# ADULT EDUCATORS' ICT COMPETENCE IN LATVIA, LITHUANIA AND GERMANY: THEORETICAL FRAMEWORK
## PIEAUGUŠO IZGLĪTOTĀJU IKT KOMPETENCE LATVIJĀ, LIETUVĀ UN VĀCIJĀ: TEORĒTISKĀ SISTĒMA

**Julija Melnikova**
Dr. Researcher, Klaipeda University, julijamelnikova@yahoo.com, Klaipeda, Lithuania
**Jeļena Zaščerinska**
Dr. paed. Leading Researcher, Centre for Education and Innovation Research, knezna@inbox.lv, Riga, Latvia
**Norbert Grünwald**
Dr.rer.nat. Professor, Hochschule Wismar, norbert.gruenwald@hs-wismar.de, Wismar, Germany
**Andreas Ahrens**
Dr.ing.habil. Professor, Hochschule Wismar, andreas.ahrens@hs-wismar.de, Wismar, Germany

**Abstract.** *In the era of digital economics, adult educators' ICT competence is of high research interest as adult educators are the key players in fostering adults' use of ICT in a variety of situations. The purpose of this article is to outline a theoretical framework on developing of adult educators' ICT competence underpinning the elaboration of a new research question. The article provides a theoretical insight on main concepts in ICT education covering the aspect of challenges of ICT teaching and learning in adult education. Approaches and methods used to support ICT teaching and learning in adult education are introduced as well. As the result, the theoretical model for the enhancement of adult educators' ICT competence is designed and the criteria for its analysis are provided. The implications of the article could be useful for university educators, who seek to educate students most effectively with a real intention to become digital entrepreneurs.*
**Keywords:** *adult education, adult educators, digital economy, ICT competence.*

## Introduction

As the cost of data collection, storage and processing continues to decline dramatically and computing power increases, social and economic activities are increasingly migrating to the Internet *(OECD, 2017)*. Technologies, smart applications and other innovations in the digital economy can improve services and help address policy challenges in a wide range of areas, including health, agriculture, public governance, tax, transport, education, and the environment, among others *(OECD, 2017)*. In order to improve the quality of life of the population and competitiveness of economy in Latvia, Lithuania and Germany, the development of competencies and skills to permit a creative and digital society serves as a key priority set to facilitate digital modernization *(Digital Kazakhstan, 2017)*. More professions and working positions emerge that require «hybrid knowledge and skills», namely a combination of knowledge and skills in ICT and another professional domain that focuses on automatisation of professional activity *(Digital Kazakhstan, 2017, p. 14)*. In the era of digital economics, adult educators' ICT competence is of high research interest as adult educators are the key players in fostering adults' use of ICT in a variety of situations.

The development of adult educators' ICT competence and skills to permit a creative and digital society is especially relevant for Baltic Sea Region countries, which have the similar historical background, transition period and traditions in higher education, and are currently seeking to re-arrange their educational systems *(Melnikova, Zaščerinska, 2017)*. Moreover, the process of rapid economic convergence of European Union countries forces the adult education in Baltic Sea Region countries to be competitive not only on local market but on international market as well *(Melnikova, Zaščerinska, 2017)*. That means that adult education sector in Latvia, Lithuania and Germany has to re-think their models

of the learners' preparation as well as of organising the learning process *(Melnikova, Zaščerinska, 2017).*

Adult educators' ICT competence means that adult educators need to be able to help the learners become collaborative, problem-solving, creative learners through using ICT so they will be effective citizens and members of the workforce *(United Nations Educational, Scientific and Cultural Organization, 2011, p. 3).*

Most of the research efforts of the present international research team was put on identifying that digital competence of teachers is an overall concept of such terms as ICT competence of teachers, digital competence of teachers and professional digital competence of teachers *(Grünwald, Pfaffenberger, Melnikova, Zaščerinska, Ahrens, 2016).* Establishment of inter-relationships between competence, experience, digital competence of teachers and professional digital competence of teachers served as a source of a definition of teaching competence of trainers *(Kühn, Gruenwald, Pfaffenberger, Zaščerinska, Ahrens, 2017).* The empirical findings of the research allowed drawing the conclusions that the digital teaching competence of trainers who participated in the empirical study was of the low level *(Kühn, Gruenwald, Pfaffenberger, Zaščerinska, Ahrens, 2017).* Further research facilitated the determination of inter-relationships between educator digital teaching competence, principal, condition and circumstance in order to form an approach to the enhancement of educators' digital teaching competence *(Melnikova, Grünwald, Ahrens, Pfaffenberger, Zaščerinska, 2017).* The theoretical findings of the carried out research allowed shaping the socio-digital approach to the enhancement of educator's digital teaching competence *(Melnikova, Grünwald, Ahrens, Pfaffenberger, Zaščerinska, 2017).* However, theoretical analysis of scientific literature revealed a need in the adjustment of the theoretical framework on adult educators' ICT competence.

