

Dynamics of Recovery of Functions of the Nasal Cavity in Patients with Aspirin-Intolerant Polypous Rhinosinusitis in the Postoperative Period

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Abstract

The article presents the issue of expediency of multimedia technologies implementation into the process of study of "Therapeutic Dentistry" and "Paediatric Therapeutic Dentistry" disciplines for training of foreign dental students with English and Russian language of tuition. The author analyses effectiveness of student's learning of the units "Periodontal disease" and "Periodontal disease in children" presented in multimedia and traditional forms during the practical classes. The use of multimedia support ultimately improves perception and comprehension of learning material and positively affects cognitive activity of foreign students. The lecturer is time-limited during the practical classes and by means of multimedia support he can provide guidelines for students who are not always good enough in English and Russian and in subject matter. This makes classes more emotionally comfortable for the lecturer and students and increases students' motivation and activity. It also opens new opportunities for educational process and self-education.

Thus, proficient use of multimedia facilitates the communication of a lecturer and a student with English or Russian language of tuition and significantly extends and improves educational process.

Keywords

educational process; foreign students; multimedia technologies; therapeutic dentistry; pediatric therapeutic dentistry

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Problem statement and analysis of the recent research

The national concept of education development notes that one of the main aspects of education system reforming is training of an educated, creative person, ready to meet the needs of the society in professional activities both at the national and international levels [5]. National scientists consider the development and use of modern multimedia technologies to be one of the main conditions of future professional development. Multimedia implementation is the fulfillment of one of the most important tasks of modern education, namely management of the educational process. The requirements of the present-day life require the universities to achieve a qualitatively new level of the educational material presentation. Therefore, they implement modern multimedia technologies in addition to the traditional ones [9].

Learning material acquisition is based on a system of effective interaction of educational process participants, and the ultimate goal is the mastering of all aspects of training providing further effective independent activity and self-improvement during the whole period of professional activity [2]. However, it is perfectly clear that there is a field priority in the choice of multimedia technologies. This certainly concerns medicine

as well taking into account the specificity of teaching which consists in a combination of theoretical and practical components of the educational process in the clinical sector of disciplines directly in a health care facility and in a dental clinic in particular. In recent years, the number of information literate students has increased. This is a positive aspect which provides an opportunity to use widely multimedia technologies in educational process. The issue of implementation and effective application of multimedia technologies in education is presented in the many studies of scientific and research and methodology literature. However, the problem of formation of information educational environment remains one of the most important ones [1].

The objective of the research was to study the feasibility of multimedia learning technologies use at the practical classes of foreign dental students with English and Russian language of tuition during the study of "Therapeutic Dentistry" and "Paediatric Therapeutic Dentistry" disciplines.

1. Materials and methods

Training package with lectures, practical classes and self-tuition was developed. It was aimed at the improvement of the efficiency of therapeutic dentistry and pediatric therapeutic

dentistry study by foreign dental students with English and Russian language of tuition through a wide use of multimedia technologies.

2. Results and Discussion

Amount of information learned by a student increases every year. This causes the search for modern and improved ways of educational process organization. One of the information means helping to develop a student's potential is multimedia. It provides an opportunity to use text, graphics, video and animation in the conversational mode expanding the field of computer use in the educational process.

The use of multimedia technology allows the teacher to create his/her own multimedia products and multimedia educational database on the discipline to improve and renovate the educational process. Multimedia learning technology is a set of visual, audio and other means of information display integrated in an interactive software environment.

In recent years, the number of foreign dental students wishing to study at Ivano-Frankivsk National Medical University has significantly increased. One of the factors complicating these students' study of the discipline "Therapeutic dentistry" and "Pediatric therapeutic dentistry" is poor or absent Ukrainian language proficiency. Therefore, the majority of students study in English and some in Russian. Teaching in English allows students to learn the training material more effectively based on the knowledge that they have received in educational institutions of their countries. Teaching in Russian is somewhat complicated as this language is usually mastered by the students at the preparatory faculty. Students from ex-USSR countries of Central Asia and South Caucasus have some level of Russian. However, like English for young people from other countries, Russian is not their mother-tongue. Therefore, the perception of the material is often difficult.

