The Digital Teachers Project: A Step towards Empowering Teachers for More Equitable Education

Abstract

This study aims to present preliminary findings of the Digital Teachers Project that is carried out with elementary schools teachers in Turkey, which is basically designed to develop and improve their digital literacy and competencies. This project aims to contribute to digital transformation in education by increasing and improving the digital competencies of teachers who have difficulties in using digital technologies in their classes, especially during the emergency remote education we are experiencing due to the pandemic. Designed based on, "learning by doing" approach, the project was highly appreciated by the teachers and completion rates and teachers' satisfaction levels show that the 'Digital Teachers' Project offers a viable and sustainable model for in-service teacher education.

1. Objectives or purposes

The current study aims to present the preliminary findings from the 'Digital Teachers' Project that is carried out with elementary schools teachers in Turkey, which is basically designed to develop and improve their digital literacy and competencies.

Supporting teachers' professional development has been shown to result in improvement of their educational activities in return. It is known that the increase in the quality and effectiveness of education is directly proportional to the increase and improvement of teachers' skills (Hattie, 2003). What is more, teachers often report that they need support especially for the integration of Information and Communication Technologies (ICT) into education. In line with this, in the 2018 TALIS (Teaching and Learning International Survey) report that examines teacher qualifications and teachers needs regarding their professional development, it is recommended to establish mechanisms that support teachers in order to integrate ICT into teaching (OECD, 2019). It is further stated that such support should aim to increase the competencies for effective use of technology in the classroom rather than presenting a narrow perspective focusing solely on the use of ICT tools (OECD, 2019; TEDMEM, 2019). This need, which was reported before the pandemic, has become even more evident and urgent with the sudden outbreak and rapid spread of COVID-19. Increasing the digital competencies of teachers, which is among the medium and long-term goals of almost all education systems, has emerged as an urgent and pressing need, especially with the emergency remote education that took off with the pandemic. In the 2020 education evaluation report prepared by the Turkish Education Association, it was emphasized that no teacher should be left behind in terms of digital competencies (TEDMEM, 2021). Based on this need, the Digital Teachers Project, which was started to be developed as of July 6, 2020; aims to contribute to digital transformation in education by increasing and improving the digital competencies of teachers who have difficulties in using digital technologies in their classes, especially during the emergency remote education we are experiencing due to the pandemic.

2. Perspective(s) or theoretical framework

The pedagogical basis of the project was solely based on the "learning by doing" approach expounded by Dewey, which is basically a hands-on approach to learning, meaning learners must interact with their environment in order to adapt and learn. Using this as the main pillar, 'Digital Teachers' Project offered real-life practical opportunities with scenarios for classroom practice, where teachers would have the opportunity to practice and hone the skills that they have newly acquired in a safe environment. Furthermore, by blending the strengths of distance and face-to-face education, and utilizing a flipped learning approach; the curriculum is designed in two phases. The first phase was planned to last for 10 weeks; which basically consisted of five modules including such topics like digital citizenship and internet security; creativity and visual design (infographics, effective presentations, video and animations); critical thinking and measurement and evaluation. Each module consisted of an interactive asynchronous content developed with an interdisciplinary approach along with synchronous lessons facilitated by instructors who are experts in the field of educational technology. The asynchronous parts consisted of interactive content followed by either a knowledge test related to the

