DEVELOPING AN EDUCATIONAL MODEL FOR DELIVERY AND SUPPORT OF POSTGRADUATE DISTANCE LEARNING IN SOUTHERN AFRICA THAT INCORPORATES M-LEARNING

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ACTIVITIES AND ACHIEVEMENTS

WHAT WERE THE MAJOR ACHIEVEMENTS OF THE PROJECT? IN WHAT WAY(S) WAS THE PROJECT INNOVATIVE

This project set out to explore how mobile learning could enhance the developing model of distance learning, used within the Centre for Development, Environment and Policy (CeDEP), SOAS. CeDEP offers postgraduate distance learning courses focused on development, and has over one thousand students in more than one hundred countries, many of whom are based in developing countries. The courses offered were transferred from the Wye Distance Learning Programme of Imperial College London in August 2007.

The educational model that has developed over the last ten years can be described as distance learning making use of appropriate e-learning tools. A strong authoring model for course modules has been developed which is based around an interactive study guide, made up of units that relate to reusable learning objects that are easy to update and make use of carefully designed activities, readings and additional study resources (e.g. animations, or audio visual content). Tutoring has also become a mainstream activity, going beyond the traditional use of tutor marked assignments, and exploring how through use of emerging technologies tutors and students can have more regular contact.

The question that arises is whether and how mobile technologies can enhance and add value to this model, and in particular whether it can help address some of the issues faced within a student learning community where the access to technology is very diverse. The assumption was that there would be a place for use of these technologies within a blended educational model, but exactly where value would be added needed to be more clearly understood. This required an approach to the research that was practical in its orientation, and that provided the opportunity to test with students, authors and tutors what works and what does not, taking into account the constraints and opportunities of both the technology, and the context.

Obtaining insights into these questions should clearly benefit the design and development of course modules, enabling a more informed and cost effective way of preparing for the future. Whilst in many ways the focus of the project is on what is cutting edge and rather expensive technology (especially in the developing country) at the moment, the noted trends (in terms of cost and infrastructure) suggest that this is the right focus in order to plan the evolution of the educational model and ensure that it makes best use of emerging technologies in three years time.

First and foremost, the project has been innovative in its focus, both in terms of where mobile learning fits within a blended distance learning model, and also through focusing primarily on the needs of students in developing countries, in particular in the Southern African Development Community (SADC). The latter point is important, as use of mobile phones is increasing at a phenomenal rate in Africa, and over the next several years offers greater scope for supporting communication and potential distribution of learning resources than the Internet. So the project is implicitly addressing both educational questions, and also access and equity issues.

Given the focus on the SADC region, and the established reputation of University of Pretoria gained from earlier work focused on m-learning in the region, the grant holder collaborated closely with members of the University of Pretoria Department of Educational Innovation throughout the project. After an initial baseline survey, which included all the CeDEP students studying in the SADC region,
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four students were identified (two in Malawi and two in Tanzania), who assisted in providing insights into the context and needs of students. It became clear from discussions with this group, that the focus should be on mobile phone technologies (and not PDAs or laptops), since mobile phones were becoming ubiquitous, and newer models offered many of the features of PDAs, and included functionality that support image and video capture, voice recording, file storage, and synchronisation with PCs. The students were asked to evaluate different models and selected the Nokia N70 for use during the project.

The next stage was to think through how to make use of this phone, and consider the instructional design issues. An analysis was done of what the students in the SADC region would be studying in the 2007 academic year. After also taking into account the interest and availability of course module authors and tutors, the ‘Rural Development’ and ‘ICT for Development’ modules were selected, and supplementary educational content and activities for use on the N70 were separately designed for each of these modules, taking into account the nature of the subject matter. In 2007 these materials were supplied to twenty students covering these modules and also to the four students who worked with us throughout the project. The ten students studying ‘Rural Development’ were all in the SADC region, but the ten studying ‘ICT for Development’ were selected from developing countries anywhere in the world, as there were insufficient numbers in the SADC region taking this module, and it was also felt that this would provide further insight into the relevance and scalability of the pilot approach. A lot of feedback was gained throughout the process, in relation to what the students found usable and their current preferences, and there has been a full evaluation of the feedback.

In summary the major achievements of the project are as follows:

- Development and evaluation of learning resources and activities for use on mobile phones for two course modules. These have been used and tested by 24 students in developing countries in 2007, and will be made available more widely to students in 2008
- Substantial strategic insights into the trends and factors in developing countries that will influence wider update of different m-learning approaches over the next five years
- Instructional design insights into the importance and scope for use of multi-media; the development of a learning activity based approach that involves students in the co-creation of learning materials; and the selection of appropriate learning resources and activities to design is contingent to varying degrees on subject matter, student profile and context
- Substantial insights into the pedagogic and technical options that have the potential to inform integration of m-learning in other CeDEP course modules
- Development of technical skills among the projects in authoring and designing m-learning content, and especially putting together audio and video content in high compression formats, and making use of XHTML MP to make the materials accessible on a mobile phone.
- The outcomes from this project, provide the basis of a model that can be scaled up and implemented, and also provide a starting point for thinking further about the design and development of a mobile learning environment, centred on the learner, that lets the student access a range of learning resources, social software and administrative applications and services, anywhere and anytime, via their mobile phone.

The conclusions from this project are definitely that there is a role for m-learning to enhance distance learning, and within the context of developing countries use of mobile technologies can be a significant strategy for overcoming access issues. The resources, designed and tested in the developing country context, will be usable in any context, and in many ways can form resources that
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can be carried on the interactive CD-ROM versions of study guides, albeit (in the case of multi-media) in higher resolution or less compressed formats.

WERE THE OBJECTIVES/OUTPUTS/PRODUCTS YOU SET OUT TO ACHIEVE MET?

The overall research aim of the project was as follows:

The development of a pedagogic and technical model for use of M-Learning to support Distance Learning post graduate students in the Southern African context, that would include components designed to enhance learning through improvements in:

- Communication and interaction
- Administrative support
- Instructional design for small screen devices

The project has successfully developed and piloted the technical and pedagogic model, with the outcome that two course modules have run during 2007 with groups of students who have made use of mobile technology and learning resources designed for use on the selected technology. This work has addressed the following areas that were highlighted in the project document to be investigated further and taken account of during the two year period of the project:

- **Pedagogy**: Improving understanding of relevant pedagogic issues
- **Instructional Design**: Design of content, tutoring and activities for the m-learning environment
- **Technical**: Identification of suitable technologies and applications and addressing technical challenges
- **Skills and Capacities**: Identification of relevant support needs and strategies
- **Communication and Delivery**
- **Cost and feasibility**

The project document also made the following references to the learning environment and roles:

- **The Learning Environment**: Design of a coherent socio-technical environment incorporating m-learning to support distance learners in the Southern African context
- **Roles**: Identification of the roles needed to support the learning environment including the m-learning component

As the project progressed, the context became more clearly understood, and it became clear that regular access to the Internet was limited for learners who often spend 1-3 months each year doing field work. The focus of the design therefore was on the content and activities that would be needed on the phone, and on some of the associated usability issues. Supporting the wider learning environment entailed asynchronous approaches to communicating with the mobile learners, making irregular use of updates via email and distribution of CD-ROMs, and contact with resources generated by tutors also had to be handled in this way. As the infrastructure improves, there will be far greater scope for a more satisfactory and coherent environment to be developed, and a key question is whether to build this environment around the needs of a mobile learner, or view the hub of any
technical environment as the online learning community with appropriate interfaces with the mobile learner.

The most significant output from this project, in terms of intended achievements, is the instructional design knowledge gained in relation to enhancing course modules, both in terms of the learning elements, and also the process to follow to produce m-learning enhanced course modules. Considerable progress has also been made in relation to seeing how the m-learner fits within the wider learning environment, and in relation to the implications for authoring, tutoring and administrative support.

The technical (infrastructure, hardware etc), applications (social software, and what can be done on the mobile device) and financial (costs, feasibility of options for students and the programme) context has been very dynamic during the period 2005-2007. The implication of this is that some of the initial assumptions in relation to what should be done have been challenged. This has proved to be one of the benefits of a practical pilot approach, as there are significant reality checks, and the project has had to adapt to these along the way. These insights themselves represent significant knowledge outputs in relation to emerging opportunities and potential pitfalls that can be shared with a broader constituency.

WHAT OBSTACLES HAVE YOU ENCOUNTERED IN YOUR PROJECT (PARTICULARLY THOSE THAT MIGHT BE OF VALUE TO CURRENT AND FUTURE CDE AWARD HOLDERS)

The main obstacles regarding this project relate to implementation design and logistical issues.

In relation to implementation design, the SADC context and context of the CeDEP distance learners in other developing countries had to be clearly understood. Whilst the technical infrastructure is developing quickly, it still remains very expensive to send data files internationally of locally via phones (particularly large audio or video files). This meant that some options that would have been desirable to test, in relation to students generating learning resources and exchanging them with each other and with tutors, was not very practical. File distribution had to be via CD-ROM of email attachments, which impacted both on the ICT skills the students needed, and the whole efficiency of the process. Use of SD cards is an emerging option, but over time this infrastructure/financial constraint should diminish and direct communication and distribution of content will become more viable.

