Chapter 4

Transformation of Individual Learning through Informatics and Information Technology Activities in Primary School

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ABSTRACT

The topic of the individual learning conditions creation can be analysed from the technological as well as pedagogical side. In both cases there is the same fundamental point: how to create valuable and as much as possible natural learning environment? The experience in the application of technologies for personalisation, analysed in scientific literature, reveals newer possibilities for the individual activities support. This encourages taking a different route in analysing individual learning – to interdisciplinary combine the content of close concepts. The paper deals with basic concepts of interdisciplinary content analysis – informatics and information technology impact to an individual learning in primary school.

INTRODUCTION

Learning is usually defined as a change in someone’s behaviour, knowledge, level of skill, or understanding which is long-lasting or permanent and is acquired through experiences rather than through the process of growth or ageing. Learning is understood as the influence of the characteristic individual creative experience application to the individual himself. Changes in behaviour, knowledge, capabilities, understanding, determined by the experience, are individual to each person.

However, learning is inseparable from the social context. On the one hand, it is not the society, but the individual that creates knowledge (LaDuke, 2008). On the other hand, the intellectual
potential of the social environment is reflected in
the individual ideas and capabilities. In addition,
ICT and alteration of the education priorities also
change individual learning. Design of the optimum
learning environment, realisation of the chosen
learning/teaching aims, as well as organisation
of the individual learning/teaching activities are
becoming the objects of interdisciplinary discus-
sion between the researchers of the pedagogy and
information technology.

When talking about the individual learning
through informatics and information technology
activities in a primary school, the uniqueness of
the individual has to be allowed for twofold: pecu-
liarities common to all primary classes’ children
of common age as well as those unique to each
of them have to be noticed. Therefore, the models
of informatics teaching and information technol-
ogy application created for the senior pupils do
not fit for the primary school pupils. Further, it
is noteworthy that the personalised learning en-
vironment design is burdened with the difficulty
of matching the interdisciplinary pedagogical and
technological positions.

The aim of this paper is to characterise individ-
ual learning through informatics and information
technology activities in a primary school while
analysing the notional nuances of technological
and pedagogical concepts and going into the topic
of the learning environment that fits to the primary
school children.

The method of graphical visualisation of the
concepts has been used in order to look at the
content of adjustable concepts in more detail.
Expressing the concept in a different form can
help spotting extra similarities and differences
of the concepts. From the cognitive standpoint
the alteration of the visualisation method helps to
understand better by discovering the foundation
of the comprehension (Duval, 2002).

The means of visualisation has been chosen to
be a metaphor of the geometric figure. This
particular metaphor was chosen because of its
functional similarity.

In order to reach the aim of the paper, personali-
sation types (Fan & Poole, 2006) have been used.
This interdisciplinary personalisation typology,
created based on ICT application, is grounded
on a vast variety of personal individuals’ require-
ments. Hence, such a typology could be valuable
in elaborating the notion of the natural learning
environment.

Main questions for which answers are sought
in this paper: what interdisciplinary information
fits into the concepts used for the description of
individual learning? What informatics activi-
ties are topical in the primary classes? How can
application of the informatics and information
technologies transform individual learning in
primary schools?

FOCUS ON INDIVIDUAL
LEARNING ACTIVITIES

The problem of individuality is topical for design-
ing equipment and software, a learning, commu-
nication and dwelling environment, organizing
markets and search for information.

The teaching is called individualised as a stu-
dent has a possibility to apply the known matters
going into depth of the matter he has to learn. In
such sense, learning individualisation is the aim,
which manifests in the practice through the form
individual learning, face to face learning, differ-
entiated learning, and personal learning.

Individual learning can be described as al-
lowing students to learn at their own place and
according to their own preferred learning style,
and to cover those areas of the syllabus or lesson
which are necessary to their learning. It is an
approach which necessitates the teacher hav-
ing a clear understanding of learning needs of a
student. Such learning can be named as absolute
individualisation. In theory, individual learning
is also possible when teaching the whole class. It
is an approach, in which all individual student’s
distinctions are taken into account while teaching
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