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## THE PREEDTECH PROJECT – PREPRIMARY SCHOOL TEACHING IN THE DIGITAL ERA

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### Abstract

The article is a study of the PreEdTeh project (Erasmus + programme), developed within a partnership of kindergartens and education and ICT institutions from Romania, Greece, Italy, Lithuania and Turkey. The innovative project is deeply rooted in the partners' pandemic experience and aims at providing pre-primary teachers with the means of adapting their activities to the online environment. It promotes professional development by strengthening the profiles of educators, empowering and equipping them with digital and pedagogical skills, as well as providing them with essential and logically structured open educational resources (OER), necessary for the developmental needs of preschool children. The article introduces the project's objectives and outputs and gives insights into the development of the PreEdTech Guide, its online course, tutorials, lesson plans and curriculum. These provide teachers with all the elements and steps necessary for successful online activities with children as well as for a good collaboration with parents, which is the basis for teachers' performance and well-being. The paper also presents the feedback collected from teachers participating in the pilot.

### Keywords:

pre-primary educators, pandemic, digital and pedagogical skills, open educational resources.

### The European context

Due to the closure of schools and kindergartens brought on by the SARS-CoV-2 pandemic, teachers had to adapt to online teaching and keep students' interest and the relevance of their classes in the new context. One of the primary issues, however, was that children aged seven and up were the target audience for the educational process supported by the education authorities whereas the kindergarten children were left behind. Teachers of primary, secondary, and high school found a functional approach relatively quickly. Pre-primary teachers were limited on the one hand by the lack of online resources and clear explanations of procedures, on the other hand by their students' age-related communication and interaction issues. All this resulted in a constant cry for parents' help (Florian, B., & Toc, S., 2020; Hosszu, A., & Rughiniş, C., 2020). Furthermore, even though these children are digital natives and their parents frequently use the internet and mobile phones as "modern pacifiers," people still reinforced the assumption that using technology and the internet when very young is inappropriate.

Globally, educational institutions and authorities responded to the COVID19 pandemic differently, with few options open to all children, parents, and teachers, depending on the community resources available and the expertise or experience of the teachers. When everything abruptly moved online and the first lockdown occurred nobody was ready. Teachers worked together, established forums, shared material they discovered or found useful, assisted one another, and searched for solutions to problems they encountered. They eventually received invitations to enrol in several e-training programs to advance their knowledge of ICT, the usability of e-learning platforms, and online teaching techniques.

The problem arose when these training courses specifically addressed school students and primary and secondary teachers, but not kindergarten educators. Thus, teachers working with preschool children had to adapt the information and resources provided by webinars and courses aimed at the other age groups. The success of this adaptation process depended very much on each teacher, individually. Studies show that from March 2020 until the end of the school year 2020-2021, during the lockdown period, most kindergarten teachers focused on transferring information and worksheets to children through informal channels (e.g., WhatsApp, Facebook) rather than delivering synchronous online lessons. In Romania, the National Centre for Policy and Evaluation in Education conducted research which clearly showed that during the suspension of the face-to-face school courses, high school and middle school children were in the limelight while preschoolers were left in the background (Centrul național de politici și evaluare în educație, 2020). The digital platform for sharing academic research, Academia.edu., registered 18,524 research articles in the collection "Schools out but classes on" between April to Oct. 2020, a few of which superficially dealt with preschool education. Another study, "School of the online elements for the innovation of education (Report of the evaluative research)", conducted by a group of university professors of Iasi, Romania, highlighted a number of challenges identified by teachers when teaching at a distance: technical difficulties (lack of devices or devices that did not meet the requirements); lack of educational content (digital resources) in the field of their respective subject areas; teachers' lack of time allocated for understanding and using educational-digital tools and resources in an appropriate way; teachers' lack of training in designing attractive and interactive activities to stimulate the interest of all the children (Botnariuc, P. et al, 2020; European Commission, 2020; IRES, 2020; Velicu, A.,2020; Cezar, M.et al, 2020). As a consequence, the past years widened the gaps and discrimination in accessing quality education in all countries.