An experience in working with foreign students shows that this group of students requires a special way of teaching. This is particularly caused by the fact that groups often consist of students from different countries, different religions and nationalities. They have different training as they have studied according to different school curricula. This causes some difficulties during teaching, therefore teaching of foreign students at the Department of Therapeutic Dentistry and the Department of Paediatric Therapeutic Dentistry is conducted by highly qualified teachers who can speak English (they have completed special training courses and have relevant certificates) and Russian. Most of them are Candidates of Medical Science.

Teaching staff at the departments developed multimedia presentations on therapeutic dentistry and pediatric therapeutic dentistry in order to improve the efficiency of practical classes. The main advantage of teaching using multimedia presentations is an interactive communication of the teacher with students. Soft hardware provides simultaneous presentation of learning material and an opportunity to communicate with the audience. Presentation may be stopped if necessary

and additional explanation may be provided. When presenting information in the form of multimedia, it is possible to vary the sequence and form of learning material presentation, easily to return to previously presented diagrams, pictures, photos with different clinical cases and radiographs to clarify or establish connections with new information.

Multimedia technology is known to be used not very often during practical classes. However, according to modern researches in the field of educational technology, great potential for improvement of learning efficiency is found here [6, 8]. Therefore, we consider the use of multimedia to increase students' interest in the educational process. Students often first learn not the content of the material but the form of its presentation. Increase in the level of practical class visualization provides an opportunity to interest a student in the discipline and to diversify the ways of material mastering. Moreover, the integration of sound, movement, image and text creates a new academic environment, diverse in its capabilities. With its development the degree of students' involvement in the educational process increases.

Foreign dental students with English and Russian language of tuition attach great importance both to the content and the form of material presentation. Therefore, we consider the use of multimedia technologies to increase foreign students' interest in practical classes and then in educational process. As a matter of fact, psychological researches have shown that a student remembers 10% of what he hears, 50% of what he sees and 90% of what he does [4]. Therefore, the high efficiency of application of different presentation methods (diagrams, tables, videos, pictures) and the use of graphical, audio and visual information is obvious. In order to achieve learning efficiency, the use of multimedia technologies must be accompanied by the teacher's explanation, namely the explanation of incomprehensible data, clarification, or direction of students for independent search of necessary information [3, 7].

Technical errors that may be made by the teachers such as a large amount of information on screen causing audience weariness, presentation of continuous texts, awkward use of fonts and colors should be also taken into account during the preparation of multimedia material. Therefore, teaching staff should continually improve their knowledge and skills at special trainings, seminars and by means of self-education.

According to the experience of "Therapeutic Dentistry" and "Pediatric Therapeutic Dentistry" teaching, such units as "Periodontal disease" and "Periodontal disease in children" are the most difficult for students. Knowledge of allied disciplines (Anatomy, Physiology, Pathological Physiology, Pharmacology, Orthodontics, Orthopedic Surgery and Dentistry etc.), understanding of Periodontology fundamentals are required for their study. Taking into account that treatment principles are based on the use of complex therapy methods, much effort should be made to accumulate great deal of information. Therefore, the use of multimedia technologies in addition to the traditional ones was introduced at practical

classes to facilitate the perception of these units.

Two groups of English-speaking and Russian-speaking dental students were formed to conduct the research. They were similar in numerical composition and performance. Practical classes in Therapeutic Dentistry for the fourth year students in VIII term were conducted in a traditional way and with the use of multimedia technologies in Group I, and only in a traditional way in Group II. At the Department of Therapeutic Dentistry the experiment lasted during VIII term (during the study of “Periodontal disease” unit). At the Department of Pediatric Dentistry it lasted during the fifth year in the IX term while studying the discipline “Pediatric Therapeutic Dentistry” when the units of Pathodontia were studied.

