Chapter 10
Junior High School Pupils' Perceptions and Self-Efficacy of Using Mobile Devices in the Learning Procedure

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ABSTRACT

The study of this chapter investigated junior high school pupils' perceptions and self-efficacy of using mobile devices in the learning procedure. A 33-item questionnaire was administered to 91 pupils aged 12-15 years old in different Greek schools. Most of the pupils had showed favorable perceptions about the use of mobile devices for educational purposes. Nevertheless, the majority of pupils had a relatively medium degree of self-efficacy of using mobile devices in learning activities. Perceived usefulness was indicated as the major factor in predicting the adoption and use of mobile devices for educational purposes. The higher the level of perceived usefulness pupils have about mobile devices, the higher the possibility to use mobile devices as a learning tool. Pupils were more interested in using mobile devices for learning mathematics, history, English, and ancient Greek language. The findings of this study have implications for secondary education instructors, policy makers, and researchers.

INTRODUCTION

Nowadays, the use of mobile technology, such as smartphones and tablets, in all levels of education, has gained the interest of many researchers/institutions. The advanced features of these devices include many sophisticated applications, such as Global Positioning System (GPS), smart sensors, activity trackers, navigation, capturing objects and events and accessing web-based information (Nikolopoulou, 2019).

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These functions, combined with the new synchronous communication/group meetings capabilities, have made mobile devices (MD) very popular among pupils (Lee et al., 2019; Mehdipour & Zerehkafi, 2013). As a result, literature focuses on how the use of MD can be embodied in formal learning environments to facilitate pupils' learning procedure (Bartholomew & Reeve, 2018; Domingo & Garganté, 2016; Nikolopoulou & Gialamas, 2017; Nikolopoulou, 2019).

The use of MD for educational purposes is also called "mobile learning". Mobile learning aims not only at facilitating teaching and learning procedure, but also at improving students' attitudes toward the usage of MD in learning environments (Wu et al., 2012; Jones et al., 2013; Nikolopoulou & Gialamas, 2017).

Mobile learning possesses the potential to extend the reach of learning procedure, and make it even more widely available and accessible (Mehdipour & Zerehkafi, 2013; Nikolopoulou & Gialamas, 2017). Therefore, the implementation of mobile learning in the classroom include several benefits compared to traditional learning environments (Asabere, 2013; Liu et al., 2014; Mehdipour & Zerehkafi, 2013; Sung, Hou, Liu, & Chang 2010; Vishwakarma, 2015):

- Mobile learning can be used anytime, and learning content can be accessed anywhere.
- Mobile learning enhances interaction between instructors and learners
- Mobile learning promotes collaboration among students and teachers
- Mobile learning assists students to improve their literacy and numeracy skills, and also to recognize their learning abilities
- Mobile learning improves language and content learning and attitudes toward learning
- Mobile learning increases the time dedicated to learning away from the classroom settings
- Mobile learning extends the interaction among peers as far as problem-solving strategies concerns
- Mobile learning helps to make the learning experience more enjoyable, and therefore, attracts hesitant students
- The use of mobile learning for communication, also focuses on a larger learning activity
- Mobile learning supports and enhances students' self-efficacy

The potential of the educational usage of MD, may include gathering and sharing information (Kaliisa, Palmer & Miller, 2019), skills and knowledge construction (Hwang & Chang, 2021; Zhai et al., 2019), collaborative learning (Caballé, Xhafa & Barolli, 2010; Fakomogbon & Bolaji, 2017), and systematic lifelong learning experience (Nordin, Embi & Yunus, 2010).

Collaborative learning, as far as the use of MD among pupils concerns, refers to the educational method of teaching and learning within groups of students working together to solve a problem, complete a homework, or create a project (Rodríguez, Riaza, & Gómez, 2017). Learners who participate in collaborative practices, have the opportunity to talk to peers, share ideas, exchange information. Therefore, collaborative learning via MD usage is very important mainly because help students to be actively engaged in the procedure of construct their knowledge (Marjan, & Mozhgan, 2012; Rodríguez, Riaza, & Gómez, 2017).

Especially in high school, there are several aspects of MD usage aiming at enhancing pupils' learning. Students can clearly define their learning objectives as well as the educational activities in their classroom, in which they want to be involved (Nikolopoulou & Gialamas, 2017; Nikolopoulou, 2019; Wan Hamzah et al., 2020). Moreover, the use of effective mobile applications encourages engagement to the learning procedure, interaction, and collaboration among pupils (Nikolopoulou, 2019; Miller &