**The purpose of this article** is to outline an adjustment of the theoretical framework on developing of adult educators' ICT competence. **The objectives of the article are** to adjust the theoretical framework on adult educators' ICT competence, to provide a theoretical insight on main concepts in ICT education covering the aspect of challenges of ICT teaching and learning in adult education, to introduce approaches and methods used to support ICT teaching and learning in adult education. The **main methods of the research** are scientific literature analysis as well as theoretical modelling.

## Results

Digital literacy consists of the ability to access digital media and ICT, to understand and critically evaluate different aspects of digital media and media contents and to communicate effectively in a variety of contexts. ICT competence, as defined in the EC Recommendation on Key Competences *(European Parliament and Council, 2006)* involves the confident and critical use of ICT for employment, learning, self-development and participation in society. This broad definition of ICT competence provides the necessary context (i.e. the knowledge, skills and attitudes) for working, living and learning in the knowledge society.

The *Adult Educator's Competence* (the competencies) are one response to the challenges and needs identified in recent surveys of and reports on adult education. The competencies identify the knowledge and skills expected of any adult educator. They also offer a structured approach to determining the knowledge and skills that andragogues still need to develop and the professional development activities that will help them to acquire them. Although the competencies are focused on the skills needed to teach effectively across subject areas, teachers also need specific content knowledge and skills related to teaching in their particular field, such as English as a second language, mathematics, career or technical training, etc., in order to be effective.

It is important to remember that adult educators are a diverse group who work in a variety of organizations (for example, school districts, community colleges, non-profit

organizations, correctional facilities, and religious institutions) that serve an equally diverse student population with many different learning needs and goals. Adult education programs have diverse education funding sources (e.g., state, federal), geographic contexts (e.g., urban, suburban, rural), and resources. Depending on the institutional requirements, adult education teachers may or may not have a degree or a relevant educational background in the subject they teach. They also vary in terms of their job status (part-time, full-time), role (lead teacher, mentor, tutor), and experience (beginning teacher, experienced teacher).

*ICT competence for adult educators* can be broadly defined as the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society *(Ala-Mutka, 2011, p. 1)*. This means that the adult educator must make decisions about what kind of digital tools should be used in each teaching-learning situation, how they should be used and why *(Ottestad, Kelentrić, & Guðmundsdóttir, 2014, p. 246)*. It is important to develop this type of awareness during initial educators' training *(Ottestad, Kelentrić, Guðmundsdóttir, 2014, p. 246)*.

Three main dimensions describe adult educators' professional ICT competence *(Ottestad, Kelentrić, & Guðmundsdóttir, 2014, p. 248)*:
- Generic ICT competence cuts across subject disciplines and specifies the general knowledge and skills that educators should obtain in order to function as digital educators. This dimension is most likely identical, or very close to, the already existing descriptions of general digital competence.
- Didactic ICT competence captures the digital specifics in each subject that the individual adult educator deems significant. It is in this dimension that the actual distinctive differences in the didactics between subjects would be described, for example, mathematics taught with ICT versus foreign language or pedagogy taught with ICT.
- Professional oriented ICT competence describes digital traits of the extended teaching profession, the question of what educators need of digital literacy in other parts of the job, for example when they are planning trainings, sorting evaluations, recording marks and detention, communicating with learners and other groups, etc.

There are six main domains that represent broad areas of activity for an adult educator: planning of the training content, needs assessment, designing of the training content, developing training materials, delivery of courses, evaluation of training results and evaluation of training quality. On the basis of the theoretical analysis of research articles the framework of adult educators' ICT competence according to these six domains has been developed:

**ICT use in planning of the training content**
- to be able to identify, assess and select ICT tools for planning of the training content;
- to be able to consider the specific learning objective, context, andragogical approach, and learner group, when selecting ICT tools and planning their use;
- to assess the usefulness of ICT tools in addressing the learning objective, the competence levels of the concrete learner group as well as the andagogical approach chosen.

**ICT use in needs assessment**
- to be able to identify, assess and select ICT tools for learners' needs assessment;
- to be able to use ICT tools in order to identify learners' needs, competence gaps and areas for improvement, plan targeted training and reflect on learners' achievements;
- to be able to enhance the diversity and suitability of needs assessment formats and approaches.

