The PreEdTech Project: Improving the Pedagogical and ICT Skills of PreSchool Teachers and Educators in the Digital Era

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Abstract

The article is a study of the PreEdTech (Improving the Pedagogical and ICT skills of PreSchool Teachers and Educators in the Digital Era) project, co-funded by the European Commission under the Erasmus+ Programme, Cooperation partnerships in school education, Ref. no.: 2021-1-RO01-KA220-SCH-000027894. The project aims to provide pre-primary teachers and educators with the necessary means to adapt their activities to the online environment. The project also highlights that parents are pivotal in reaching, communicating with and involving their children in online activities. The project stems from the pandemic context when schools suddenly and unpreparedly turned to online teaching. The project signaled significant discrepancies in the resources and effort placed into online schooling related to the age of children. Thus, whereas children from primary school to high school benefited from resources, time allocated, and teacher involvement, kindergarten children in public and, to a lesser extent, private sectors were (and still are) at risk of being left behind. This was largely due to the lack of methodologies, or knowledge about the potential of tools, websites and other software meant to improve preschool children's online learning experience. There are even stereotypes regarding their online access, often perceived as unsuitable despite the fact that these children are digital natives and their parents usually use the internet and the mobile phone as 'modern pacifiers'. The PreEdTech project comes with a solution to these problems by providing informative documents, practical approaches and suggesting tools for online teaching. The article presents the project and the findings of its research, which underpins the project's results.

Keywords: *pandemic, online teaching, kindergarten children, research*

1. The European context and the PreEdTech project

Due to the closing of schools and kindergartens, the Covid 19 pandemic caused unforeseen changes in education. Without any prior planning, traditional education had to be moved online. Authorities provided some support for teachers but their efforts were mostly directed at primary and secondary schools, leaving children in kindergarten behind.

2. The PreEdTech project's research

The PreEdTech project bridges a gap and relies on field research which highlighted a profound lack of digital and pedagogical assistance available to kindergarten educators during the pandemic. The project's concept is also based on the institutional approach used by EuroEd kindergarten and primary school from March 2020 to April 2021.

2.1 The EuroEd experience

The effective EuroEd kindergarten endeavour while in lockdown served as inspiration for the PreEdTech project [1]. The first step was the improvement of the technological infrastructure and digital resources, followed by alignment to the appropriate pedagogy. The goal of this initiative was rebranding technologically, digitally and pedagogically.

A trans-curricular co-creation process naturally and organically supported the rebranding efforts; in minutely planned and delivered training sessions, teachers with ICT expertise and teachers with long experience in pedagogy exchanged information and best practice examples, enhancing our teachers' digital and pedagogical competencies. Both technical and pedagogical topics were covered, including

"online teaching and student motivation," "online teaching and wellbeing principles", "online classroom management", student motivation, engagement and collaboration and more.

All educators at the EuroEd kindergarten benefited from technical and pedagogical training and engaged in adapting the teaching methods and materials to the online environment. Also, parents were trained to understand the teaching process and their potential involvement, while children received digitally designed materials. The parents' feedback stated quasi-unanimously that the EuroEd kindergarten and primary school's virtual classroom instruction was outstanding due to the teachers' enhanced competencies. Positive feedback was also provided by the Iasi School Inspectorate and education specialists from Cuza University following classroom observation as part of preschool and primary school teaching degrees sessions in March 2021.

2.2 The project's research findings

Our research included desk research as well as interviews with kindergarten teachers and parents about education during the pandemic.

The research conducted by the Romanian National Center for Policy and Evaluation in Education clearly showed that during the lockdown, high school and middle school children were in the limelight while preschoolers were left in the background [2]. Also, the digital platform for sharing academic research, Academia.edu, registered 18,524 research articles in the collection "Schools out but classes on" from April to Oct. 2020, only a few of which superficially dealt with preschool education. Consequently, pre-primary teachers were limited by lack of online resources, clear explanations of procedures, and their students' age-related communication and interaction issues, resulting in a constant cry for parents' help [2,3]. Studies showed that during the lockdown, most kindergarten teachers focused on transferring information and worksheets to children through informal channels (WhatsApp, Facebook) rather than delivering synchronous online lessons. A study conducted by a group of academics from Iasi, Romania, highlighted several challenges teachers identified when teaching at a distance: technical difficulties, lack of time allocated to understanding and using educational-digital tools and resources; lack of training in designing attractive and interactive activities to stimulate children's interest [4,5,6].

