

## DEBATE AND EDUCATION

## The preparation of students of medical faculties and other public colleges for educative activities within the National Programme of Health Support

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### Abstract

The tradition of education of physicians at the Medical Faculty of Comenius University (MFCU) has been developing for more than 85 years. Currently, the education has been widened by non-medical fields of study (nursing, obstetrical assistance, rehabilitation, public health care and laboratory and examination methods). After joining EU, the accreditation study programmes have been subject to transformation in compliance with current world trends in education. In accord with the transformation of content and forms of medical physics training, the authors demonstrate the main objectives and goals of this process. The goal is to prepare the graduates on high theoretical and practical levels, to teach them to work in team, and to prepare them for whole-life education. Practical skills in pre-clinical and clinical disciplines are being strengthened. One of the important outputs of pre-graduate education is the readiness of graduates for educative activities in favour of the National Programme of Health Support. (Tab. 1, Fig. 1, Ref. 7.)

**Key words:** medical education, nursing, accreditation, study transformation, study programme, National Programme of Health Support.

The aim of educative activities of medical faculties and other public colleges in training the health-care workers (Bachelor, Master, Doctor and PhD degrees) is to meet four basic prospective requirements based on the very essence of medicine:

- Support and strengthening of health
- Prevention
- Health recovery
- Rehabilitation on top level in accordance with EU and WHO standards.

As it implies from the latter, for both Slovak and foreign students – the future graduates, it is necessary to create conditions enabling them to contribute to the accomplishment of a healthy population by means of their expertise in compliance with the twenty-first century WHO standards. At MFCU we consider it to be our duty to contribute to the education of graduates of medical universities and health-care studies in accordance with current world education trends. It is necessary to bring the students to learn how to work in teams, to recognize the inevitability of increasing their current expertise not only during their studies but also during the whole of their lives. The application of new didactic forms and methods in the pedagogical process must

become evident not only in the way of testing the acquired knowledge, but also in the process of acquiring new expertise and skills.

When comparing our graduates with those of renowned world universities it comes to light that our students are very well prepared in theory, however they lack practical approaches. The very essence of this lack resides in their practical abilities, skills, habits and experience that are an important presumption of efficient performance in their future profession. This fact was proved by the feedback gained from foreign universities and their school hospitals and clinics where our students had been trained. Despite the

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The solved problems form a part of GP VEGA 1/0237/03 of Ministry of Education of Slovak Republic.