Other implementation issues related to ensuring enough students were available on courses that the project team had selected to work on, and in finding incentives for them to be involved. For most of the students time was precious, as they are working full time and studying. In practice we found that we tended to be over ambitious in our expectations of what the students would do. However we managed to get them engaged and excited enough by the project to ensure that the insights gained were valuable.

The main logistical issues relate to purchase, delivery, safekeeping and maintenance of mobile phone hardware. There were also some technical issues that proved difficult to resolve, e.g. recording more than one minute of audio on a Nokia N70! We had lengthy debates about whether to purchase phones locally or in the UK and send them out. Given that these phones cost about £280 at the outset of the project, this was a significant question, and related issues relating to insurance, maintenance, and customs duty arose.

The rapid changes in the context during the pilot, whilst not providing obstacles, also added complexity and opportunities! The major trends related to growing use of social software, increased
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coverage for mobile phone networks, and positive trends in relation to the availability and affordability of mobile phones with multi functional capabilities. For example the N70 can now be purchased for around £80. In order to scale up some of the project outcomes it will be increasingly possible to either (a) supply all students with a suitable mobile device or (b) encourage use of a wide range of phones that students already have, provided they meet a minimum specification.

The final obstacle I faced as the grant holder, related to major organizational change within the programme I work for, that was not anticipated when the grant award was received. This impacted considerably on the availability of my own time, but fortunately I was able to manage this by drawing substantially on expertise associated with the programme, who met with me regularly and conducted a lot of the design of educational resources for the two modules used within the pilot. They also helped considerably with the evaluation tasks. I would like to thank Paul Smith, Mike Stockbridge and Dolf Jordaan, for the vital contributions they made.

RESEARCH RESULTS (ADDRESSING THE FOLLOWING QUESTIONS):

WHAT EDUCATIONAL ISSUES DID THE PROJECT ADDRESS AND WHICH STUDENT OR OTHER GROUPS BENEFITED FROM THE PROJECT?

The educational issues that the project addresses surround the instructional design of learning resources and activities that can be used on the mobile phone selected for the pilot, i.e. the Nokia N70. The features of this phone are similar to a wide range of small colour screen models that have multi-functional capabilities. These resources and activities are also designed to fit in well with the existing interactive study guides for the two course modules that provided the academic content focus for the project. Different learning resources were developed for the two modules, as the nature of the subject matter was intrinsically different. The table below summarises the work done for each module:

<table>
<thead>
<tr>
<th>‘Rural Development’</th>
<th>‘ICT for Development’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains a lot of narrative, and is not particularly technical.</td>
<td>Inherently more technical, with more tables and graphs and animations</td>
</tr>
<tr>
<td>The context where the student is based is relevant to the study. Students travel on field visits providing the opportunity to relate learning to the practical challenges faced in their work.</td>
<td>Audio narrative versions of the content would not be very helpful, but there are lots of practical ways students could explore this subject and undertake small research tasks.</td>
</tr>
</tbody>
</table>

Materials designed and being tested include:

Quick quizzes which students can use to test themselves on basic factual information, making use of ‘learning moments’ – brief periods where they can study whilst on the move

Mp3 audio files providing a narrative of the

Materials designed and being tested include:

Short video conversations with the course author/tutor introducing the unit, and highlighting some of the key learning points and topics for debate

Provision of short videos supplementing the
In both cases the students are supported by tutors based in the UK and during 2007 the pilot is also explored the scope for:

- Preparing multimedia digests supplied to students for viewing and listening to on their mobile phone
- Drawing on contributions submitted by students and encouraging sharing any interesting audio or video material with the wider group. Students may also be encouraged to develop and share their own audio narratives for module units.
- Use of SMS by tutors to encourage completion of work and by students when they need to ask for help – perhaps when they are studying away from their office

It became clear from the evaluation that the supply of audio and video content for use on the phones was valued by the students, and that they were capable of capturing and preparing their own resources using the mobile phone. However, that sharing back the content they captured, with tutors or fellow students, was constrained by the current infrastructure and associated transaction costs. Use of audio at this stage is more viable. Learning activities provide a very interesting way forward, but there is a need to keep them simple so that they do not consume too much time. The feedback also suggested that it works best if these activities are used as building blocks that contribute to the writing and submission of an essay, possibly illustrated by a small portfolio of work captured on the phone. Further work is needed on the best design of these types of activities.

The students who benefited during the project were ten students on the ‘Rural Development’ module and ten students on the ‘ICT for Development’ module. A further four students were directly engaged in the project, and benefited from being in close dialogue with the project team. It was clear that they were also making effective use of the mobile phones supplied to them, to support their own learning in ways which, although not directly associated with the project objectives, threw light on how students in the SADC context make use of their phones.

The next phase of this work is to try to scale up the work. So students on these two modules in 2008 and beyond will hopefully also benefit from the work done so far. We also plan to develop this further in other modules and in relation to supporting the research component of the courses. This scaling up challenge is the focus for a ‘Teaching and Research Award’ that will be worked on in 2008.
HOW HAS THE PROJECT BUILT UPON CURRENT WORK IN THE FIELD OF DISTANCE EDUCATION?

The literature review and conferences attended at various stages during the project, revealed that this project was in many respects unique in its focus. The most obvious work that it builds on is the project conducted by University of Pretoria Distance Learning Project, led by Professor Johann Hendriks, which explored the use of SMS messaging and Interactive Voice Response systems for supporting a group of distance learning students in Southern Africa. The focus of that project was on administrative and logistical aspects, though it also explored use of basic 1st generation mobile phone sets for doing quizzes.

The project also clearly builds on the significant body of work done at Wye and across the University of London External System, that has made increased use of e-learning tools to support distance learners.

Mobile technologies, and in particular the phone sets used in this project, have multi functionality and can be used both the capture and play audio visual content. They are also powerful devices for creating and sharing educational resources. As the project progressed, it became increasingly clear that the project was also building on ideas related to the development of audio-visual educational content, and also relating to constructivist models of education where students are potentially co-creators of learning resources.

HOW DID YOU EVALUATE THE PROJECT?

The design of the project from the outset promoted regular feedback in the following ways:

1) A small group of four students (two from Malawi and two from Tanzania) were identified, who worked with us throughout, and provided valuable insight and feedback ensuring that the project focus was both relevant to the context (taking into account constraints and opportunities) and also relevant to the students.

2) This group of students also provided ideas and feedback, for example on the type of mobile technology and model to be used, and on the design of educational content.

3) At the outset a baseline survey of the use of ICTs and mobile technologies used by all students studying with our programme in the SADC region was conducted, and this also proved a valuable way of ensuring that the project focus took full account of the student profile.

4) The involvement of those who authored and tutored the course modules selected, together with the expert currently working on the study skills project and acting as ‘study director’, enabled the grant holder to gain direct insight and feedback from them, that benefited both the project design and evaluation. The evaluations included with this document as Annexes B and C show the results of a more formal feedback exercise carried out by those involved with each module, and capture comments of students as well as reflections of those used in designing some of the learning activities.

HOW HAVE YOU AND/OR HOW DO YOU PLAN TO DISSEMINATE THE RESULTS OF THE PROJECT THROUGHOUT THE UNIVERSITY AND MORE WIDELY?

Presentations were held at the following conferences and symposia:
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- The Centre for Distance Education Fellows Conference
- mLearn 2006, Canada, 22-25 October 2006
- ICT for Development Seminar
  CDE & ICT4D, al the London Knowledge Lab, 10 October 2006.
- eLearning Africa, Nairobi, 28-30 May 2007
- The Centre for Distance Education Fellows Conference
- mLearn 2007, Melbourne, 16-19 October
- ICT4D Workshop on Mobile Learning, Royal Holloway, 8 December 2007
- Learning Technology Presentation at LSHTM, 2007

Papers (listed below) were prepared for most of the above conferences, and a chapter on the project has been accepted for a forthcoming book (tentatively titled ‘Empowering Learners and Educators with Mobile Learning’) on mobile learning to be published in time for PCFS by Athabasca University. This is included as an annex to this report.


Papers are also being prepared for PCFS and eLearning Africa 2008. I am also running workshops and talks in response to requests, and plan to prepare additional posters, key information sheets, and if possible a CD-ROM containing all the resources generated so far during the project.

A NON-TECHNICAL SUMMARY:

THIS REPRESENTS A BRIEF OVERVIEW OF THE PROJECT THAT WILL BE ALSO BE USED ON THE CDE WEBSITE AND CENTRE PUBLICATIONS FOR DISSEMINATION OF THE PROJECT OUTCOMES

The University of London has over one thousand students in more than one hundred different countries registered on postgraduate distance learning programmes offered through the SOAS Centre for Development, Environment and Policy (CeDEP) which were formerly run through the Wye Distance Learning Programmes of Imperial College London. The MSc courses are offered in thematic areas including ‘Applied Environmental Economics’, ‘Environment and Biodiversity’ and ‘Sustainability and Development’. Many of the students are based in Africa and developing countries.