Furthermore, even though these children were raised in the digital age, people continued to promote the idea that young children shouldn't use the internet. Additionally, the growing use of digital technology and devices prompted concerns from parents about the detrimental effects of screen time on children's physical health, hours of sleep, participation in physical activities and obesity [4,5,6].

Our discussions with kindergarten teachers revealed the difficulties they faced and the tactics used to overcome them. Educators collaborated, created forums, disseminated information they found useful or interesting, offered support to one another, and looked for answers to issues they encountered.

E-training courses meant to increase understanding of ICT, the usability of e-learning platforms, and online teaching methodologies were delivered. However, these were primarily designed for elementary and secondary school teachers. The content and resources offered by such webinars and courses had to be modified for use by kindegarten teachers. The effectiveness of this adaptation process heavily depended on each teacher individually.

Our interviews also suggested that teachers had trouble digitizing the materials besides coping with online time and class management, student participation and assessment. The courses had to be adjusted to the new teaching methods but most teachers lacked the skills and resources to do so. However, even though they were under a lot of pressure to carry out the necessary educational activities, they worked together to help one another by sharing ideas, knowledge, and resources.

Our research demonstrated that working with parents was crucial. The parents we interviewed stated that they had to carefully monitor their children's behavior, identify and guide them towards solving their problems. Parents faced numerous challenges when attempting to educate their children at home, including trying to focus their children's education while working remotely or lacking digital skills and experience with technological tools and software. Nevertheless, despite the challenges, many parents were able to use technology to facilitate learning. Our findings demonstrated that when well-structured technology tools were offered or recommended by schools, as well as when parents were socially impacted by the opinions of other parents or teachers, they got more involved in their children's learning.

3 The project's results

The project's results are the digital guide, the online course and the handbook, and they were created based on the findings of our research aimed at meeting the needs of kindergarten educators.

3.1 The Teaching in the digital era guide

The Teaching in the Digital Era Guide is a starting point in developing all the other intellectual outputs, the online training course for teachers and the Online Interactive Annual Plan. The Guide has three sections: pedagogical competencies in online teaching; technical competencies in online teaching; teacher-student-parent cooperation. The first section gives insights into online teaching principles, classroom management, online planning, student motivation, student participation, communication, interaction, assessment. The second section provides information to develop and upgrade teachers' technical competencies when teaching asynchronously and synchronously or creating their digital resources and using interactive platforms. The third targets parents and provides means to help children when needed (online rules, digital threats, safety, online home teaching).

3.2 The Teaching in the digital era course

The "Teaching in the Online Era Course" is based on the guide. The main difference between the two project results is that the guide includes a comprehensive pedagogical approach to online teaching whereas the online course materializes this content by applying it to the main disciplines taught in preschool: mathematics, environmental education, language and communication (mother tongue and English).

These four disciplines were chosen as a result of the analysis of the curriculum for early education, as well as because they were identified as common in partner countries and beyond. The Teaching in the Digital Era Course is structured into four units, corresponding to the four above-mentioned school subjects. Each unit consists of two chapters providing teachers with input on the pedagogy underlying online teaching, adapted from the guide, as well as practical tutorials enabling teachers to get familiar with digital platforms, equipment, tools and applications together with their children, peers and parents (Figures 1&2).