### **The PreEdTech project**

To cope with the sudden change brought about by online learning, teachers formed support communities and sought help to deal with the abrupt change to online learning. This is how the idea of this project was born, from the need to provide much-needed support to other kindergarten teachers. The project's idea is even more relevant as it is based on EuroED primary school's institutional approach to Covid preschool education from March 2020 – April 2021 and the lessons its teachers learned. The PreEdTech project aims to fulfil such teaching and parental needs and fill the gaps in teacher knowledge and training regarding online teaching methods and tools, by developing materials and other products derived from the experience of the EuroED primary school during 2020-2021. At EuroEd primary school, there was an early development effort aimed at transferring teaching materials and practices in the online environment and preparing the actors involved in the teaching-learning effort for a different procedure and set of tools. In this respect, teachers benefitted from technical explanatory materials and pedagogical training activities, parents were helped to understand the teaching process and their potential involvement in it, and children were provided with a high-quality set of materials and activities, designed and delivered via digital means. The end result was positive and very positive feedback on the quality of digital teaching from parents and from children. This was clearly shown in the results of a survey form filled in by the parents, who assessed, almost unanimously, that the quality of online teaching at EuroED primary school is very good, mainly due to the teachers' improved set of skills and clear explanations and guides provided to the parents throughout the distance learning period. This endeavour included classroom observation of didactic activities carried out by EuroEd preschool teachers in March 2021 and the feedback for these activities given by the Iasi school Inspectorate and Cuza University education specialists as part of the procedure of preschool and primary school didactic degrees.

The pandemic brought about the forced digitization of education, which will stay. This project is aimed specifically at kindergarten teachers in order to develop their digital and pedagogical skills and to provide them with the most appropriate resources to work with kindergarten students - aged 3-6 years.

### ***The PreEdTech project's objectives***

We came to the current project after considering the dynamics and unpredictability of the contemporary context, how the project's partner institutions adapted to online learning, and the difficulties they encountered during the epidemic. Given the current challenges of distance and digital teaching and learning, the project aims to strengthen the profiles of educators, empower and equip them with digital and pedagogical skills, as well as provide them with essential and logically structured open educational resources (OER), necessary for the

developmental needs of preschool children. The project supports educators as they successfully adopt cutting-edge teaching strategies that are pertinent to the digital transformation of school culture.

### ***The project's partnership***

The issues tackled by the project needed addressing in a transnational manner. The most important benefit resulting from the transnational cooperation proposed by this project was the input and perspectives provided by the background experience and expertise of the partners. The partnership is composed of eight institutions sharing various experiences in the field, especially in the COVID-19 context, and which adapted immediately to remote learning. Thus, the project's consortium consists of four kindergartens, two from Romania – EuroEd and Sfantul Sava, one from Lithuania- Sviesa and one from Turkey- Anafartalar, three non-profit associations with a focus on education from Lithuania - EMundus, Spain - XANO, Italy- Pixel and one private tech company from Italy - Connectis. All the above-mentioned institutions have kindergartens as associated partners, interested in improving the quality of teaching by introducing educational technologies and modern resources to engage and motivate pupils.

### ***Target groups***

The project targets preschool educators, principals, parents, and children. The justification for choosing to target teachers at this level is that they are less fortunate than teachers at higher levels in terms of the accessibility of materials, tools, guidelines, and general resources online. Parents are frequently more than passive participants in an online class: they are crucial to the success of online education. They play a crucial role in engaging preschoolers in activities and reaching out to them. Lack of parental involvement, technical limitations, and unfavourable viewpoints (e.g., distance learning is less effective than traditional learning, young children's eyesight problems like myopia due to increased screen time, and restricted physical activity) can all have an impact on the learning process (Hosszu, A. & Rughiniş, C., 2020).