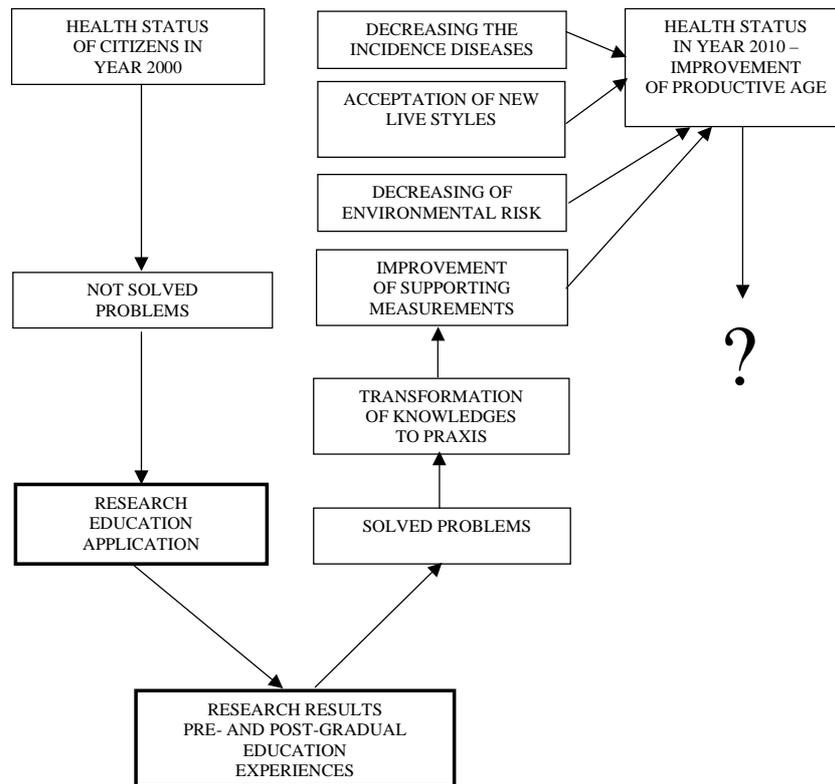


Fig. 1. Research and Support of Health up to 2010 (Kukurova, 2000).

latter, our students and graduates are accepted in any foreign countries and their credibility is equal to that of students of renowned world universities. Their knowledge is often evaluated as outstanding when compared with the graduates of other European and overseas faculties. Yet, the essence of problem resides in their insufficient practical skills and ability to handle instrumental technology. The building of high theoretic basis at the expense of practical experience correlates with the traditions of the postgraduate health-care system in our country, which is currently being subject to transformation in compliance with EU requirements. Therefore it is inevitable to adapt also the pre-graduate system to these changes. It is necessary to strengthen the practical skills not only in theoretical, but also in pre-clinical and clinical disciplines in order to get focused on the building of practical habits and skills of graduates. The most important outputs of pre-graduate education should include also the preparedness of graduates to carry on with their education in favour of the National Programme of Health Support.

In addition to pedagogical, therapeutic and preventive activities it is necessary to accentuate another basic principle of functioning health-care, namely scientific research representing the basic presumption of further perfection of health-care service. It plays an important role of implementing the knowledge gained at experimental institutions into practice, integrating medical knowledge within working teams on all levels of health-care. In addition to the latter also the international co-operation in medical research and practice is considered to represent an important indicator.

The priorities of research performed directly at medical faculties will have to include also the innovation methods and procedures decreasing and eliminating the bio-psycho-social risks of diseases (Fig. 1).

As presented within our statistical sources, we have not succeeded in recording the positive impacts of economic transformation projected in a whole series of measures that should lead to increasing the living standard of our people and subsequent improving of their health. For the past 40 years, the trends of social indicators have not reflected an improvement in health and protection of environment yielded by some advanced countries of the world. On the contrary, many indicators have deteriorated. This is why it is necessary to increase the efficiency of education leading to the support of health. This intention has to be transferred into modernisation of both medical and non-medical study programmes. It is necessary to be focused especially on:

- Health-care in healthy population in their natural environment by various forms of guidance (life style guidance, etc).
- In general practice our contact with patients cannot remain plain. It has to be based on partnership, in which they represent health insurance policy owners. In this sense it is our duty to educate them, especially in contact with general practitioners in order to optimize their life style and conditions of life.
- In the long run it is necessary to focus on full use of qualification of nurses and their greater involvement in the field of prevention and guidance regardless of the fact that according to the WHO

data the health-care workers influence the life style of the population by only 20 % and other factors including that of environment participate by 80%; the function of medicine is irreplaceable.

We are convinced that the health-supporting education must be equally thoroughly projected into pre-graduate education of physicians and other health-care workers (nurses, obstetric assistants, public health-care, physiatry, balneology and therapeutic rehabilitation, regeneration etc). As to the content, it is necessary to accentuate the health-supporting programme together with that of prevention of diseases in order to equalize the imbalance of diagnostic and therapeutic performances. This should be positively projected into the change in the hierarchy of criteria of individuals as well as that of families in the whole of society in relation to health representing the top value.

In compliance with Bologna conclusions and WHO recommendations in formulating the Strategic EU Documents for doctoral, bachelor and master degrees, the theoretic institutions and clinics of MFCU have re-evaluated their targets of practical training.

