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# Enhancing Fieldwork Learning Using Mobile Technologies



 Springer

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# Preface

Recent advancements in hardware, software, battery life and durability of portable devices have led to the development of tablet computers and other associated mobile technologies. Tablet technology only became available to the mass market since 2010, and this has forced us to think afresh about how we educate and get the best from our students. Indeed, how we can support students to use affordances, in the sense that a pencil and paper are affordances, to get the best from themselves. We believe that ‘tablets’ such as Apple iPads, Samsung Galaxies, Xperia tablets, etc., can be viewed as transforming devices at all levels within education and especially within fieldwork education. We would even say that they are a ‘disruptive innovation’ within education as they create a new market and eventually displace existing technology, thereby creating new educational possibilities.

Fieldwork is a core element of many Bioscience, Geography, Geology, Earth and Environmental Science degree courses. Fieldwork can provide opportunities for experiential learning and research-led teaching in a ‘real-world’ setting. Teaching and learning during fieldwork can be enhanced through the use of digital technologies; tablets provide opportunities to develop novel approaches to fieldwork pedagogy that neither students nor tutors envisaged possible through traditional means.

The aim of this book is to help you as a tutor to develop novel pedagogic approaches that make the most of these new digital technologies to enhance fieldwork teaching and learning. There is a supporting website that continues to be updated as new technologies and pedagogic ideas emerge: <http://www.enhancingfieldwork.org.uk>.

# Acknowledgments

The authors would like to acknowledge and thank the Higher Education Academy of the UK for its support and funding of the 3-year National Teaching Fellowship Project entitled 'Enhancing Fieldwork Learning'. Continuation funding from The British Ecological Society has allowed the team to continue to develop and share good practice in fieldwork teaching.

The above project has been a catalyst for practitioners to contribute and share good practice case studies of Technology-Enhanced Learning in the field. We would like to thank all those practitioners for sharing their practice, the students who participated in the research projects, all those students and colleagues who responded to surveys and workshop participants for their enthusiasm and input into the project.

The authors and publisher would also like to thank the following practitioners for their good practice case studies:

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These practitioners contributed 29 case studies to this book and we describe over 130 mobile apps with suggestions on their usage in enhancing fieldwork learning. This book is not intended to be an exhaustive list of mobile apps applicable to fieldwork, but used to illustrate the diverse range available and their educational potential within a fieldwork setting.

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# Abbreviations

3G/4G	Third or fourth generation mobile network
App	Mobile application—software designed to run on mobile devices and smartphone
AR	Augmented reality
BT	Bluetooth—wireless technology for exchanging data over short distances
BYOD/T	Bring Your Own Device/Technology
CSV	Comma separated values
EFL	The Enhancing Fieldwork Learning project
ERA	Enabling Remote Activity
FNS	Field Network System
FSC	Field Studies Council
GA	Graduate Attribute
GEES	Geography, Earth and Environmental Sciences
GLE	Group Learning Environment
GPS	Global Positioning System
HE	Higher Education
HEA	Higher Education Academy
ICT	Information and Communications Technology
KML	Keyhole Markup Language
LiDAR	Light Detection and Ranging
MDMD	Mobile Data Mini Directories
MO	Media Object
OER	Open Educational Resource
OU	Open University
PDA	Personal Digital Assistant Computer
PDF	Portable Document Format—a file format that can be used to save documents that look the same in any operating system
PLE	Personal Learning Environment
PSP	PlayStation Portable

RLO	Re-usable learning object
SETT	SETT Framework—Student, Environment, Task, Tools
TEL	Technology Enhanced Learning
USB	Universal Serial Bus—used for connection between computers and other devices
VFG	Virtual Field Guide
VGA	Video Graphics Array—PC connector for a projector
VR	Virtual Reality
VTF	Virtual Field Trip
XML	Extensible Markup Language

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