## **The PreEdTech project's Results**

To create the project's results a mixed team of teachers, trainers and technicians within the project consortium identified the main topics and their subtopics to be approached when designing the structure of the guide. The project's guide was elaborated based on the institutional approach, the research, experience and lessons learned collected and gained by partners during the pandemic between March 2020 – April 2021. This endeavour included classroom observation of didactic activities carried out by EuroEd preschool teachers in March 2021 and the feedback for these activities given by the education specialists from the Iasi school Inspectorate and Cuza University as part of the procedure of preschool and primary school didactic degrees. The contents of the guide can serve, with the appropriate adjustments, as a starting point in online teaching for teachers involved in the next level of teaching and, with suitable amendments, to online secondary school or university teaching.

### ***The Teaching in the Digital Era Guide***

The *Teaching in the Digital Era Guide* is the main result. For educators and caregivers, the *Teaching in the Digital Era Guide* offers priceless insights into useful methods and resources for online teaching. There are three sections in the Guide. The first discusses the pedagogical strategy in full and offers the hints, ideas, and techniques required to support the online teaching procedure. This section seeks to address issues including online teaching principles, student motivation, online assessment, class management, lesson planning, and welfare, among other things. The technological elements of online instruction are the subject of the second section (skills and tips, account creation, online classroom administration, modifying settings, ensuring security, creating digital resources and using interactive platforms etc.). The third section examines topics related to online safety for children and parents.

The *Teaching in the Digital Era Guide* includes the following chapters:

Introduction

About the Guide

Chapter 1 - Pedagogical Competencies in online teaching (Sviesa + Emundus + Pixel)

- 1.1. The main principles of online teaching and activities to implement them
- 1.2. Stimulating children's motivation
- 1.3. Classroom management and online planning
- 1.4. Synchronous and asynchronous activities. Face-to-face, blended and hybrid lessons
- 1.5. Managing online wellbeing
- 1.6. Assessment in online teaching (Pixel)

Chapter 2 - Technical Competencies in online teaching (Xano, Pixel, Connectis + EuroEd)

- 2.1. Skills and tips for using Microsoft Office (Word, PowerPoint, Excel)
- 2.2. Asynchronous teaching. Creating an online workspace for children (Google accounts, Google classroom)
- 2.3. Synchronous teaching. How to use online platforms in teaching (Zoom, Webex, Teams)
- 2.4. How to create digital resources and use interactive platforms (Bookwidgets, World wall, Liveworksheets, Canva, Animaker, Kahoot)

Chapter 3 - Teacher-Student-Parent cooperation

(Sf.Sava + EuroEd + Anafartalar)

- 3.1. Online learning is not an enemy. Rules for online learning for small-age children
- 3.2. Digital Threats and Online safety skills
- 3.3. How to involve parents in the online learning process of their children
- 3.4. Useful approaches and tools to online teaching at home

### ***The Teaching in the Online Era Course***

The *Teaching in the Online Era Course* relies on the Guide. The main difference between the two project results is that the Guide includes a theoretical comprehensive approach to online teaching whereas the online course applies theory into practice and demonstrates how this theory can be applied to the main subjects taught in preschool: Mathematics, Environmental Education, Language and Communication in the children's mother tongue and English. The structure of the *Teaching in the Digital Era online Course* is divided into four units: Mathematics, Environmental Education, Language and Communication in children's mother tongue and English. Each unit has two chapters. Chapter one is a theoretical part meant to develop and improve educators' pedagogical, technical and teacher-student-parent cooperation competencies in online teaching. It comprises ppt presentations, in-depths pdf detailed contents and a final quiz. Chapter two is practical and consists of tutorials teaching educators how to produce digital resources for their discipline. Each unit is accompanied by an evaluation test.