We are hereby presenting an actual change that has been carried out at the Institute of Medical Physics and Biophysics where they have re-evaluated the targets of practical training of subjects focused on physics and bioinformatics. Its forms and methods have been brought into accord with theoretic postulates of training physics and didactic measures have been adapted to solving the problems in creative outputs of students in form of term projects. They can be possibly worked out in form of teleprojects, scientific activities or diploma works. The solved problems form a part of GP VEGA 1/0237/03 of Ministry of Education of SR. The classes of the above subjects presented in Slovak and English in frame of full time or distance doctoral, master and bachelor degrees studies of eight disciplines form a part of the curriculum of faculty. Currently, the required restructuring of education is carried out preconditioning the future educative tasks of graduates.

The attempts to modernize the curriculum are also in compliance with priorities declared by EU in frame of the 2004 communitarian public health programme (2003–2008). The latter involves priorities as follows:

1) The improvement in accessibility to health information (development and co-ordination of health-care information systems, monitoring systems, mechanisms of collection and analysis of health-care information and creation of evaluating reports in the field of public health, improvement in the availability of data and their transfer on the level of EU (EU Health Care Portal), e-Health, evaluation of impacts on health (Health Impact Assessment), co-operation between EU members in health care policies).

2) Health threats – (development and integration of systems of medical supervising, safe blood and organ donation, strategy of controlling the resistance to microbes, the link and improvement in laboratory performance, targeted building of capacities, sharing of vaccination and immunisation strategies, safe health-care performance).

3) Health determinants – (tobacco-smoking prevention and its elimination, legislative measures, alcohol, drugs, nutrition and physical exercise, sexual health, psychic health, prevention of accidents, environmental determinants of health, social and economic determinants of health, support and propagation of health

in local regions and working places, education in frame of public health, prevention of diseases, especially those of cardiovascular diseases, cancer and diabetes).

The whole practical learning is being managed via textbooks in form of minute-based knowledge (1–7).

Physics-derived issues are being solved by means of two approaches in contexts with the following:

- Functional anatomy and physiology of organ systems
- Diagnostic and therapeutic procedures performed in health-care

Textbook (3) in form of schemes and algorithms of solutions is not only a guide for full-time, distance and individual students, but can serve beneficial in their future self-education, including the use of information and communication technologies (ICT). The aim is not only to be able to use them for their own purposes but also to be able to instruct the patients on how to use them in favour of their health and preventing the diseases.

Internet and its interactive possibilities can also represent an efficient support in distance education of nurses in the future. An example of freely accessible virtual seminar for nurses, psychologists, social workers, psychiatrists and consultants are the free-of-charge web sites <http://www.virtuals.com>; charged sites can be found on <http://www.ce-web.com>, etc.

A significant source of expert bibliographic information is represented also by databases of published issues in the fields of health-care and medicine. The databases of Medline, Current Contents, Web of Science etc are presented in the virtual library of Comenius University and serve for searching updated information in coincidence with term, half-term or final projects or diploma works.

According to pedagogic experience the new coming students should as soon as possible learn to work effectively with special systems of searching the scientific information in international bibliographic databases. For their further study and practice, the latter is of extreme significance. They should learn to focus on innovations in their disciplines disregarding the language or country in which they have been published. Hence, it is a crucial precondition to speak foreign languages especially English.

Fast gaining of information and the possibility of global communication, similarly as the measures of physics-derived subjects support the development of creative abilities of students, they teach them to comprehend the newly gained information in a wider context, the frame of which is given by facts gained from textbooks, lectures and other forms of direct or indirect training. The presentation of knowledge gained in this way can be ideally carried out in form of term projects that have to be proved on seminars. It is a form of learning that develops also the ability of students to be critical in their considerations, seek new approaches supported with updated information and to give factual arguments at an expert level. The presentation of gained knowledge coincides with gradual gaining of rhetoric skills as well as the development of non-verbal communication when creating the presentations.

In addition to the availability of sources focused on the specificity of individual subjects and disciplines, internet gives an access to dictionaries that can be used in support of the decisive process, to research, problems of differential diagnosis and abnormal findings in the field of nursing informatics.