During the last decade, the CeDEP programme has enhanced the approaches it uses for tutoring and courseware production, to encompass a blend of printed, electronic and where possible face-to-face methods. This has enabled the programme to innovate with distance learning pedagogy. E-Learning tools and approaches, that make use of e-mail, Online Learning Environments and courseware CD-
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Roms have been developed, and the access barriers faced by students have always been an important consideration. As e-learning approaches have been introduced, there has been a concern that students based in developing countries where internet and email access is more constrained are the least likely to benefit. This concern became one of the main drivers for the grant holder embarking upon a two year project, funded by the Centre of Distance Education of University of London, exploring how ‘m-learning’ can enhance distance learning approaches. Alongside colleagues from University of Pretoria, four students in Tanzania and Malawi have been involved with the project since 2005 giving insights from the Southern African context. In 2007 a further twenty students became involved in piloting use of learning materials developed for use on mobile phones possessing capabilities for communication, image and video capture and sound recording.

Based on a clear understanding of the context, and anticipating changes in the next few years in relation to infrastructure, the project outcomes provide insights into the following considerations

**Pedagogic:** Instructional design challenges in producing audio, video, interactive and text content for use on the mobile device, and exploring how this could be used to improve communication between students and tutors, and in particular involve students in creating and sharing learning resources and making use of the mobile device for learning activities and developing new study skills.

**Technical:** Affordances of different mobile technologies; costs and infrastructure

**Logistical:** Practical issues including insurance, maintenance, ownership, delivery or hardware and distribution of content

During the two year period the context for all three of these considerations has been changing rapidly, with the emergence of social software, the rapid development of mobile technology and infrastructure, and new ways of distributing digital content. This highlights the need for the design of a student centred scaleable learning environment for mobile learners in developing and developed countries. The lessons learned from this project should help inform us as we work towards this, and anticipate more affordable mobile technologies and related data services in the near future.

**SUPPORT FROM THE CENTRE FOR DISTANCE EDUCATION:**

**COMMENTS ON THE USEFULNESS OF CONTACTS WITHIN THE CENTRE FOR DISTANCE EDUCATION**

Throughout the project the CDE staff have been very helpful in providing advice and logistical support, particularly in relation to purchasing equipment that needed to be sent to students and in administering the budget. Involvement of the CDE Director in one of the workshops in Malawi during 2007 was also very beneficial. Given his experience in use of ICTs in education in developing countries this input was very helpful.

As a CDE fellow I have also greatly valued contacts with other fellows and award holders during the project, and through the CDE was able to organise a one day workshop focused on use of ICTs in development, at which details of the project were shared with a wider audience. Likewise involvement in the 2006 and 2007 conferences organized by the CDE fellows, gave a useful opportunity to network with others in the University interested in the potential for mobile learning.
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HOW THE CENTRE MIGHT FURTHER SUPPORT AWARD HOLDERS

Given the capacity to do so I think there are a range of ways in which the CDE might further support the award holders during the project, and also become proactively involved in helping to develop appropriate resources to disseminate the project results after the project comes to an end. The ideas I have are as follows:

During the project

- Advice on appropriate research methodologies
- Days when award holders can get together and share with each other and with an expert facilitator identified by the CDE, and get ideas about how their project might be enhanced. This could be a form of mentoring.

Dissemination of results

- Record interviews with award holders for pod-casting
- Producing e-bulletins highlighting the work being done
- Assisting with preparation of dissemination materials, such as posters (in a CDE friendly style) and CD-ROMs
A SIGNATURE AND DECLARATION SECTION:

THE REPORT MUST BE SIGNED BY ALL PRINCIPAL RESEARCHERS, AND BY THE RELEVANT DEPARTMENT HEAD AND/OR ADMINISTRATIVE AUTHORITY AT THE AWARD-HOLDING INSTITUTION.

The project ended on 31 December 2007.

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APPENDIX

REFERENCES

See References section included with Annex A

OUTPUTS ARISING FROM THE RESEARCH

- Overview posters produced for mLearn 2006
- Blog site with a range of resources generated during the project including a range of Powerpoint presentations and articles (see http://ict4d.typepad.com/mobile_learning, username and password ‘mlearn’)
- A chapter in a book (forthcoming 2008) on mobile learning to be published by Athabasca University
- Two sets of pilot courseware resources for C104 ‘ICT for Development’ and C30 ‘Rural Development’ modules, including samples of audio visual content, quizzes, and content written in XHTML code
EXPLORING THE CHALLENGES AND OPPORTUNITIES OF M-LEARNING WITHIN AN INTERNATIONAL DISTANCE EDUCATION PROGRAMME

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EXPLORING THE CHALLENGES AND OPPORTUNITIES OF M-LEARNING WITHIN AN INTERNATIONAL DISTANCE EDUCATION PROGRAMME

ABSTRACT

This chapter provides a case study of a mobile learning project, involving postgraduate distance learning students based in the Southern African Development Community (SADC) region. The project explores ways of enhancing the programme design and delivery, within the broader context of a global programme with students in over one hundred countries. The use of e-learning tools alongside traditional print based approaches has created a more connected learning community which make increasing use of interactive learning resources. However, new challenges have emerged in providing equivalent access and support to students based in developing countries.

The authors outline the practical ways in which mobile learning tools help address the problems identified, and provide opportunities for innovation in design and delivery of distance learning. The approaches explored provide insights and not a prescriptive solution, since they are contingent on diverse and dynamic contexts, the student profile, and the nature of the problems arising.
INTRODUCTION

The Wye Distance Learning Programme (DLP) has offered postgraduate distance education degrees awarded by the University of London since 1987, and runs programmes for the School of Oriental and African Studies (SOAS) and Imperial College London. In August 2007 it was transferred from Imperial College to form part of the newly established SOAS Centre for Development, Environment and Policy (CeDEP). The DLP has over one thousand students located in over one hundred countries, with many students based in Africa and developing countries. The spread of students is illustrated in Figure 1 below. The courses offered have an emphasis on social science, and relate to the following thematic areas: “Sustainability and Development”, “Environment and Biodiversity” and “Applied Economics and Business”. DLP students are typically mid career professionals, with more than 75% of the student body in the 30-50 year age range and approximately one third are female.

There are currently over forty course modules, and most of these are supplied to students as printed study guides accompanied by text books and bound sets of copyright cleared reading materials. In the late 1990s the DLP took on a pioneering role by developing an online learning environment (OLE) for distance learning students to use, which was adopted by the University of London External Programme. More recently it has been creating interactive CD based versions of the study guides, and fifteen course modules now exist in this format.

The growth of e-learning approaches across the DLPs courses has meant that many students can enjoy more interaction with other students and with their tutors. Learning materials are being enhanced by new features including self assessment quizzes, animations, and quick search facilities.

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1 www.soas.ac.uk/cedep
2 www.imperial.ac.uk/dlp
that support revision. However, the e-learning model has its limitations, as many of the DLPs students are based in countries where internet access is still not widely available and students don’t typically have much access to computers outside their workplace. Some students have to travel two to three hours to the nearest town simply to access emails via a cybercafé.

For these reasons, the DLP has pursued a strategy of using e-learning tools to enhance and complement rather than completely replace the established methods of delivery and support. Participation on the OLE has been optional and printable ‘pdf’ file alternatives to content designed for the CD are always provided.

The rapid global diffusion of mobile technologies presents exciting new opportunities for the DLP to explore in addressing some of the constraints experienced with the e-learning model. This potential for mobile learning (m-learning) within the DLP is seen as providing:

- scope for enhancing the learning model
- a solution to access issues faced by students in Africa and many developing countries, moving eventually towards a global delivery that supports learning anytime and anywhere

In October 2005, the Distance Learning Programme (DLP) successfully applied for a “Teaching and Development grant” from the University of London Centre for Distance Education (CDE), and commenced work on a two year m-learning project titled “Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning”. The project is being implemented in close collaboration with the Department for Education Innovation (EI) at University of Pretoria, and directly involves DLP students based in the Southern African Development Community (SADC) region in contributing to the design and testing of suitable m-learning approaches.

This chapter provides a case study telling the story of our experience so far. This is illustrated with qualitative data drawn from interviews, country visits and direct feedback. The primary focus is on piloting of m-learning approaches in the Southern African context that complement and enhance existing distance learning approaches. We take the reader through the steps followed in the design and implementation of the project, highlighting some of the important considerations and challenges and suggesting areas where further research would be useful.

