NEW ICT AND CHANGING ROLES OF TEACHERS

Marek Frankowicz¹, Barbara Kedzierska² and Jadwiga Mirecka³

- ¹ Faculty of Chemistry, Jagiellonian University, Krakow, Poland
- ² Pedagogical University, Krakow, Poland
- ³ Collegium Medicum, Jagiellonian University, Krakow, Poland

Introduction

In the past decades we have witnessed rapid development of many areas of science and economy inducing increasing speed of changes in everyday life of individuals and of societies at large. Accession of Poland to the European Union, educational reforms, rapid development of ICT and in particular of the Internet, caused the necessity of adaptation of Polish society to new global challenges. Internet connections, providing almost unlimited access to global information resources, induced deep changes in rigid educational systems and forced teachers to enter and master new, often alien world full of unexpected possibilities, but hiding also previously unknown dangers.

When we formulate new teaching/learning objectives, we have to take into account new emerging needs and conditions, such as

- necessity of connecting all stages of education in a self-consistent system shaping competencies necessary for 21st century professionals,
- necessity to prepare young people for lifelong learning and continuing self-development
- necessity or preparation of graduates of different school levels, strands and types to react efficiently and dynamically to rapidly changing reality,
- necessity of full integration of ICT and teaching aids in realisation of appropriately designed learning schemes,
- necessity of interdisciplinary approach to subject-specific competencies in the framework of given specialisation areas,
- necessity of shaping appropriate information and communication competencies, important for active participation in the global knowledge society, in the framework of regular courses concerning various subject areas,

New roles of teachers resulting from political, economical and technological changes

In the AMEE Medical Education Guide Harden and Crosby (H&C) presented a model of the twelve roles of the teacher. It is based on six main roles, each one subdivided into two roles:

- Information Provider (Lecturer/Practical teacher)
- Role Model (Teaching role model, On-the-job role model)
- Facilitator (Learning facilitator/Mentor)
- Resource Developer (Resource material creator/study guide producer)
- Planner (Curriculum planner/Course organiser)
- ✤ Assessor (Student assessor/Curriculum evaluator)

Each of the above roles is sub-divided into two roles (as will be displayed below).

Although the model concerns the specific case of medical education, it has been elaborated on the basis of some general assumptions and has a "generic" character; it may serve as a good starting point for the formulation of models for other subject areas as well as for discussing some particular aspects of the dynamics of development of teacher's profession; it can be also applied to any level of education.

The teacher of today should be not only an information provider, but also an example to be followed, adviser and supporter in building up students' capacities and mobilise them to acquire knowledge and wisdom. Depending on the educational and social context, the teacher shall play various roles; the modern ICT can offer here an important support and influence the relative importance of different roles. The development of modern information society determines the dynamics of change for various aspects of teachers' activities and mission.

In the Table 1 we show various roles of teacher (according to H&C) classification) and comment on the influence of ICT on different roles and their particular aspects.

Role		Influence of ICT
Information Provider	Lecturer	Teacher is no more vthe only source of information. In his work he can be assisted by multimedia systems and use various forms of e-communication for contacts and discussions with learners.
	Practical Teacher	e-presentations and simulation systems can provide opportunities for initial practical training
Role Model	Teaching Role Model	Showing how to use modern ICT in professional activities.
	On-the-job role model	ICT competencies are prerequisities for efficient functioning in the knowledge society
Facilitator	Mentor	Ethical aspects of using ICT tools.
	Learning facilitator	Showing how to use ICT to acquire necessary information efficiently, ethically and competently. Tutoring on-line. Interactive seminars.
Resource	Resource Material	ICT tools – help in providing multimedia
Developer	Creator	teaching materials, teaching aids, e- textbooks for distance and blended learning
	Study Guide Producer	Hypertext information on-line
Planner	Curriculum	e-communication, various forms of
	Planner	
	Organizer	e-textbooks allowing for independent work of learners moderated by teacher; on-line accessibility of course schedules, results of assessment etc.
Assessor	Student Assessor	e-evaluation methods facilitate and objectify evaluation, allow for distance evaluation, provide self-assessment tools, allow for checking the quality of examination

Curriculum	Modern curricula should include active
Evaluator	formation of ICT competencies (through
	dedicated course units and also in the
	framework of subject specific education).
	On-line availability of study programs allow
	for their analysis for a wider range of
	evaluators.
	Electronic transfer of documentation
	facilitates evaluation process.

Multidimensional Aspects

The teacher's mission is realised on only through direct influence on the learner, but also through influence on the school as institution and interactions with school's environment (learner's family, society at large etc.). In these interactions the teacher plays different functions, and each function can be related with different mutually interconnected roles. These various relationships are shown in tables below; with the ICT context identified.

Teacher – Learner Interaction

Teacher's Function	Role	ICT Context
Educator	Information provider, Learning	ICT competencies as a basis
	facilitator, Planner, Assessor	for rational and efficient
		collection, processing and use
		of information for individual
		knowledge and wisdom
Preparation for Labour Market	Practical teacher, role model	Good knowledge of ICT helps
		to find a job and increases
		efficiency of work
Preparation for life in civil	Role model,	ICT competencies (and
society in the context of	mentor	"information literacy") help in
continuing socio-economic		responsible, ethical and
changes		efficient realisation of new
		tasks and duties

Teacher – School Interaction

Function	Role	ICT Context
Realization of teaching process	Course organiser	ICT in organization and
	Curriculum planner	management of teaching
		process
Development of didactics	Resource developer	Electronic communication,
	Curriculum evaluator	computer simulations,
	Practical teacher	multimedia systems offer an
		important support for subject
		didactics based on ICT
		competencies of teacher and
		learner.

Teacher – School Environment Interaction

Function Role	ICT Context

Partner of parents in pupils' education and upbringing	Planner Evaluator	e-communication as a basis of efficient contact and co-
		operation
Citizen – member of local	Planner	ICT competencies as a
community	Role model	guarantee of ethical and
	Information provider	efficient activities of citizens in
		the knowledge society

Conclusions

New information and communication technologies are very important in the presentday life and work of the teacher. They contribute to changes and shifts in the importance of various roles played by the teacher both in the teaching process as in the interactions with external environment.

Modern society becomes more and more complicated and new technologies break many barriers between individual people and between communities at large. We live in a global village all changes are intrinsically interrelated. The optimum solution to describe complex problems is to introduce model systems that, by introducing one change, trigger other changes adapting themselves to each other and to the internal and external conditions. Such a system has been proposed in physics and called "Active Walk in an Adaptive Landscape" (Lam 1998): "An active walker changes the landscape as it walks, and is influenced by the changed landscape in choosing its next step.

A modern school teacher, in the process of continuous transformations, should not be "a passive walker" that does not change significantly and does not induce changes in its environment. Any educational system as well as its agents, by their nature, have the ability to adapt to external changes, but not always are suitably prepared to do that. The ideas of the complexity theory, born within top research universities, should serve as sources of inspiration for education at all levels. Educational institutions, being *per se* "teaching organisations" shall become also "learning organisations" (Senge 1990) and learn how to apply their great potential for organisational improvement and self-development. The modern ICT can be the most powerful lever to do so, and the "12 roles" may serve as reference coordinated in the multidimensional space of educational changes.

References

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