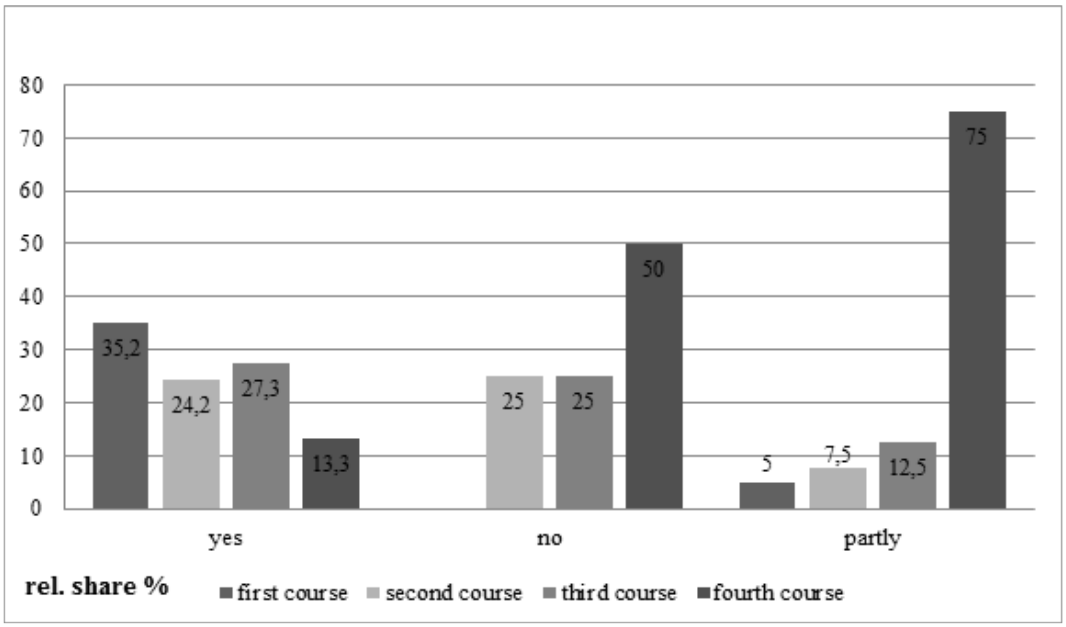



**Figure 3.** Need for e-learning

The training course for the students in the professional field "Health Care" is four years and they receive a Bachelor's degree. In the fourth year of the training it is done an internship according to the unified state requirements. Probably this is the main reason more of the students in fourth course do not need to use an e-learning content because the theoretical part is completed.

In spite of that more of the students (85.3%) have the need to use an e-learning content on “Health care”, more than half of the respondents (54,4%) said that during the training they did not use an electronic textbook on “Health care”, 26,7% did but only an individual developments, 13,3% used an electronic edition in a foreign language, and the students who have used an electronic textbook on “Healthcare” are only 5.6% (Figure 4).