The study covers an investigation of the context and potential value added of mobile learning, considering the pedagogic and practical models being used by the DLP. An initial phase where four students were identified and became involved in the planning of the project is outlined. Work is currently being undertaken in 2007, involving a larger group of students testing out course materials, activities and tutoring approaches that have been designed for the mobile phone. The instructional design and pedagogical approaches being followed are described, and some of the initial outcomes and feedback are discussed, together with preliminary ideas on the development of a holistic learning environment to support mobile learners, as well as incorporating the strengths of e-learning and traditional distance learning approaches.

**BACKGROUND**

We will start this background section by providing more insight into the design of the study environment and learning materials, as this is important in providing an understanding of the nature of the problems we seek to address through m-learning approaches. This is followed by a review of literature related to educational theory of relevance to mobile learning design, and reference to
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project examples and experiences that we have learned from in relation to m-learning in the developing country context.

i) The current status of e-learning within the DLP Programme design

Until the advent of the internet in the 1990s, most communication with students was by airmail and then increasingly through email. At the time all Tutor Marked Assignments (TMAs) that students submitted for marking and feedback were optional, due to the unreliability and slowness of the postal system and difficulties in authenticating the work.

As the Internet became more widely available in the late 1990s, the DLP quickly saw the opportunity for creating an online community. At the time commercial and open source learning environments were not particularly advanced, and did not meet the requirements of a widely dispersed student community with slow Internet access. For this reason an in-house OLE (subsequently called Effect) was developed and subsequently adopted by the University of London External Programme.

The OLE homepage is illustrated in Figure 2, and from the outset design features have taken account of the developing country context of many of the students. These features include (a) limited use of graphics with minimal file size to facilitate fast download, (b) attempts to design a single click access to most of the key areas of the OLE to speed up access, and (c) offline synchronisation of content (though this has proved problematic to implement).

Figure 2: Screenshot Of The DLP’s 2007 Online Learning Environment Homepage
The OLE has acted as a repository for downloadable learning materials and programme documentation, but has been primarily used to support academic discussions among students and tutors. The reality is that roughly one third of the student community make regular use of the OLE, one third uses it occasionally and the remaining third never login. There are a wide range of reasons for this, with some students simply preferring not to participate in the learning community, and students based in developing countries don’t find it easy to access the OLE regularly. Reasons for this will become clearer later in the Chapter.

Since the introduction of the OLE, the DLP’s investment in tutoring has grown considerably, and has reached the point where the teaching alongside the design and delivery of study materials is becoming the frontline activity and a major selling point for the programme. Interaction with tutors is no longer an occasional occurrence based around optional assignments. All DLP students now have an expectation of access to tutoring irrespective of their location or quality of Internet access.

The second major initiative within the DLP has been a move over the last five years to make the study materials available digitally. The driver for this was pedagogic innovation, but there was also a financial motivation to keep fee levels affordable and invest more in educational technology rather than printing and despatch.

Initially this process involved providing pdf or word format copies of the study guide to students via the OLE, but a more ambitious agenda to enhance the materials also began to be implemented.

This involved developing ways to make the content more interactive, and develop a flexible authoring model that would support reusability of content and ease of maintenance. Due to the type of subject matter, which is typically narrative or economic models, there needed to be a careful assessment of what would add value to the student experience.

This leads to a focus on interactive content that helps explain difficult concepts, self assessment questions and search features to support revision. There was also the hope that in time greater use would be made of audio visual learning materials and live weblinks to further study resources.

Due to the diverse location of the students, it was decided to distribute the materials on CD-ROM. Figures 3 to 5 provide illustrations of the CD courseware which links together ten units of content, and interactive materials and quizzes. The content was actually designed using HTML, Flash and JavaScript, so that it could be viewed using common web browser software.

This means it could also be set up easily as web based e-learning material, but the CD format enables large files (e.g. images, audio and video) to be accessed more readily by students not connected to the Internet.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Figure 3:
CD Courseware Front Page

Figure 4:
CD Unit 4 Index Page

Figure 5: CD Courseware example of interactive content
ii) Review of relevant literature and examples of m-learning in the SADC Context

We will now briefly consider relevant educational theory and review experience and examples drawn from the SADC region context where the students involved in the pilot project are mainly based. Before commencing with any specific development work we sought to answer three further questions:

- What insights can we gain from relevant literature in relation to the context, educational and pedagogic approaches, and technical alternatives?
- What can we learn from the experience of others who have sought to develop m-learning approaches particularly in the Southern African context?
- What can we learn directly about the context that might influence our project approach?

The third question will be addressed when we provide an overview of the project. The first two questions are considered at this point.

Literature Review

In examining relevant literature, we sought to explore the evidence of mobile phone diffusion in Africa; gain insights into the type of mobile device and the application environments and standards; identify suitable models for m-learning; and examine the pedagogical and instructional design approaches that would be suited to the DLP piloting of mobile learning.

Barker et al. (2005) state that Africa is lacking technological development and that this has a negative effect on the education on the continent. In contrast with the diffusion of other technologies the continent is experiencing very rapid growth in mobile phone usage. Various sources confirm this growth which can facilitate the integration of mobile learning within educational models used in the region.

It has become increasingly difficult to make a clear distinction between the different mobile devices as the functions of mobile phones, smartphones and PDA’s integrate and share characteristics (Kukulska-Hulme, A, & Traxler, J, 2005). Whilst mobile devices may have different operating systems, most recent models now support similar application development tools and standards including WAP, Java, WML and XHTML (Extensible HyperText Markup Language). Mobile users are often used to accessing the Internet from their desktop or notebook computers, and phones that use XHTML have an advantage (compared to WAP) of working well with mobile versions of web browser, giving access to a fast growing variety of services and academic content likely to be useful to distance education students.

Various m-learning models have been designed and proposed for adoption in Africa. One of these models was designed by Andreas Barker and colleagues from the Department of Information Systems at Rhodes University in South Africa. They describe this as follows:

“a model for m-learning adoption contains an m-learning environment, which is underpinned by the traditional learning environment and also supported by effective m-learning policies and guidelines. Within the traditional learning environment, as indicated in the model, learning can still take place through desktop PCs. The proposed model demonstrates that the mobile devices can be used as academic support for learners via online assessment, providing course content and access to the Internet. The mobile devices in the proposed model for m-learning adoption enable learner-to-learner communication, as well as learner-to-teacher communication”. (Barker et al, 2005)
A range of studies, reviews and reports have been published suggesting frameworks or models for the integration of mobile devices in learning at various levels of education across the world. Attempts are being made to find suitable learning theories or models for m-learning that try to find new teaching and learning practices for the new mobile technologies and apply existing learning theories to the findings. In most instances learning theories such as behaviourism, constructivism, situated, and collaborative, informal and lifelong learning were investigated. The integration of mobile technologies within the DLP activities described in this paper, specifically draw on the integration of constructivist, situated, collaborative and informal learning theories and activities. Drawing on Naismith et al, (2004), these can be described as follows:

- Constructivist activities enable learners to actively construct their own new ideas or concepts based on both their previous and current knowledge.
- Situated learning activities takes place in an authentic context. Mobile devices are well suited to authentic context-aware applications.
- Collaborative activities promote learning through interaction. Mobile devices can support “mobile computer supported collaborative learning” (MCSCL) by providing another means of coordination without attempting to replace human-human interactions.
- Informal and lifelong learning activities support learning outside a dedicated learning environment and formal curriculum.

Ally (2004) indicates that the use of mobile devices for learning has direct implications for instructional design. He proposes the following principles for designing m-learning materials:

- It is important for designers to use presentation strategies that enable learners to process the material efficiently due to the limited display capacity of mobile learning devices.
- Information should be organised or divided into smaller pieces to facilitate processing.
- Information should be organised in the form of a concept map identifying the important concepts and showing their relationships.
- As information is presented in small pieces it is important to use advanced organisers to allow learners to make sense of the new content.
- The interface must coordinate the interaction between the learner and the learning materials and must include good navigational strategies.
- Learning materials should take the form of learning objects which are electronically available and reusable.

**The University of Pretoria Experience**

Many of the DLPs students in the SADC region are Commonwealth Scholarship students, and, under the terms of the scholarship funding, the DLP has been collaborating with the University of Pretoria (UP). Over the last five years strong links have developed between UP’s Department for Education Innovation (EI) and the learning technology team within the DLP. EI has an established reputation in m-learning, so a useful starting point for this project has been to learn from the UP experience, which is now briefly described.

The use of mobile phones in distance education in Africa has been implemented with success at the University of Pretoria since 2002. The Faculty of Education presents a Postgraduate Diploma in Education through distance education. The integration of SMS messaging with a paper-based programme resulted in an increase in attendance for contact sessions and a better response to information provided in SMS messages. Mobile support to the students was implemented to provide administrative and motivational communication to both large and small groups of students.

The University proceeded to investigate the possible use of SMS messaging with academic functions in 2004. A task team investigated the integration of bulk SMS and Instant Voice Response (IVR) as
well as development of an SMS assessment tool. A pilot project investigated four categories of asynchronous SMS academic interventions which included the IVR system through which the student can phone a FAQ number and receive answers from a pre-programmed system. Students also receive Multiple Choice Questions (MCQ’s) to which they can reply via SMS. They can also ask questions about a pre-selected topic and receive answers automatically based on the comprehensive programmed text database.

