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KEY ICT COMPETENCES OF KINDERGARTEN TEACHERS

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Abstract

The aim of this paper is to identify the key ICT competences needed by kindergarten teachers for the development and implementation of new technologies in their educational practice in kindergarten. As outlined in the UNESCO document “ICT competency standards for teachers” (2008), in order to live, learn and work successfully in an increasingly difficult, digital and knowledge-based society, teachers must be capable of using technology in an effective way.

Nowadays, kindergarten teachers are not only responsible for children’s upbringing but they complement the educational role of families at home. In this new educational scenario, families and teachers present novel demands as real-time information about centers and its services, tools to track children progress or recommend new activities, new ways of communication, etc. Videogames and multimedia resources, especially those that combine education and entertainment features (*edutainment*) are well-accepted by young children. ICT are not only used as educational tools but also as supporting ones. There are a wide range of online communities targeted to children, families and teachers that offer different services as discussion forums, search engines, educational resources, etc.

There is a lot of well-established early childhood educational policies, supported by national governments and educational institutions, based on the same idea: to provide an interactive and social learning experience based on children’s interest and experimentation. Many of that goals can be realised if the kindergarten teachers are used ICT skills and with support of ICT-based educational processes in early childhood towards better preparing children for the afterwards schooling.

Keywords: ICT in kindergarten, early childhood education, kindergarten teachers ICT competences, edutainment

1. Introduction

The major way of developing the information and communications technology (ICT) capability of citizens is through the implementation of the three facets of ICT - based curriculum which comprise:

- learning about ICT,
- learning with ICT and
- learning through ICT.

It is in this regard that Tanner (2003) presents ICT as discipline, resource and key skill. ICT encompasses a wide range of technologies including mobiles, televisions, video and audio recorders, programmable and remote-operated toys, interactive whiteboards computers as well as any other technologies that can enhance the processes of finding, exploring, analyzing, documenting, exchanging and presenting instruction based information. ICT is also considered as skill in line with literacy and numeracy. ICT promotes learning, motivates and empowers the learner as well as facilitates the job of the teacher.

ICT competencies involve knowledge of skills, knowledge of how and when to apply the skills as well as knowledge of reasons for using the particular ICT or the contributions of that ICT to the solution of problems.

The effective use of ICT in teaching can measurably enhance the learning environment and enrich the educational experience of children. Children with special needs or behavioural difficulties gain in different ways from the use of ICT. ICT supports their motivation and concentration and teachers become more aware of childrens' needs and problems. If it is well used education technology can encourage a more participative and independent approach to learning, thereby laying the foundations for lifelong learning and personal development. With the strategy came a requirement that all teachers must become competent in using ICT in their teaching practice.

2. ICT and early childhood education

Nowadays, there are a lot of well-established early childhood educational policies, supported by national governments and educational institutions, based on the same idea: to provide an interactive and social learning experience based on children's interest and experimentation.

In such a way, the early care main goal is to fulfill the Delors principles: "Learning to be, learning to do, learning to know and learning to live together and to live with others."

The early childhood is a time of rapid growth in all aspects of children's development fostered by their natural curiosity and adult support. Play is a central part of learning at this stage but many young children may still need encouragement and help from adults in order to learn how to interact with peers and playing together. Videogames and multimedia resources, especially those that combine education and entertainment features (*edutainment*) are well-accepted by young children (Walldén and Soronen, 2008). A limited arange of ICT technologies are used in early childhood settings to strengthen many aspects in educational practices. Some research projects consider the utilization of devices as interactive whiteboards and smart tables in kindergartens to foster cooperative work and learning through hands-on.

3. ICT Competency Standards for teachers

UNESCO (United Nations Educational, Scientific and Cultural Organization) established Policy Framework on ICT Competency Standards for teachers¹ aiming to improve teachers (school and kindergarten) practice in all areas of their work, combining ICT skills with innovations in pedagogy, curriculum, and school organization. It is also aimed at teachers use of ICT skills and resources to improve practice, to collaborate colleagues, parents, and kindergarten management.

This is based on the fact that ICT competencies involve knowledge of skills, knowledge of how and when to apply the skills as well as knowledge of reasons for using the particular ICT or the contributions of that ICT to the solution of problems. The technologies involved may include computers along with productivity software ; drill and practice, tutorial, games, and web content.

The tools available to create great learning content continue to improve each year. Developers are focusing on providing products that are easier to use, that are more feature-rich, and that enable users to create engaging content quickly.

3.1. UNESCO ICT Competency Standards Modules

At first stage of development teachers competences related to technology literacy approach include basic digital literacy skills, also necessary for the kindergarten teachers. Digital competences involve the confident and critical use of electronic media for work, leisure and communication.

Technology literacy approach

- Policy
- Curriculum and Assessment
- Pedagogy
- ICT
- Organization & administration
- Teacher Professional Development

¹ for further information please visit: www.unesco.org/en/competency-standards-teachers

4. Kindergarten teachers and Lifelong Learning

In one of the listed references is written: "Technology can make lifelong learning a reality". There is a lot of definitions and concepts of lifelong learning in different countries but I choose as relevant definition for "lifelong learning" from European Commission² which says that it is "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective". This includes all forms of learning: formal (courses and examinations), non-formal (without examinations) and informal (without either courses or examinations). In this policy document the concept of "European lifelong learning area" (which mirrors the earlier one of a European research area) is the area where citizens can move freely to "learn, work and make the most of their knowledge and skills to meet the aims of the EU to be more prosperous, tolerant and democratic". The lifelong learning in general and the continuing education will experience the consistent expansion in the future. Lifelong learning has a very high priority in European policies and action plans.