Teaching staff used multimedia equipment in addition to traditional visual teaching aids (tables, documents, printed tasks, radiographs, etc.) in Group I. Lesson structure in this group was as follows:

- elicitation with the solution of the test after which correct answers were displayed on the screen;
- individual recitation when students had the opportunity to ask questions which they did not understand during the preparation for the lesson;
- analysis of thematic case problems with the demonstration of the thematic patients’ pictures on the screen;
- practical skills training to facilitate which the teacher provided an algorithm to perform a particular skill with its presentation on the screen;
- watching a video on the topic;
- review test, summing up, the announcement of the marks, tasks for the next lesson.

elicitation with the solution of the test after which correct answers were displayed on the screen; individual recitation when students had the opportunity to ask questions which they did not understand during the preparation for the lesson; analysis of thematic case problems with the demonstration of the thematic patients’ pictures on the screen; practical skills training to facilitate which the teacher provided an algorithm to perform a particular skill with its presentation on the screen; watching a video on the topic; review test, summing up, the announcement of the marks, tasks for the next lesson. Students’ activity was noticed to increase gradually during the lessons with the use of multimedia technology. The students in the experimental groups quickened but were still restrained during the first lesson. Starting with the second lesson they began to participate in the educational process more actively and asked to receive a copy of the learning material. Students also indicated reduction of stress and increase in concentration accompanied by mood improvement.

The teacher of the Department of Therapeutic Dentistry stated somewhat tense communication with students in the

control groups due to their imperfect language skills, especially pronunciation, national differences in behavior.

Teachers of the experimental groups noted that the use of modern technologies significantly simplified the communication of the teacher and the foreign students, provided an opportunity to enrich the content of practical class, to improve the quality of practical skills and accelerate the pace of its implementation, i.e. to use study time in the most efficient way. Thus, the use of multimedia support provides a more comfortable environment for students and teachers.

Thematic modular control consisting of the test control of knowledge, the control of theoretical and practical training was conducted after the unit study to determine the level of students’ acquisition of knowledge. The obtained results indicated that the teaching information display by the students of the experimental groups was more complete and structured; they found correct answers and solved situational problems quicker. This led to increase in student performance.

The study of Periodontology continued during fifth year at the Department of Pediatric Therapeutic Dentistry. Lessons in these groups were conducted according to the same scheme as in Therapeutic Dentistry, that is, the experiment continued.

It should be noted that the students of the experimental groups had slightly higher initial level of knowledge than the students in the control groups. This allowed them to learn the features of Pediatric Periodontology successfully as the main base of periodontal knowledge was acquired during the fourth year at the Department of Therapeutic Dentistry. The continued use of multimedia presentations in these groups helped to solidify knowledge which was tested at the final module. These students easily used terminology, demonstrated a greater understanding of the problem, were able to compare Periodontology in “adults” and “children”, to determine the similarities and differences.

The classes were not so well structured in the students of the control groups. This affected the quality of learning and, consequently, the duration of the memorizing of the studied material.

Thus, the use of multimedia technologies at the lessons of therapeutic dentistry and pediatric therapeutic dentistry stimulates students’ cognitive activity, facilitates the perception of new information, promotes more successful material retention based on dynamic visual images, develops spatial imagination and the ability to think logically.

3. Conclusions

- Application of multimedia technology significantly expands and improves the educational process.
- The use of multimedia support significantly improves the perception and understanding of the issues of the practical class and has also a positive effect on students’ cognitive activity making “knowledge survival” significantly enhanced.

- The teacher is time-limited during the practical classes. With the use of multimedia he actually makes tips both for himself and for students who do not know English or Russian well as well as the studied material.
- Classes become more emotionally comfortable for students and teachers, enhance the motivation and activity of students, provide new possibilities for the educational process and self-education.
- Proper use of modern multimedia facilitates communication of the teacher and the student with English or Russian language of tuition.

4. Prospects for further research

The prospect of further research is to improve existing ones and develop new methods of practical classes conducting with the use of multimedia technology in the process of study of disciplines “Therapeutic Dentistry” and “Paediatric Therapeutic Dentistry” by foreign students with English and Russian language of tuition in order to improve education.

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