The UP pilot proved highly successful in establishing that most students had access to mobile phones. Students were comfortable using their own phones to make use of these new SMS related services and for academic purposes. Increased commitment of students exemplified by timely completion of tasks by a greater percentage of students was also noted. At the time of the UP pilot in 2004 the first generation handsets available to students supported text and voice calls. Three years later the potential uses of the more recent smartphone and 3G handsets for supporting a broader range of academic activity within education in Africa are considerable.

THE PILOT PROJECT: DEVELOPING AN EDUCATIONAL MODEL FOR DELIVERY AND SUPPORT OF POSTGRADUATE DISTANCE LEARNING IN SOUTHERN AFRICA THAT INCORPORATES M-LEARNING

Before making any major investment in a new approach to tutoring or course authoring, it is important for the DLP to carefully review the practicalities and benefits, since the update of learning materials is a major task with significant cost implications and requiring implementation against the background of five year student registration periods. A pilot project approach therefore has many advantages, and as we introduce and describe this project, we will move through the following stages:

1. Identification of some of the major challenges and problems the DLP faces
2. Review of baseline information gained from a survey of students living in the SADC region
3. Description of in-country visits to gain direct insights from context
4. Feedback from initial activities tested with a small group of students
5. Overview of the design and development of learning materials and m-learning approaches for two course modules, including some preliminary student feedback

(1) CHALLENGES TO BE ADDRESSED

The growing emphasis on the use of e-learning tools worked well for a good proportion of the DLPs students, but created more of a divide across the student community as a whole than had previously been the case, and we have been keen to address this. The overall goal for the DLP has to be to provide first class tutoring and support to all students, and make innovative use of pedagogy and technology appropriate to the context of the learners.

Neither e-learning nor m-learning are seen as panaceas or comprehensive solutions for achieving this goal. They are part of a blend of approaches that are only relevant if they help to solve identified problems and shortcomings of the existing approach. The context is also dynamic and, much as it might be desirable to design a programme from scratch that draws on latest technologies, the reality is that it will take significant time and resources to adapt existing course materials, and provide the students with learning resources that are designed in a consistent way that is easy to support from a distance.
Before looking further at the relevant literature and moving on to the activities piloted, we set out below some of the challenges that have influenced our thinking and encouraged us to explore the role of m-learning.

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Initial Status (at start of the pilot project)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving Communication</td>
<td>Whilst regular Internet access for many DLP students remains problematic, email is now regularly used by nearly 100% of the students. Recognising this, the DLP has introduced email digests (e-digests) where tutors summarise online discussions, and encourage inputs from those not online so that they can participate.</td>
</tr>
<tr>
<td>Improving access and participation</td>
<td>Whilst e-learning has brought some students into closer contact with each other and with their tutors, this is not universal, and in some respects there is an uneven playing field. A goal of a global programme like the DLP is to ensure that all students irrespective of location have the opportunity to access and fully participate in the learning environment (however that is designed). Only when all students have reliable means of rapid communication with the programme, will we be able to implement educational developments such as continual assessment, and a more constructivist approach to learning that draws on the experience and context of the learning community.</td>
</tr>
<tr>
<td>Improving tutoring support to students in diverse locations</td>
<td>Over the last three years we have also explored the possibility of developing networks to provide in country support in countries where online access is limited. However, with students spread across many countries, this is a very expensive approach, and in practice the in country tutorials piloted were poorly attended, as distance learning students typically work full time, and had difficulties taking time off and travelling to locations where tutors were visiting.</td>
</tr>
<tr>
<td>Improving the usability of leaning resources for students who are very mobile</td>
<td>DLP students are typically highly mobile, sometimes internationally, and often within their own country. Studying whilst on the move and away from the office and home presents its own problems and many students can get behind with their studies. Whilst books are portable, study guides and bound volumes are typically heavy and not that easy to have at hand whilst travelling. It is also difficult without a computer to work on assignments efficiently.</td>
</tr>
<tr>
<td>Improving access to content and programme materials</td>
<td>The OLE offered a convenient repository for sharing learning resources and programme related documentation. Large files did not need to be sent as email attachments and were available for download wherever a student was able to access the Internet. However, the strategy of the DLP has not been to develop an entirely web-based e-learning programme, but to use the OLE and learning materials on CD-ROM to support the DL approach.</td>
</tr>
</tbody>
</table>
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex A

Resources such as sample exam papers that were initially only made available on the OLE are now also included on a study resources CD sent to students at the start of each academic year.

These approaches illustrate how the DLP seeks to recognise access issues. Digital design and distribution of materials also offers scope for replacing a lot of the investment in printing and despatching materials with digital CD based versions, but this in itself presents a difficult issue as it transfers the task and cost of printing to students.

Given the nature of these challenges, the increasing availability and power of mobile technologies confirms that a pilot to explore the potential ways in which m-learning can enhance existing approaches would be very valuable. First, however, we need to consider whether suitable m-learning approaches would be feasible in the developing country context. We will do this by exploring the profile and needs of a group of students who provided the specific Southern African focus for the m-learning project.

(2) THE SADC BASELINE

The DLP currently supports 108 Commonwealth Scholarship students pursuing postgraduate Masters level distance learning courses, and in 2006 at the time of the survey there were 88 (See Table 1 below). These students are based in Commonwealth countries within the Southern African Development Community3 (SADC) region. In order to improve support to these students, the DLP has worked in collaboration with the University of Pretoria’s Department of Agricultural Economics and Department of Educational Innovation (EI) since 2002.

Table 1: SADC Student Numbers in 2006

<table>
<thead>
<tr>
<th>Country</th>
<th>SADC Student Nos</th>
<th>M.Sc. Programme</th>
<th>SADC Student Nos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>12</td>
<td>Agribusiness for development</td>
<td>9</td>
</tr>
<tr>
<td>Lesotho</td>
<td>3</td>
<td>Agricultural Economics</td>
<td>5</td>
</tr>
<tr>
<td>Malawi</td>
<td>13</td>
<td>Applied Environmental Economics</td>
<td>1</td>
</tr>
<tr>
<td>Mauritius</td>
<td>9</td>
<td>Biodiversity Conservation and Management</td>
<td>10</td>
</tr>
</tbody>
</table>

3 SADC comprises Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Tanzania, South Africa, Swaziland, Zambia (and formerly Zimbabwe)
In March 2006 a baseline survey was conducted with the 88 SADC based students registered on the programme at that time. There were 43 responses and the table below shows the access that the respondents have to different types of technology and application:

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
<th>Course</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mozambique</td>
<td>2</td>
<td>Environmental Management</td>
<td>13</td>
</tr>
<tr>
<td>Namibia</td>
<td>7</td>
<td>Food Industry Management and Marketing</td>
<td>1</td>
</tr>
<tr>
<td>South Africa</td>
<td>7</td>
<td>Managing Rural Change/Development</td>
<td>18</td>
</tr>
<tr>
<td>Swaziland</td>
<td>4</td>
<td>Sustainable Agriculture and Rural Development</td>
<td>17</td>
</tr>
<tr>
<td>Tanzania</td>
<td>15</td>
<td>Sustainable Development</td>
<td>14</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technology</th>
<th>At Home</th>
<th>At Work</th>
<th>No Access</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td>24</td>
<td>40</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>CD ROM Drive</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cell Phone</td>
<td>Personal</td>
<td>Provided by Employer</td>
<td>11</td>
<td>No Access</td>
</tr>
<tr>
<td>Internet</td>
<td>At Home</td>
<td>At Work</td>
<td>Cyber café</td>
<td>No Access</td>
</tr>
<tr>
<td>Email access</td>
<td>Regular</td>
<td>Occasional</td>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

These responses are unlikely to be typical of the whole survey group, since survey responses were sent in by email. The respondents generally rated themselves highly in relation to their level of ICT literacy - ‘very good’ (16), ‘good’ (21) and average (6).

The graphs that follow illustrate the respondents’ ratings for the current e-learning approaches. Graph 1 shows that the majority of students who responded, found the online learning environment and the recently introduced email digests written by tutors useful.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex A

Graph 1: Usefulness of e-learning support

Graph 2 shows that course materials (including both printed and CD courseware) were also rated highly, but the tutoring support whilst rated by many as of a very high standard, was not as highly regarded as the courseware.

Graph 2: Quality of support and materials

Whilst these responses are encouraging, the constraint on OLE access (illustrated below in Graph 3) was regarded as a problem, and several in-country tutorials were organised to overcome this limitation. These workshops were rated as useful, but many students found it difficult to get time off to attend, or too expensive to travel to a workshop location. This type of event is also very expensive to organise.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex A

Computer and internet access are most likely to be via the workplace, and yet by contrast most indicated that they study mainly ‘at home’, followed by ‘in the office’.