**Tab. 1. Suggested measures of increasing the level of compliance with health-protection regulations in health-care personnel and patients.**

Suggested measures	Count of responses
Improvement of economic situation	74
Technologic modernization	69
Sufficiency of disposable material	61
Improvement in the quality of sanitary facilities	40
Staff acquisition	32
Increased space	26
Improved approach to patients	23
Thorough hygiene	21
Time for recovery and rest	19
Reduced amount of beds per ward	18
Reduced stress at workplaces	15
Improvement of microclimatic conditions	12
Other measures	42
No suggestions	5

Internet technologies offer innovations in calculating cost effectiveness; the flexible system of Continuing Nursing Education is used by health-care workers in their pre-graduate and post-graduate training.

There is still other didactic form supporting the independent creativity and preparation of students to work in teams, namely the processing of already mentioned term projects in the frame of project training. The latter training is a modern training method. In frame of full-time, distance or external training in disciplines forming the curriculum of university or post-graduate health-care studies it is more effective than classic forms of training especially in adults. The current trends in interpersonal relations between the teacher and students, the results of their mutual work using progressive forms and measures of the theory of teaching as e.g. cooperative learning or discussion are a convincing proof of durable knowledge gaining. Project training is used in all forms of education in compliance with strategic WHO and EU documents.

The projects can be divided per type into: problems, constructions, evaluations, and drills. Their spreading is enabled by information and communication technologies, namely teleprojects carried out from distance. Educative and formative targets of project learning develop especially the abilities and habits of working independently and creatively, planning ones own work and completing it, defending ones work and overcoming obstacles, processing information, presenting ones own work, expressing oneself properly, giving justified arguments, co-operating, communicating, tolerating and accepting other opinions, evaluating ones own work and the work of colleagues.

The objective of project training is to support the struggle of students to manage the future co-operation with workers of various qualifications in solving mutual tasks, e.g. in therapeutic process since the work in health-care is always a team work and the members of team must understand and supplement each other. The more they are able to apply the latter, the more rational are their results.

In summer term of school year 2003/2004, a form of project training was used in the frame of information technology training of external students in first grade of nursing at the MFCU in Bratislava. A task was to suggest an optimal solution as to how

to bring the personnel at a particular health-care facility to comply with safety and hygiene regulations (Tab. 1).

Term projects have confirmed abundant practical experience of external students that they have gained during their practice at all types of health-care facilities, including social welfare homes. The analysis of term projects indicates, that in protection of health they lay a significant emphasis especially on preventive measures. They have proved the importance of economic level of individual health-care facilities. Owing to the fact that among the students there are matrons and ward nurses who can to a great extent contribute to amending and implementing the regulations.

It is necessary to remind that in the future probably not only in the distance learning but also in direct training, the communication in so-called discussion groups referred to as mailing lists or listservers that have originated as a superstructure of electronic mailing. These facilities enable to communicate among a group of students solving some so-called teleprojects dealing with a particular topic assessed in advance and being of regional or global significance. Abroad, it is common that especially diagnostic and therapeutic procedures are mutually consulted not only among groups of patients but also with physicians. The latter after obtaining information on the state of patients suggest a possible procedure in seeking medical help or suggest the most appropriate specialized clinic or specialist.

In the long run, the training counts on the use of computer conferences (referred to as news) enabling mutual communication of a large amount of participants. Due to the fact that they are organized by academicians, laboratories and commercial firms they enable the user to outline quickly the offer of scientific reviews according his/her field of interest, or to forward it to his/her colleagues. Last but not least the conferences provide the possibility to participate directly in a discussion (so-called posting).

It is possible to conclude and at the same time to hope that the current phase of restructuring of Slovak universities (owing to the application of pedagogic measures and technologies) is going to contribute to meeting the goals of the global project of "Access to Health in the twenty-first Century".

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