

Integrating Mobile Applications into Teacher Education

Reporting

Project Information

TeachEDMobile

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Coordinated by
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Final Report Summary - TEACHEDMOBILE (Integrating Mobile Applications into Teacher Education)

The main objective of the TeachEdMobile project was to provide, through research and development, methodological and curricular support to teacher educators so that they have research informed resources and curriculum for the integration of mobile applications into their teacher education programs. Under this primary objective, the project aimed to achieve the following sub-objectives:

1. To establish criterion-referenced assessments with preservice teachers that will help to judge the educational value of mobile applications, provide a baseline for the teacher education curriculum, and provide ideas for new mobile applications that could potentially help produce usable applications.
2. To develop resources for teacher educators to help preservice teachers learn about mobile applications and apply it to instructional environments with learners.
3. To develop and test research instruments that assess evidence of preservice teachers' knowledge of the effective integration of mobile applications into their teaching settings.
4. To design and deliver a new "Going Mobile in Teacher Education" open course to develop preservice teachers' knowledge of effective integration of mobile applications and disseminate the research-informed

mobile application curriculum to the interested educators in Europe and around the world.

5. To perform Marie Curie outreach activities.

The main results show that:

1. In the mobile learning and teacher education literature; Variations exist in definitions related to mobile learning and technologies; (b) theoretical and conceptual perspectives are scarcely reported; (c) engagement with mobile learning and devices is primarily reported as being beneficial; (d) case study is the most common methodology, generally in a preservice teacher education context; and (e) several pedagogical affordances support mobile learning integration into teacher education settings.
2. Educational mobile apps can be evaluated under five criteria categories: (a) Pedagogy (e.g. pedagogical strategy, motivation, learner, multimedia, and assessment), (b) technical usability (e.g. visibility, user control, efficient use, support, recognition, visual design, error prevention, consistency and standards, (c) content (e.g. curricular fit, scope, validity, sequence, language), (d) connectivity (e.g. sharing, communication), and (e) contextuality (e.g. authenticity, learning in different contexts).
3. The PTC3 (Pedagogy, Technical usability, Content, Connectivity, Contextuality) framework is developed to provide a baseline for assessing mobile-TPACK evident in preservice teachers' lesson plans, reflections, self-assessment and interviews that can be used as a reliable instrument in teacher training programs.
4. The PTC3 framework help evaluate the affordances and pedagogical potentials of educational mobile apps.
5. The PTC3 framework and the instrument was validated with tests conducted with in-service STEM (Science, Technology, Engineering and Mathematics) education teachers on STEM apps.
5. Teachers' observation and reflection skills improves with educational mobile apps that is evaluated with the PTC3 framework. The app quickens teachers' feedback process providing more focused feedback and removing time barrier.
6. There is a positive relation between teacher education strategies and preservice teachers' TPACK. Reflection and teacher educators' as role models are the most frequently used teacher education strategies in teacher education programs in Turkey.
7. Preservice teacher characteristics such as technological pedagogical content knowledge (TPACK), go together with the influence of their teacher training.
8. Preservice teachers can be clustered on the basis of their TPACK, a typical set of ICT-related characteristics (e.g. general ICT attitudes, attitudes towards ICT in education, ease of use, ICT self-efficacy), and the perceived support at their training institution to adequately integrate ICT in education. Two profiles can be distinguished, (2) TPACK and other individual ICT-related characteristics are positively correlated, and (3) preservice teachers in a profile with strong TPACK attitudes, and self

positively correlated, and (5) preservice teachers in a profile with strong TPACK, attitudes, and self-efficacy scores also report high scores on the support they perceive at their teacher training institution.

9. Preservice teachers' knowledge of effective integration of mobile applications can be enhanced with hands-on activities implemented in the Going Mobile in Teacher Education course.

This research advanced the knowledge base on “teacher knowledge” and “ICT” integration in Europe with a focus on enhancing preservice teachers' TPACK and their knowledge of effective integration of educational mobile apps in their future classrooms. We are confident that exposing preservice teachers with opportunities of technology integration in teacher training programs will help their future classroom practices. Particularly, the evaluation activities with the PTC3 framework will improve their understanding of educational mobile app use in classrooms. This research is one of the early pioneers in Europe in creating research informed practices and guidelines on the integration of mobile applications -recognized as one of the most important technologies in the near future in education- into teacher education, and expectantly contribute to the teacher education research and development programs across Europe. The results of this project will lead to the overall benefit of preparing tomorrow's European teachers with appropriate skills and knowledge regarding the use of emerging technologies in their classrooms and contribute to equipping Europe's young population with digital competence to gain and maintain its competitive advantage in the global economy.

Project website: <http://teachedmobile.eds.metu.edu.tr>

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