Few students study when they are ‘away on field work’, but the amount of time spent out of the office was significant. Eighteen respondents indicated that they spend 1-3 months per annum in the field, and thirteen indicated that they spend more than 3 months.

All respondents indicated that they used their phones for receiving voice calls and almost all sent and received text messages. Interestingly a lower proportion (70%) made voice calls. The amount of money spent was also revealing as it varied from US$4 to US$100 per month.

The survey details summarised so far suggest that there is a potential role for use of mobile phones to improve tutoring in terms of overall access and quality. Since almost all respondents have mobile phones that they keep with them all the time, they offer the only technology that offers the potential for contact with the tutors and use of course materials ‘anytime, anywhere’.

(3) INSIGHTS FROM THE CONTEXT

The project focused initially on understanding the context and student profile, and determining which mobile technologies should be considered.

The context of the distance learner is highly important, as is the need to understand how they work and study. In developing countries, a student may for example study whilst travelling on a bus to the field or by candlelight when there is a power cut. Political disturbances may disrupt communications. Appropriateness of technology needs to be considered with an appreciation of such factors.
Annex A

Four students were selected to be involved with the project in the first year, and this was deemed to be sufficient to enable us to obtain qualitative feedback. Students were selected based on location, mobile coverage availability, module studied and progression within the MSc programme (i.e. they should be in year two or beyond), and gender. One male and one female student were selected from Tanzania and two male students from Malawi. Three students are based in major towns (Dar es Salaam, Arusha and Lilongwe) and one in a rural area, near Dwanga in Malawi. These locations are shown on the map illustrated in Figure 6.

The modules that the students were studying were reviewed and two modules were selected for the focus of the project. These modules are ‘Rural Development’ and ‘ICT for Development’.

Figure 6: Map highlighting student locations in Tanzania and Malawi
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Annex A

During the project, new content and activities designed specifically to make use of the features of mobile technologies are being developed and tested, and since 2007 the tutors on these two modules have also become directly involved.

Visits were made to Malawi and Tanzania in February 2006, to find out more about local ICT trends and explore the realities, constraints and possibilities of the context where the students were based. The main cell phone operators offering services in the countries selected are shown in the Table 3 below:

<table>
<thead>
<tr>
<th>Malawi</th>
<th>Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>CelTel</td>
<td>CelTel</td>
</tr>
<tr>
<td>Malawi Telekon</td>
<td>Tigo (formerly Mobitel)</td>
</tr>
<tr>
<td></td>
<td>Vodacom</td>
</tr>
<tr>
<td></td>
<td>Buzz</td>
</tr>
</tbody>
</table>

Table 3: Cell Phone Operations

Mobile coverage maps were reviewed for all SADC countries and it was noted that there was reasonable coverage in most of them, particularly in major cities and towns, and on major routes. This is illustrated in the coverage maps for Malawi and Tanzania provided in Figures 7 and 8. Significant demand for coverage in villages and rural areas was also noted, driven by people wanting to ‘call in’ as well as ‘call out’.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex A

Figure 7:

Telekom Coverage Map for Malawi

http://www.telekom.co.mw/COVERAGE.html
Meetings were held with Celtel and Vodacom in Tanzania, and it became clear that plans to roll out 3G networks are moving ahead quickly. GPRS services are becoming widely available supporting data services, including multimedia and MMS applications. The price of GPRS services remains high: for example in Tanzania 1 kilobyte of data costs Tsh 50 (2006 rate) which was the same as the cost of sending a text message. Significant usage of GPRS services at this stage was therefore not realistic for students, and transfer of large files between students and the DLP is best done via transfer to a PC and email or internet services. Operators did sell phones, but handsets tend to be sold separate from usage contracts, and are similar in price to SIM free handsets purchased in the UK.

The students were interviewed and videoed, and these interviews provided a rich picture of how students use their current phones, computers and the Internet, and how they prefer to study. Personal factors such as wanting to keep on existing phone networks, or keep an existing phone number, were identified and initial suggestions about how a mobile device could support learning were explored. It became clear that in three out of four cases the students selected had reasonably good access to the Internet, and the fourth student could access e-mail on an occasional basis. It was also clear that the students travel a lot locally and sometimes internationally, and mobility is therefore an important factor to be considered during the pilot project and in scaling up mobile learning to the wider student community.

The selection of quotes that follow in Box 1 are drawn from interviews and provide some indicative impressions of the context, and initial ideas the students had in relation to the potential for m-learning.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex A

Box 1: Student Insights from Malawi and Tanzania

The context

Student 1 - Malawi: “In Dwanga there are more cell phones than computers”

Student 2 - Tanzania: “Coverage is getting better and better. Three or four years back it was mainly available in the centre of town but now you can even go into the villages and there is very good coverage.”

Student 1 - Malawi: “We have the cell phones when we are out in the field so that we can be reached there and given information which we can pass on to the farmers.”

Student 3 - Tanzania: “With the call back services available I can call my mum in a village far away - she can just send me a message ‘call me’ and I can call her”

Student 1 - Malawi: “Most people know how to charge their cell phone batteries. If they don’t have power they will go to their friends house or use a charger (which work on car batteries)”

Student 4 - Malawi: “I think the cell phone technology in Malawi has changed the way we live and the way we do things basically in terms of communication. Nowadays you don’t see many people posting letters; also in terms of the younger generation most of their money is been spent on cell phones because they call their friends. It has become easier to communicate and almost every young person has got a cell phone.”

Student 2 - Tanzania: “SMS banking is available – you can send credit through a mobile phone to somebody else”

Student 4 - Malawi: “Right now people are advertising on the cell phone and it is used for public awareness. In election times you see messages coming in terms of voting…”

Supporting learning

Student 3 - Tanzania: “I think one of the changes that can happen to the distance learning programme is that somebody could use the cell phone to connect to the internet or use an application in order to access the online learning environment”

Student 2 - Tanzania: “I remember last year when I had to travel because we travel a lot, I had to take the printed material with me which is heavy. Sometimes when you are doing a TMA you have to write it down on paper and you have to have your books with you so when you come back and you have access to computers you retype the thing. It makes life difficult but if you had a device where you can process some words or access some things even when you are away from your PC that would be the best option.”

Student 1 - Malawi: “Sometimes as a distance learning student I have some questions which I would like to have somebody answer for me immediately. If it then could be done through my cell phone it would be wonderful; with limited access to the internet it means that I will receive that answer in two or three weeks time, it is frustrating…”

Student 2 - Tanzania: “If you are mobile and your learning is also mobile then it could make a lot of difference because if you spend two weeks without going through your materials then you may not be able to catch it up.”
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex A

Student 1 - Malawi: “If you can read information from your cell phone, add information to it and transfer it to your PC, that will be easier to read because of the screen size….but I think storing material on the phone could be quite useful”

Student 4 - Malawi: “if you hear the sound of somebody speaking something, and even see pictures or something which is audio visual, I think that will be very very interesting…”

Student 2 - Tanzania: “It would make a lot of difference if I could listen to some recordings of lecturers. Sometimes it is interesting to hear and see rather than to go through the books”

Student 1 – Malawi: “It will be helpful to interact with other students using the cell phone”

(4) PRELIMINARY ACTIVITIES

The four students helping with the project were given an initial task of finding out about available phones, and recommending a model that they should test for future use by a larger group of students in the next phase of the project. The activity made use of their existing phone models, and a combination of e-mail and SMS, confirming our ability to communicate with the students in these ways.

Mobile phone services fall into three main groupings:

i. Basic level services: voice call and text messaging  
ii. GPRS services: transfer of data and multimedia on an asynchronous basis  
iii. 3G services: real time video calls

Handsets typically have features that are designed to operate well at one of these levels, and students surveyed currently make use of basic level services. From the exercise carried out by the four students involved in the initial pilot phase it became clear that, within the context of this project, we were going to be looking more to the future with the selection of a mobile phone with smartphone capabilities (that support GPRS and potentially 3G services). The model chosen by the students is shown in Figure 9.

Figure 9: Nokia N70 Phone Selected by DLP Students for Piloting M-Learning
One of the major perceived benefits of this model to the students was that it avoids device proliferation, as it incorporates the capabilities of a phone, FM radio, video and still camera, music and video player, and audio recording in a single device. It also supports storage of files on a removable storage card.

The model selected can be purchased and maintained locally (2006 price: Tsh 570,000 = approximately USD 450), but transferring money and arranging contracts locally was problematic, so it was decided to supply phones from the UK, although this may not be practical in any future scaling up of activities. The phones (with a monthly credit allowance transferred to the student to encourage usage) were supplied to the students in exchange for a commitment to support the project research activities. Through the provision of a specific model we established better control over the variables, and rather than getting varied feedback due to diverse equipment we could concentrate our own learning on the appropriate and effective educational use of the device.

The opportunity arose to deliver the phones personally to the two students in Tanzania and show them how to use different features. By contrast the phones were sent by DHL to students in Malawi. This has allowed us to contrast the two groups, and determine the extent to which training makes a difference. In practice, both groups progressed well and required no additional support or help from each other.