4.1. Key Competences for lifelong learning

There is eight domains of key competences considered necessary for all in the knowledge-based society.

- Communication in the mother tongue
- Communication in a foreign language
- Mathematical literacy and basic competences in science and technology
- Digital competences
- Learning to learn
- Interpersonal and civic competences
- Entrepreneurship
- Cultural expression

They are all considered equally important, because each of them can contribute to a successful life in a knowledge society. Many of the competences overlap and interlock: aspects essential to one domain support competence in another. Competence in the fundamental basic skills of language, literacy, numeracy and in information and communication technologies (ICT) is an essential foundation for learning, and learning-to-learn supports all other learning activities.

The European Framework of Key Competences stresses the importance of learning-to-learn as key to acquiring other competences and developing capabilities.

² European Commission, Making a European Area of Lifelong Learning a Reality, COM Brussels, Commission of European Communities, 2001, p. 9

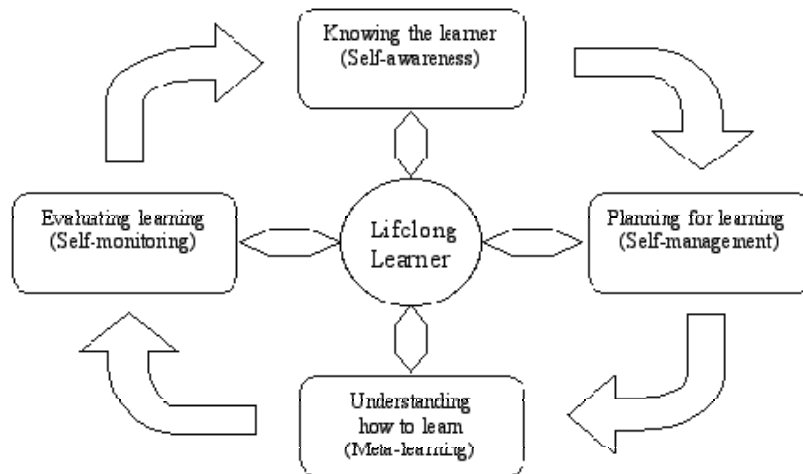


Figure 1: Model of lifelong learning³

As shown in Figure 1, lifelong learning is understood (as a cyclic process with four key pillars(Stäuble, 2005):

- "Knowing the learner (Self awareness)" focuses on understanding the learner's prior knowledge, motivation for and attitudes towards learning (eg. self efficacy). The value system of the learner plays an important role in defining his/her identity.
- "Planning for learning (Self management)" refers to the setting of goals and the development of a plan to achieve these goals.
- "Understanding how to learn (Meta-learning)" describes the awareness that a learner has developed with respect to different approaches to learning (deep versus surface learning; rote versus meaningful learning) and different learning styles.
- "Evaluating learning (Self monitoring)" refers to a systematic analysis of all aspects of the learner's performance. "Self monitoring is synonymous with responsibility to construct meaning ... [and] is very much associated with the ability to be reflective and think critically" (Garrison, cited in Merriam & Caffarella 1999, p. 300). Depending on the goals set initially, the outcomes can be of qualitative, quantitative or affective nature.

5. Situation in Croatia

ICT is an important part of the curriculum in Croatian's early childhood settings. Kindergarten teachers in Croatia acquire ICT skills and competences through their formal education at Faculty of Teacher Education in Zagreb and in few other towns across Croatia. The education for ICT started fifteen years ago. Nowadays teachers are capable for basic ICT skills and competences. Problem of implementing ICT skills is present in Croatian kindergartens because there are not enough computers. Besides, senior kindergarten teachers

³ Stäuble, B. (2005). Using concept maps to develop lifelong learning skills: A case study. In *The Reflective Practitioner*. Proceedings of the 14th Annual Teaching Learning Forum, 3-4 February 2005. Perth: Murdoch University. <http://lsn.curtin.edu.au/tlf/tlf2005/refereed/stauble.html>

are not included in program of additional ICT education as organized for school teachers. It is also noticed that some senior kindergarten teachers are not adequately educated in using ICT .

Kindergarten teachers in Croatia are gathered in Association of Kindergarten Teachers (<http://www.udruga-odgajatelja.hr>). The goals of this Association are to promote development of kindergarten education and practice. Besides, there is Forum where they can exchange knowledge and experiences (<http://www.udruga-odgajatelja.hr/forum/>).

6. Conclusion

Nowadays, kindergarten teachers are needed a comprehensive ICT competences for the development and implementation of new technologies in their educational practice in kindergarten. As outlined in the UNESCO document "ICT competency standards for teachers" (2008) , in order to live, learn and work successfully in an increasingly difficult, digital and knowledge-based society, teachers must be capable of using technology in an effective way. Comprehensive knowledge of ICT skills is also a good base for longlife learning.

Educational authorities in Croatia need to launch adequate ICT education project which have to include all kindergarten teachers. It is necessary to provide more material and human resources in order to improve ICT knowledge and skills for kindergarten teachers. Modern technology is developing rapidly and new generations must learn how to constantly adjust to changes .

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