Chapter One: Learn the use of these TOOLS (account creation, functionalities, opportunities and limits)

1. How to create a Gmail account
2. How to use Google Drive
3. How to use Google Docs, Google Drive, Google Forms
4. How to use BookWidgets
5. How to use Google Classroom
6. How to use Google Meet
7. How to use the Zoom platform
8. How to use WordWall
9. How to use Animaker
10. How to use Genially
11. How to use Storyboards

Chapter Two: Learn the use of these TOOLS applied for specific disciplines (Math, Environment, Language and Communication, English)

1. How to use Google Drive to archive teaching resources
2. Using Google Docs, Google Forms, Google Sheets, Google Presentations to create teaching resources
3. Using BookWidgets to create specific exercises for children
4. Example of Google Classroom used in a lesson with children
5. Example of Google Meet used in a lesson with children
6. How to use the Zoom platform for synchronous teaching

7. How to use WordWall to create digital exercise for Math
8. Using Animaker to use animated teaching resources for environmental education
9. Genially's applicability in English lessons
10. Create Storyboards for the Language and Communication discipline

### ***The Online Interactive Annual Plan Handbook***

The goal of this project's output is to inspire preschool teachers to include cutting-edge technology and online learning materials in their lessons. It includes a ready-made collection of materials and online lesson plans for four academic subjects—mathematics, environmental education, language and communication—in both the student's mother tongue and English. The Handbook offers teachers four annual curricula for mathematics, environmental education, language and communication—mother tongue and English—as well as lesson plans for 30 weeks for each subject (a total of 120 lesson plans) and relevant digital resources. It aims at children aged 5 to 6 years old. Its purpose is to support teachers by providing all the tools they require in one pack, including lesson plans and the materials needed to implement a one-year preschool curriculum.

### **Teachers' feedback**

The project's results were tested on 30 pre-primary teachers in each country in January-March 2023. The feedback shows that the project's results have impacted the participants in diverse ways so that they are better prepared for the current challenges kindergartens face. Thus, in their opinion, the project's results:

- have provided teachers and kindergartens with standardized online teaching principles to organize online learning/teaching processes. As the online teaching principles express the basic requirements for educational objectives, content, methods, assessment, they are essential in contributing to creating a safe and rigorous framework for learning/teaching processes (online/blended).
- have increased and diversified the way teachers implement learning activities with preschoolers. The guide and its course provide teachers with a wide range of materials, tips and hands-on activities to use with children.
- have provided teachers with better strategies/activities to teach those children who cannot attend face-to-face classes every day due to health issues.
- have raised teachers' awareness of best practices to adapt an offline content to an online course.
- have enabled teachers to connect and relate to parents so that parents have become more involved in their offspring's school development for the child's benefit
- have encouraged the development of a new type of teacher: focused on children and better prepared for challenges while coordinating technology, pedagogy and content effectively and creatively.
- have increased the prestige of the schools as well as parents' trust in teachers and schools.

All participants agreed that the project's results provide teachers with all the elements and steps necessary for successful activities with children and good collaboration with parents, which is the basis for teachers' performance and well-being.

### **Conclusions**

The epidemiological crisis has brought on issues which affect the entire world. In teaching, these issues are an increase in distance teaching and learning and in the use of digital resources. Hence, this project is specifically designed for kindergarten teachers to help them improve their digital and pedagogical skills and equip them with the tools they need to engage with kindergarten children of ages ranging from three to six. Given the current challenges of distance and digital teaching and learning, the project aims to strengthen the profiles of educators, empower and equip them with digital and pedagogical skills, as well as to provide them with essential and logically structured open educational resources (OER), necessary for the developmental needs of preschool children. The initiative enables educators to implement cutting-edge instructional approaches which are appropriate for the digital change in school culture.

The project meets the needs of both target groups and partners through the following outputs:

- a concrete guide on how to organize an online lesson with young children. The Guide in question addresses the problem of online learning from both technical and pedagogical perspectives, providing teachers with the complete picture and pursuing both the development of teachers' digital skills and the adaptation of pedagogical doctrines related to the use of new technologies.

- basic digital instructions for parents and caretakers to support children in the instructional-educational process.

- online courses for educators focusing on four basic subjects taught at the preschool level (science - mathematics, environmental knowledge, communication in mother tongue, and English).

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