A wide range of practical issues were identified from the survey and country visits that highlighted important concerns to be considered further in any scaling up of the project to a larger group of students. These are shown in Table 4:

**Table 4: List of practical concerns to consider**

1. Costs of handset and usage
2. Coverage of access
3. Theft of the device
4. Reliability
5. Damage
6. Power supply
7. Insurance
8. Import Duty

There are also issues in determining the most affordable ways to offer mobile support to the learners, and whether to supply a specific handset to students, or support a wide range of models that students have, provided they meet minimum specifications.
When they received their phones the four students were asked to carry out the following preliminary activities aimed at testing their ability to use the technology, without significant levels of support, and communicate with the DLP:

i) Texting messages to the project team
ii) Recording of audio, video and images, making use of two different cameras included on the phone, and sending the files to the project team via their PCs.
iii) Communicating with other members of the team

These tasks were all successfully completed without the need for substantial guidance given to the students on how to carry out the task. This confirmed to us that it was feasible to design activities that involved SMS, file transfer and communication via email. Students also proved to be very competent in making use of resources stored on their phone, and view or listen to audio resources made available on a removable storage card.

(5) PILOTING M-LEARNING SUPPORT FOR TWO COURSE MODULES

Once these tests were completed work focused on designing learning activities that are being piloted with twenty students based in developing countries. These students have all been supplied with the Nokia N70 phone. Ten are based in SADC countries and studying the ‘Rural Development’ module, and ten are based in a broader range of developing countries in Africa, Asia, West Indies and the Middle East and are studying the course module in ‘ICT for Development’.

Drawing on the pedagogic approaches identified in the literature review, three major instructional design options are now being explored. These are:

(i) the design of effective learning activities (that potentially involve collaboration and sharing among students) that make use of the multimedia and communication capabilities of the mobile phone,
(ii) the redesign of course content so that it can be readily used on the mobile phone through greater emphasis on audio visual content, and interactive features such as quizzes
(iii) the enhancement of remote tutoring by considering the potential role of SMS, MMS, mobile blogging, pod- and video-casting

The module tutors for each of the two modules have become involved in exploring how these options could best enhance the module that they are responsible for. This has resulted in different approaches being explored with each module, as highlighted in Table 5 below:

<table>
<thead>
<tr>
<th>Table 5: Mobile Learning Design Approaches for Two Course Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Rural Development'</td>
</tr>
<tr>
<td>Contains a lot of narrative, and is not particularly technical.</td>
</tr>
<tr>
<td>The context where the student is based is relevant to the study. Students travel on field visits providing the opportunity to relate learning</td>
</tr>
</tbody>
</table>
to the practical challenges students face in their work.

<table>
<thead>
<tr>
<th>Materials designed and being tested include:</th>
<th>Materials designed and being tested include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick quizzes which students can use to test themselves on basic factual information, making use of ‘learning moments’ – brief periods where they can study whilst on the move</td>
<td>Short video conversations with the course author/tutor introducing the unit, and highlighting some of the key learning points and topics for debate</td>
</tr>
<tr>
<td>Mp3 audio files providing a narrative of the module unit content, that the student can listen to if they have their phone with them</td>
<td>Provision of short videos supplementing the content of the study materials, or providing alternative study materials that can go further than the printed materials in illustrating a concept</td>
</tr>
<tr>
<td>Videos compressed to 3gp file format, that the students can watch on the phone, giving short case examples</td>
<td>Development of major new types of assignments that are based on activities and replace the traditional TMA. The approach being developed involves using the mobile device to work through a series of activities that help students reflect on the learning materials, and engage where possible in short research or practical activities. There are two deliverables: a small multimedia portfolio and an assignment in more traditional essay form. Both are submitted to the tutor for assessment and feedback.</td>
</tr>
<tr>
<td>Polls to solicit opinion on particular topics and feedback on course materials, that can be sent to the tutor by text, and responded to in the tutoring process</td>
<td></td>
</tr>
<tr>
<td>Activities that students can do to supplement their learning, that make specific use of the phones audio recording and image/video capturing capabilities</td>
<td></td>
</tr>
</tbody>
</table>

In both cases the students are supported by tutors based in the UK and during 2007 the pilot is also exploring the scope for:

- Preparing multimedia digests supplied to students for viewing and listening to on their mobile phone
- Drawing on contributions submitted by students and encouraging sharing any interesting audio or video material with the wider group. Students may also be encouraged to develop and share their own audio narratives for module units.
- Use of SMS by tutors to encourage completion of work and by students when they need to ask for help – perhaps when they are studying away from their office

Significantly, resources that the students capture on their mobile device and share with the tutor may also contribute to the development of the modules in future. They may represent useful learning resources including case studies and examples from different contexts that can form part of a repository or be integrated with the course module. In this way the students may become both beneficiaries of and contributors to the educational process, which is an important element of the evolving distance learning pedagogy of the DLP. Given the rich diversity of the DLP’s student
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex A

community, this also represents a wonderful opportunity to build a student community with unique global access to a pool of current knowledge.

DISCUSSION AND PRACTICAL APPLICATION

In this section, we will reflect on the pedagogic model, and also on some of the technical design decisions that the project team made.

REFLECTIONS ON PEDAGOGY

In our background discussions, we indicated that the DLP is seeking to develop a pedagogic model that encourages constructivist activities that involves collaborative learning and that is situated in the context. Distance learning also links strongly to processes of informal and lifelong learning. A study by Bright et al (2004) based on a survey of all the DLP students, and meetings with students in Hong Kong and Zimbabwe, revealed that the educational and pedagogic background of many DLP students lead to expectation of the educational process being primarily shaped around a process of knowledge transfer from expert teachers. By contrast those involved within the DLP designing the OLE had assumed a more constructivists model. Alongside the access barriers, this pedagogic factor probably contributed to participation in the asynchronous online discussions being lower than hoped.

The same study indicated that many DLP students pursue further study to support career progression through gaining qualifications. Interestingly, it also highlighted that DLP students work mainly in the development sector where participatory approaches to learning and professional development, are increasingly common.

Preliminary feedback from students involved in the project, has welcomed the audio and video content, and suggests that this more personal contact is encouraging, and can increase student commitment. The convenience of being able to learn by using the phone in different situations and in short study sessions is also being commented on.

Set against these insights, the authors make the following observations in relation to the design of learning materials and tutoring approaches for this project:

- Provision of audio visual content, and resources that replicate familiar experiences (such as lectures and quizzes) are quickly adopted, and these approaches suited the ‘Rural Development’ module subject matter.

- Introducing ideas that encourage learning among peers, sharing and contributing to the educational process represent more progressive and innovative approaches for the students to engage in. The more collaborative activities designed around production of new types of assignment deliverables and ‘learning by doing’, as reflected in the ‘ICT for Development’ module, may take more time to gain ‘buy in’ as they have to become contributors as well as beneficiaries. Interaction with the tutor and a well-designed support environment for mobile learning are likely to be more critical.

In both cases mobile technologies certainly provide suitable tools. The immediacy of communication, rapid feedback, and the scope for student involvement in creating and sharing learning materials and sharing experiences, is more apparent and accessible that in other technology mediated models. Experiential learning can provide feedback into the learning community at large, both in the present time and for the future. This creates the opportunity for designing a more successful constructivist model for supporting distance learning than prevailing e-learning models.
TECHNICAL CONSIDERATIONS

Important technical decisions had to be made about how to develop the learning materials and make them available on the mobile phone sets. This will not be covered in depth, but Table 6 below summarises the choices made and provides the underlying rationale.

<table>
<thead>
<tr>
<th>Choice</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>To develop content initially using XHTML, and later on consider use of Java and / or Mobile Flash for more complex interactive content and advanced quiz features</td>
<td>Decision to keep the technical approach as simple as possible, and enable students to access materials through a familiar environment, i.e. the mobile equivalent of a web browser. This encourages portability, and interoperability, and independence from particular phone models.</td>
</tr>
<tr>
<td>To distribute content on CD, External Storage card (SD, CompactFlash etc), and exchange files via synchronisation with a PC and email attachment.</td>
<td>GPRS and 3G Services remain expensive and coverage for these services is patchy. Web based delivery of content could be considered at a later stage. This promotes broader access, though synchronising with a PC and emailing large files is a potential problem</td>
</tr>
<tr>
<td>To supply all students with the same phone Nokia N70 model</td>
<td>Enables the project to retain a focus on the educational components, without the distraction of diverse hardware</td>
</tr>
<tr>
<td>Not to develop any special tools that assist students in storing files in the right location when they capture audio and video or exchange files with the programme.</td>
<td>We are impressed by the usability of the software supplied with the phones, and are of the view that if the students know the folder structure we have developed for the mobile content (which is consistent with the CD folder structures) then with adequate documentation they can successfully do their own file management.</td>
</tr>
</tbody>
</table>

Designing for the small screen was a challenge, and drawing on the ideas of Jones and Marsden (2005), careful thought is being given to how best to do this. Audio and video alternatives to text are being developed where possible, and the usability features of the phone model and browser software also facilitate the design of efficient navigation. In practice, a few unexpected technical challenges have been encountered relating to audio capture time limits and slow performance if audio or video files stored on the external card are launched via the phone browser. These problems are being investigated but should not be insurmountable as the handsets rapidly become more powerful.
FUTURE TRENDS AND RECOMMENDATIONS

Since we started planning this project in 2006, the price of the Nokia N70 handset and equivalent models, together with the price of removable storage cards has halved. Coverage and roll out of data services in Africa is also gathering pace. The assumption we started with, was that whilst we were making use of expensive relatively high end equipment at the outset, the picture would look very different by 2009, and we should be gearing up our programme for a context where powerful handsets would be widely available in Africa along with real time data services that would remove the need for our current file transfer model.