conceptual content or a practical assignment such as preparing infographics for a selected topic from the school curriculum, etc. that give teachers an opportunity to apply what they have learned so far related to the procedural, skill-based content, both of which were prepared regarding the nature of content covered in the module. Furthermore, the synchronous lessons were conducted not only to reinforce the concepts and skills covered in the asynchronous parts but also to overcome any probable misconceptions; provide use case scenarios as well as to give feedback to the materials created by teachers to fulfill the hands-on assignments. Last but not least, three different seminars offered by expert academics were conducted based on the teachers' interests to further enrich their experience. After completion of their 10 week-long hands-on experience, based on their ranking regarding the completion scores, a total of 105 teachers were selected to participate to the second phase training on "virtual and augmented reality technologies in education." Similar to the first phase, this part also consisted of asynchronous and synchronous lessons utilizing the blended learning approach to facilitate teachers to further add new skills such as creating 3D virtual environments, etc. upon the basic digital literacy they have successfully mastered within the first phase, yet shorter. The second phase is designed to fit into a shorter period of two weeks, where the teachers have 12 days to conquer the asynchronous content followed by a two-day intensive synchronous training that fits into one weekend. During these two days, teachers further reinforce what they have learned from the asynchronous lessons by hands-on applications with the help of facilitators, i.e. the experts from the first phase. They also worked in groups of three to plan, design and create a 3D virtual environment in alignment with one or more school subjects within the curricula, which is attained as the final product of a small-scale project that were shared in a virtual showcase. Furthermore, all teachers who were entitled to participate in this second phase of the project also received 30 virtual reality glasses donated to them to use with their students not only to explore 3D virtual content they have created but also other interesting readymade videos, interactive materials and places within their classrooms.

3. Methods, techniques, or modes of inquiry

Since the current study aims to depict a complete illustration of the 'Digital Teachers' Project by putting its focus on to describe and interpret what is happening, rather than answering questions asking the reason for the phenomena under scrutiny (Cohen, Manion, & Morrison, 2007), it is designed as a descriptive study. The main data collection methods were utilizing surveys with open ended questions to gather teachers' opinions, feedback, and statements along with administering various scales such as self-efficacy, etc. throughout the course of the project. The collected data were then analyzed using descriptive statistics.

4. Data sources, evidence, objects, or materials

The main data sources were 1000 teachers from 10 different cities with various socioeconomic textures in Turkey, more specifically; Adana, Ağrı, Ankara, Aydın, Erzurum, Gaziantep, İstanbul, İzmir, Kahramanmaraş and Samsun. However, 872 teachers successfully completed the 10-week long experience. Of these 872 teachers participated in the first phase, 63.4% were female and 36.6% were male. The proportion of female to male teachers was also similar for the 105 teachers, who participated in the second phase, where 69% were female and 31% were male.

The target audience of the project was primary school teachers who work in public schools and need support in the use of technology in education. 75% of the project quota is reserved for classroom teachers. The most important reason for the teachers in this group is that they have an important role in the future of Turkey, as they will have the chance to have a positive influence on raising the future generations from a young age as well as to contribute to the educational digital transformation.

5. Results and/or substantiated conclusions or warrants for arguments/point of view

At the end of the first period of the project, teachers used technology effectively, efficiently and satisfactorily in their education processes, produced their own digital content, and even overcame the fears and anxieties they experienced while using digital technologies.

While 722 of the teachers successfully completed the modules and assignments and were entitled to receive certificates of achievement; 146 were entitled to receive certificates of participation. Only the remaining 132 teachers dropped out. According to the results of the satisfaction survey sent to the teachers, almost all of the teachers stated that the project went well or very well for 10 weeks (95.5%) and stated that it contributed to them in the best way (94.6%). Teachers reported that they had easy access to the digital teachers portal during the training (90.5%) and that they found the training content quite adequate (95%). While more than half of the teachers found the training period ideal (62.5%), some (37.5%) wanted it to be longer. When the satisfaction levels for the lessons and assignments given were examined, it was seen that the teachers found the synchronous lessons (86.7%), asynchronous lessons (96%) and homework (90.4%) good and very good during the project.

As a result, it was seen that the project was highly appreciated by teachers and contributed significantly to increasing their digital competencies. In this respect, the 'Digital Teachers' Project offers a viable and sustainable model for in-service teacher education. The project, which completed its 2nd term in June 2021, will be developed with the feedback received and will continue its 3rd term training in September 2021.

6. Scientific or scholarly significance of the study or work

Designed based on "learning by doing" approach, the Digital Teachers Project aims to improve digital literacy skills and competencies of elementary school teachers in Turkey. The goal of this study is to present preliminary findings of the project, and inform readers about the digital teachers' experiences on this 10 week-long professional development program which utilizes flipped learning approach. The results obtained from teacher satisfaction survey and program completion rates could be considered as very promising. Results from this study have the potential to shed light on ways to design and improve in-service teacher professional development programs, and more specifically on how to improve digital literacy skills and competencies of teachers.

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