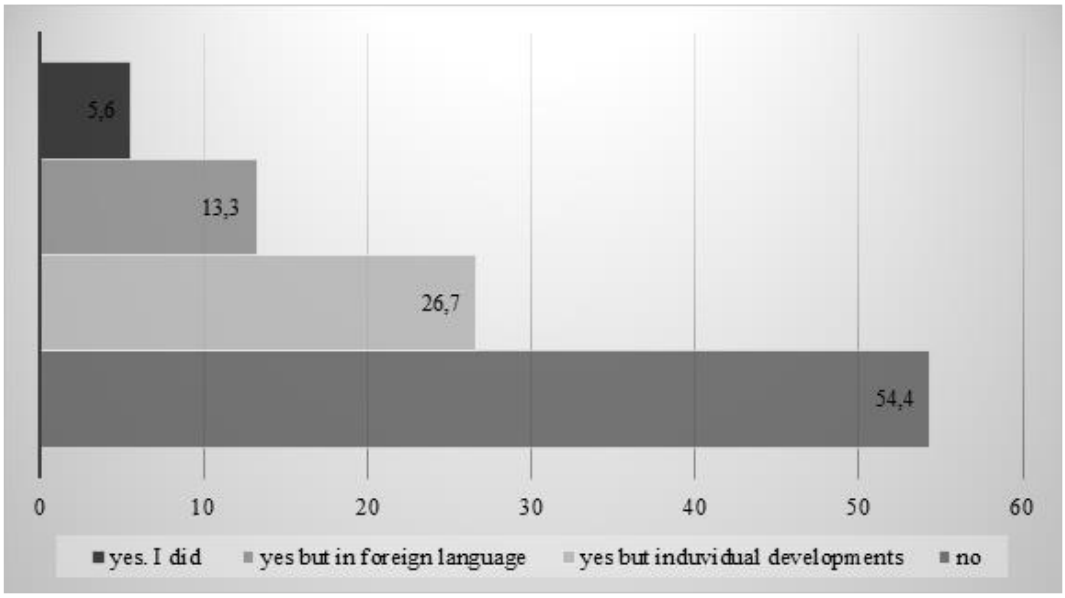
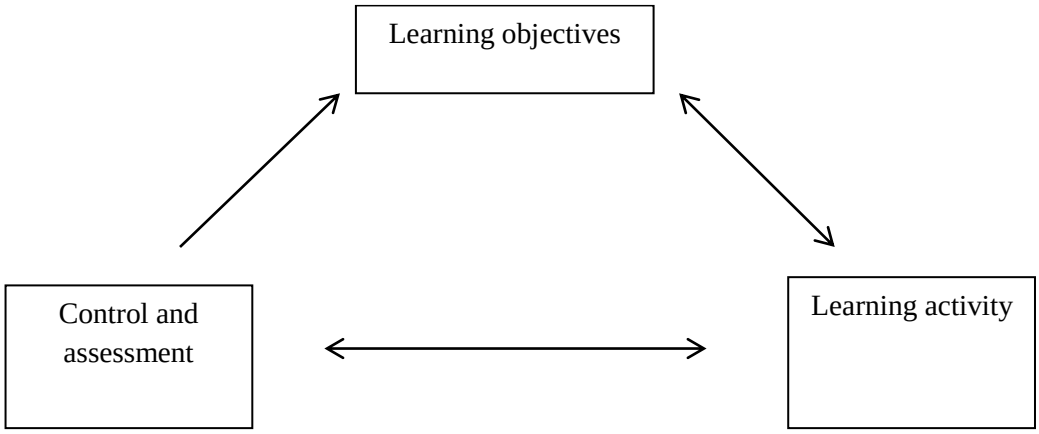



**Figure 4.** Distribution of the students according to the use of an electronic textbook on "Health care"

The e-learning helps to modernize university education in the spirit of the educational, the technological and the economic trends of the global information society. Its introduction do not remove the traditional form and methods of training, only to enrich by using information and communication technologies. This can contribute to the quality of the education as a complement to the traditional direction "Health care". The training in these specialties has its specific features that influence the design of electronic forms. The learning process in VMU is an andragogical process with three participants (lecturer, students, patients), a unity between teaching and learning, as a result of which the students master knowledge, professional skills and habits, personal qualities. The training in the real hospital helps the students to build team-building skills, to apply the principles and rules of medical ethics.

The learning objectives are the first and obligatory element of the triennial structure of the learning process:




For the needs of medical education, 3 types of learning objectives are adequately covered [6]:

1. Institutional goals - they are formulated at the level of the school. They include in the content the final results of the educational process - clinical thinking, good communication skills, personal and professional qualities.

2. Intermediate (departmental) objectives - they are derived from the institutional goals. They are more specific and give an idea of the ultimate number of knowledge, skills, habits.
3. Specific learning objectives - these are the objectives of the individual practical session or seminar. It is characterized by greater specificity and multitude. They have four elements - activity, content, condition and criteria. The activity and the content form the professional competence set as a goal in the specific study form. The condition of the specific learning objective defines the mandatory requirements. This includes equipment, pace, location, and more. The learning objective defines the specific level of knowledge, skills, habits learned at the end of a thematic unit.

A crucial condition for the optimal flow of the forming process is the connection between lectures and students, between students and patients and between students themselves.

After the review of the current situation and the perspectives for the introduction of an e-learning content on “Health care”, the following conclusions are made:

1. Development of the information and the communication technologies, a priority for health care teachers.
2. More of the students (85,3%) who have need to use an e-learning content in the subject “Health” care.
3. In the existing need of an e-learning content, only more than half of the respondents (54,4%) said that during the training they did not use an electronic textbook on “Health care”, and 13,3% of them used an electronic edition in a foreign language.
4. To satisfy the need of an e-learning content about “Health care”, it is a necessary to create a team of teachers to develop teaching materials and to entry into a self-training platform.

## 4. CONCLUSION

The role of the education in the developing society is undeniable. Every major achievement is expressed in the education, which ensures the further development of society. In the context of an information society, the timely updating of knowledge is crucial for the professional realization of the personality.

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