Figure 1 Input on the pedagogy underlying online teaching adapted from the guide
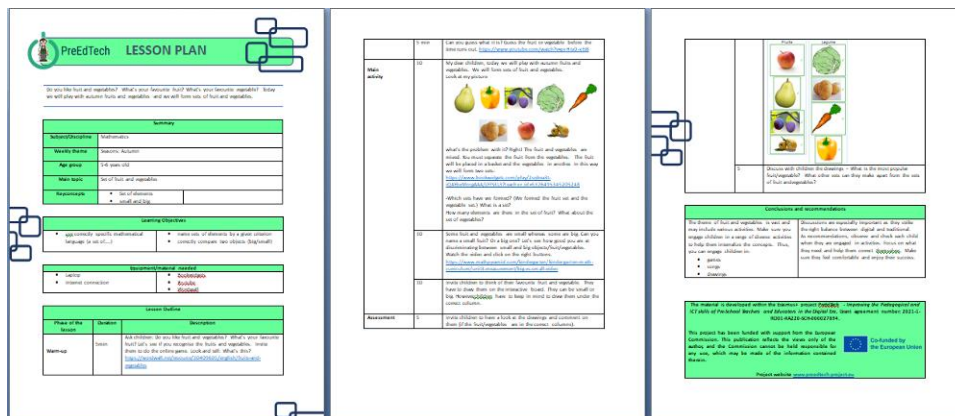

Figure 2 Practical tutorials (BookWidgets)
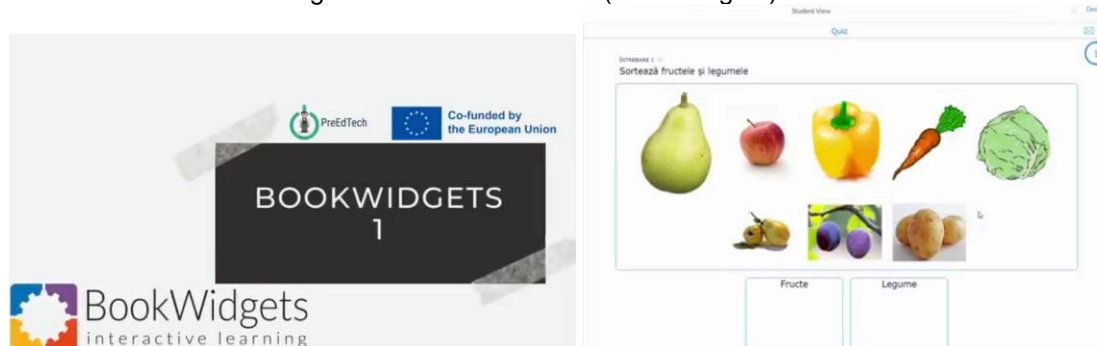
3.3 The Online interactive annual plan handbook

The aim of this output is to open preschool teachers to the use of new technologies and online educational resources in their classes by offering them a ready-made collection of one year activity

resources for four disciplines: Mathematics, Environmental Education, Language and Communication (mother tongue and English). The annual curriculum along with lesson plans and the necessary resources is designed for the age level 5-6 years, but the digital resources can be easily adapted to the needs of all young children (Figure 3).

Figure 3 Lesson plan

The activities focus on sciences encouraging experiential learning development (environmental education and mathematics) and language and communication. Developing modern language skills in pre-schoolers is the third strand, represented by the main foreign language taught in schools in the partner countries - English. For each subject there is an annual planning, which details the social and cognitive acquisitions teachers pursue throughout the school year, the weekly short lesson plans and the digital resources to implement the lessons.

Conclusions

As the project tackles important teaching issues it needed addressing in a transnational manner, covering input and perspectives provided by the partners' experience and expertise. The partnership is composed of eight institutions from Romania, Lithuania, Turkey, Spain and Italy sharing various experiences in the field, especially in the COVID-19 context.

The feedback from teachers has shown that the project's outcomes give teachers all the components and procedures required for successful interactions with children and effective parent collaboration, which is the cornerstone of teachers' performance and wellbeing. The PreEdTech project fulfils teaching and parental needs and fills the gaps in teacher knowledge and training regarding online teaching methods and tools, by developing materials and other products drawing on the experience of EuroED primary school during 2020-2021. This project develops educators' digital and pedagogical skills and provides them with the most appropriate resources for working with kindergarten children. It also strengthens their profiles by equipping them with essential and logically structured open educational resources (OER).

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