**ICT use in designing of training content**
- to be able to apply appropriate search strategies to identify ICT tools for designing of the training content;
- to be able to select suitable ICT tools for designing of the training content, considering the specific learning context and learning objective;

- to be able to critically evaluate the credibility and reliability of ICT tools for designing of the training content
- to be able to consider possible restrictions to the use of ICT tools;
- to be able to assess the usefulness of ICT tools in addressing the learning objective, the competence levels of the concrete learner group as well as the andragogical approach chosen.

**ICT use in developing training manuals, handouts, and exercises**
- to be able to identify, assess and select ICT tools for the developing of training manuals, handouts, exercises;
- to be able to consider the specific learning objective, context, pedagogical approach, and learner group, when using ICT tools;
- to be able to prepare, edit, change and improve digital content prepared by himself/herself or by others (texts, tables, images, photos, audio records, digital tasks, games, interactive activities, etc.);
- to be able to use ICT tools in preparing integral and complex tasks aiming at learners' own knowledge creation or in creating diversified production, solution of real problems and communication;
- to be able to respect possible restrictions to using/re-using/modifying ICT tools in developing training manuals, handouts, exercises.

**ICT use in delivery of the courses**
- to be able to use ICT tools to support the delivery of training courses;
- to be able to structure the training course so that different ICT activities jointly re-inforce the learning objective;
- to be able to set up learning sessions, activities and interactions in a digital environment;
- to be able to structure and manage content, collaboration and interaction in a digital environment;
- to be able to use ICT tools to respond promptly to learners' needs, interact and guide learners, remotely monitor learners' progress;
- to be able to reflect on the effectiveness and appropriateness of the ICT strategies chosen;
- to be able to experiment with and develop new formats and andragogical methods for training.

**ICT use in evaluation of the training results and assessment of the quality of the training course**
- to be able to use ICT tools to monitor the training process and obtain information on learners' progress;
- to be able to analyse and interpret available evidence on learner activity and progress, including the data generated by the ICT tools used;
- to be able to provide personal feedback and offer differentiated support to learners, based on the data generated by the ICT tools used;
- to be able to use ICT tools for the overall assessment of the quality of training, analyse available evidence and reflect on it;
- to be able to critically reflect on the appropriateness of digital assessment approaches and adapt strategies accordingly.

**Conclusions**

The findings of the present research allow adjusting the theoretical framework on adult educators' ICT competence with the six domains. The proposed framework could serve as the guidelines in adult educators' professional development in order to facilitate their ICT competence. A new research question has been formulated: What are criteria and indicators of the development of adult educators' ICT competence? The present research has *limitations*. The inter-connections between adult educators' ICT competence and six domains have been set. Another limitation is that only theoretical analysis and modelling have been carried out.

Therein, the results of the study cannot be representative for the whole area. Nevertheless, the results of the research may be used as a basis of analysis of adult educators' ICT competence. If the results of other scientific investigations had been available for analysis, different results could have been attained. Further research tends to focus on criteria and indicators of the development of adult educators' ICT competence. Empirical studies to analyse the development of adult educators' ICT competence are planned, too. And a comparative research of more countries could be carried out, as well.

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**Kopsavilkums**

Digitālās ekonomikas laikmetā pieaugušo izglītotāju IKT kompetence ir saistīta ar augstu pētniecības interesi, jo pieaugušo izglītotāji ir galvenie dalībnieki, kas veicina pieaugušo IKT izmantošanu dažādās situācijās. Šī raksta mērķis ir izklāstīt teorētisko pamatu pieaugušo izglītotāju IKT kompetences attīstībai, kas ir pamatā jaunā pētījuma jautājuma izstrādei. Rakstā sniegts teorētiskais ieskats par galvenajiem IKT izglītības jēdzieniem, kas aptver IKT mācību un mācīšanās problēmu aspektu pieaugušo izglītībā. Ieviests arī pieejas un metodes, kas tiek izmantotas, lai atbalstītu IKT mācīšanu un mācīšanos pieaugušo izglītībā. Rezultātā izstrādāts teorētiskais modelis pieaugušo izglītotāju IKT kompetences pilnveidošanai un sniegti tās analīzes kritēriji. Šī raksta ietekme varētu būt noderīga augstskolu pedagogiem, kuri visefektīvāk izglīto studentus ar patiesu nodomu kļūt par digitālajiem uzņēmējiem.