

ED.ARTS.4

USAGE OF TECHNOLOGY IN SCIENCE TEACHING AND LEARNING IN SRI LANKA: CAN THE MOBILE PHONE BE IDEAL?

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Integration of Information Communication Technology (ICT) enhances the effectiveness of science teaching and learning. Recent research suggests that both the functions and the attributes of mobile phones can support science teaching and learning processes since they offer a variety of facilities. Thus they may render opportunities such as collaborative, contextual and authentic learning, to students while connecting the classroom with the outside world.

In Sri Lanka ICT integration into science teaching and learning is not common due to the lack of ICT resources in schools. Even though mobile phones are cheap, common, and teenagers are well aware of its functions, mobile phones are not yet introduced into Sri Lankan schools as a teaching or learning tool. Therefore, the focus of this study is to investigate whether mobile phones can be integrated into Sri Lankan schools in order to enhance the effectiveness in science teaching and learning.

The current study used the mixed method approach. First, Sri Lankan teachers' readiness to use mobile phones in teaching was assessed focusing on one province in Sri Lanka. A survey questionnaire of 200 science teachers and follow-up interviews with 18 deliberately selected teachers were used in this process. Then a Continuous Professional Development (CPD) Workshop was carried out for these 18 teachers. During this, the teachers developed four science lessons where mobile phones were integrated and these lessons were subsequently implemented in four real classroom settings. Finally, the teachers were brought together for a Review Workshop to discuss their views and experiences in using mobile phones in science teaching and learning.

During the workshops and lesson implementation, data were collected through observation using audio, video recordings and field notes. The data collected from the CPD workshop and lesson implementations were analysed using thematic analysis with the help of NVivo8 qualitative data analysis software. The findings show that the functions and attributes of a mobile phone provided support for science teaching and learning during planning, implementation and evaluation stages of a lesson. Particularly, it was found that the camera function was useful during the planning and implementation stages of science lessons. Further, the Bluetooth device enabled the teacher and students to share the learning materials free of charge, during the planning stage.

The main limitation of this study was the selection of participants from a single province in Sri Lanka. Furthermore, these results are based only on four lessons. Thus, further studies need to be carried out with a greater number of participants and in different contexts before making broad generalizations.