Item	Content
Introduction	This case study presents the development and implementation of a professional development workshop series on integrating mobile phones into science teaching for a group of secondary science teachers (5 male and 13 female) in Sri Lanka. The teachers were selected purposively based on their reported competence in using mobile phone functions and their positive attitude towards the use of mobile phones as shown in their responses to an earlier questionnaire survey. The series comprised a 3-day Planning Workshop followed by implementation of the planned lessons in real classrooms and a subsequent 1-day Reviewing Workshop. During the Planning Workshop, teachers were provided with a hands-on-session on the use of mobile phones in science teaching followed by collaborative lesson planning activities. The methodological approach taken to evaluating the initiative was qualitative, and data were collected using observations and fieldnotes. The data were analysed using thematic analysis techniques with the support of NVivo8 (QSR International Pty Ltd., Victoria, Australia) qualitative data analysis software. It was found that as professional development for teachers was provided separately as Planning and Reviewing Workshops, these workshops supported the teachers in recognizing the educational potential of mobile phones, in learning how to use them in science teaching and learning, in changing their attitudes towards the use of mobile phones in teaching and in sharing knowledge and skills relating to mobile phone applications in science teaching and learning. ***The workshops*** ***Planning Workshop*** Day 1: a) ***brainstorming session*** in order to gather participants' existing views on the use of mobile phones in teaching and learning. b) ***group discussion*** stimulated by a PowerPoint presentation on "mobile phones for school teaching and learning." c) ***the hands-on session***, which provided practical experience for the participants on how to use mobile phones in science teaching and learning. e) **main activities**: four working groups: Each group chose a lesson from the grades 6–11 national science curriculum into which mobile phones could be integrated and made initial plans as to how this might take place. Day 2: a) group discussion following a PowerPoint presentation on Shulman's pedagogical actions and reasoning model, which describes the activities that the teacher engages in when creating instructions for teaching and learning. During this, the aspects that needed to be considered when designing science lessons while integrating mobile phones were emphasised. This included considering students' knowledge and skills about mobile phone use, teachers' competence in using them and selecting the technology appropriately for the relevant activities. b) ***lesson plan drafted by each group***: referring to the stages of Shulman's model. c) ***feedback from peers***: used to refine the lesson plans. Day 3 (a week after Day 2): a) ***role playing***: the designed lessons were role-played by a member of a group while the others acted as students. b) ***group discussion***: at the end of the role-play of each lesson where the pedagogical practices and the ways of using technologies to support these practices were critically evaluated. ***Reviewing Workshop****:* During the Review Workshop, the teachers presented their experiences, reflections and thoughts about the use of mobile phones in science teaching and learning.
Type of institution involved	Secondary School
Title of the methodology used	Integrating mobile phones into teaching and learning: A case study of teacher training through professional development workshops
Type of educator	Secondary Science Teachers
Tool/tools used	Mobile phones, NViVo8
Main Challenges, Key Success & Enabling Factors	Even though the potential of ICT and mobile phones are now recognised, one barrier to them being exploited in teaching and learning is the lack of teachers' confidence in the use of technology. Since 1994 in Sri Lanka, the Ministry of Education has implemented a number of initiatives to integrate ICT into teaching and learning. Even so, the computer to student ratio is 1:130 and, at present, the available ICT resources in most of the schools are inadequate. However, the penetration level of mobile phones in Sri Lanka is high and reached 70% by late 2010. Furthermore, mobile phones are cheaper than computers and most students know how to use them. Therefore, it appeared worthwhile to introduce the mobile phone as a teaching and learning tool to the Sri Lankan school system. However, it is important to note that the teachers in Sri Lanka are not generally acquainted with the educational potential of mobile phones, and teachers' personal use of ICT is also limited.
Lessons Learnt & Recommendations	This case study has shown how structuring professional development workshops separately as a Planning Workshop and a Reviewing Workshop around an opportunity to implement lessons in real classroom settings provided many opportunities to develop teachers' knowledge, skills and attitudes towards the use of mobile phones in science teaching and learning. These opportunities included both developing their students' understanding of the concepts of science and their engagement with science processes and skills such as observation and recording. Providing a hands-on-session at the beginning of the Planning Workshop allowed teachers to explore the potential of mobile phones for science teaching. Moreover, including activities that lead to whole group discussions and allowing teachers to engage in activities in small groups both in Planning and Reviewing workshops enhanced the teachers' professional development opportunities. These created a favourable environment in which to share knowledge and skills with each other as well as with the researcher. However, while these workshops provided a successful one-off training initiative that supported the teachers to integrate mobile phones into their lessons, further studies should be carried out to investigate the sustainability of this type of professional development in Sri Lankan schools.
Country	Sri Lanka

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