Alongside the technological advances, we are also seeing rapid developments in the following relevant areas:

- Emergence of social software on the internet and mobile devices, providing a global platform where individuals publish audio visual content from remote locations (e.g. via mobile blogging), and collaborate on the creation and development of ideas. This trend is likely to make more people familiar with constructivist approaches.

- Emergence of standards for sharing content (learning objects), and development of new licensing approaches such as creative commons that provide incentives to innovators alongside dissemination of knowledge. Repositories of open educational resources are being developed and becoming accessible to mobile users.

MOBILE LEARNING ENVIRONMENT

These trends point to the need for further research to be carried out on how best to provide a coherent environment for mobile learners that integrates the potential of the ‘Web 2.0’ services. Figure 10 provides an overview of the bigger picture, showing different application and system components that could eventually be integrated, and need to be considered from the perspective of the mobile distance learner.
Developing the Environment for Mobile Learning

The role of tutors within this environment is not illustrated, but will be critical in facilitating student understanding of the different tools and how they support individual and group. It is also likely that formal learning environments may also be superseded or at the very least complemented by personal spaces where lifelong learning is more effectively supported.
CONCLUSIONS

The outcomes and lessons being learned from this project should not be regarded as prescriptive, but some of the key learning points for the DLP in relation to the specific SADC context are as follows:

- The introduction of mobile learning is complex and multi-faceted, and a range of pedagogic, practical and technical issues need to be carefully understood.
- Mobile learning approaches need to be considered alongside traditional and e-learning models, and some of the emerging technical requirements for m-learning (for example greater emphasis on audio-visual content), in turn influence the design and authoring approaches needed for the DLPs CD based courseware and printed materials.
- Attention needs to be given to a coherent learning environment for mobile distance learners, that takes account of future trends, and the emergence of social software.
- Keep it simple, personal, and avoid device proliferation.
- M-learning supports the development of new study skills:
  - learners can interact, create and share valuable learning resources e.g. they could share audio versions of course materials they record themselves with appropriate regional accents, share photos and videos providing insights into their context; and
  - make use of brief study sessions in unusual locations.

M-learning is certainly not an end in itself so it is important to consider where it fits within a holistic learning model, and evaluation needs to identify added value in relation to clearly defined objectives. At the outset we identified the needs the DLP identified to enhance:

i) Communication
ii) Access and participation
iii) Tutoring support to students in diverse locations
iv) The usability of learning resources for students who are very mobile
v) Access to content and programme materials

In all five cases, the pilot project is providing insights into how mobile learning can help achieve these objectives, and we hope this case study has shed light on this that will be helpful to readers. We set out in this project to focus particularly on the needs of students based in developing countries. It is interesting to reflect that the possible solutions emerging provide the best hope for a learning environment that has global reach, and where common approaches can be developed and enjoyed equally by all students irrespective of their location. This has to be one of the major enhancements and attractions of a model incorporating m-learning.
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SHORT BIOGRAPHIES OF AUTHORS

Jon Gregson

Jon Gregson is currently Programme Director with responsibilities for development and operations, within SOAS’s newly formed Centre for Development, Environment and Policy (CeDEP), and was formerly in the same role for several years with the Wye Distance Learning Programme (DLP) of Imperial College London until the DLP was transferred to SOAS in August 2007. He is responsible for the “Learning Technology and Production Team” and oversees the development of electronic courseware and learning environments. He also looks after the development of educational and student support systems used for distance learning programme. He manages a range of international collaborations on behalf of the programme, including support for a large number of Commonwealth Scholarship students in Southern Africa in cooperation with University of Pretoria, and involvement in the Global Open Food and Agricultural University (GOFAU) initiative which is lead by the International Food Policy Research Institute (IFPRI), and is developing a range of courses based on open educational resources.

He holds Master’s degrees from University of London in “Managing Rural Change” and from University of Lancaster in “Distributed Interactive Systems”. He is one of the founding fellows of the University of London Centre for Distance Education (http://www.cde.london.ac.uk/), and is the grant holder for a two year mobile learning project focussed on the needs of postgraduate distance learning students in the Southern African Development Community. Over the last five years he has been involved in authoring and online tutoring of courses in “ICT for Development” and “NGO Management”.

He has lived for several years in Nepal and Kenya, and worked extensively in parts of Africa and South Asia.
DOLF JORDAAN

Dolf Jordaan is an e-learning project manager within the Department for Education Innovation at the University of Pretoria. He is a manager of an e-Education division within the department including Instructional Designers and other support staff. This division supports academic staff at with e-learning projects. He is also involved, as a Project Manager, in web and multimedia projects. He has also lectured in multimedia design and development and in project management at the university. Dolf is also a consultant for national and international e-learning projects. He is a qualified educator and holds a master’s degree in Computer Assisted Education.

During the last few years he has been involved in international collaboration projects. He is involved in the management of the e-campus at the university since 2003 and is responsible for the coordination of e-Learning and Learning Management System related applications. He is currently Project Manager for the implementation of Blackboard Vista Enterprise Edition on campus.

PROJECT TEAM

The authors would like to thank the following members of our project team:

- Paul Smith who together with Jon, has designed the mobile learning resources for the ICT for Development module, and given invaluable support and advice in relation the authoring of this chapter.
- Mike Stockbridge who designed the mobile learning resources for the Rural Development module, and is tutoring that module
- Emmy Patroba and Emmanuel Kitwala based in Tanzania, and Rex Chapota and Mike Matsimbe based in Malawi, who from the outset have given us their advice and feedback from the perspective of students based in the SADC region.
The principal criteria that determined the overall approach to this part of the Mobile Learning project were to:

- Develop a range of learning skills;
- Focus primarily, although not exclusively, on the use of mobile technology in the field;
- Facilitate a learner focus with the emphasis on “learning by doing” whereby learning and study skills are “pulled” from the student rather than being imposed from the provider/teacher;
- Ensure user friendliness and relevance;
- Encourage openness on the part of the learners and a willingness to share information and knowledge through participation in the development of ideas for practically-based learning;
- Develop skills in terms of collaboration, communication and the use of multi-media tools for learning;
- Demonstrate that activity-based learning skills can be developed as building-blocks towards the preparation of a piece of work (a TMA) that is assessable;
- Promote enjoyment of studying and encourage innovative thinking whereby the learner is aware that s/he is also contributing to the learning/studying process.

It is against these criteria that the evaluation of the project, thus far, needs to be measured.

The project was divided into three phases, relating to Units 1-4 (Phase 1) and 5-8 (Phase 2) in the main, and 9, 10 (in the form of a wrap-up) of the C104 module: Information and Communication Technology for Development. The principal focus was on sets of learning activities, embedded within each of the units, building towards the preparation of a Tutor Marked Assignment (TMA) following units 4 and 8, replacing the more conventional TMAs presented in the 2007 version of the module. The style and form of the TMA varied between Phase 1 and Phase 2.

In Phase 1 the development of the TMA was prescribed through several parameters, and these were conveyed to the learners at the outset of the pilot, the aim being to build up skills and knowledge progressively towards the preparation of the first assignment, as learners worked through the first four units. These are shown in the box following.
The TMA will support an interactive/activity based approach that builds towards an assessable entity as a primary outcome;

Learners will be encouraged to use the full multi-media capabilities of the mobile phone through activities that range from submission of short video and audio files, to digital images that incorporate use of Powerpoint slides, diagrammatic representation and so on;

The various elements will also seek to investigate the potential for learners working together, sharing ideas, information and knowledge and the extent to which their own job-related environments can contribute to the learning process;

The opportunity for improved interaction between the module tutor and the learner will explored also through this process: one example would be to look at the potential for designing fairly simple multi-media versions of e-digests;

An ultimate aim of this building-block approach to the TMA will be to replace some of the module content, making it less text dependent by utilising outputs from the learner-focused activities: interviews (with experts, tutors, field-workers), video extracts, photo essays, short interactive content that can explain concepts through more effective delivery than the written word;

This means that progressively learners will be providing important inputs into the learning process via their own experiences of studying as professional, work-based learners.

Learners were then provided with a set of aims, objectives and preparatory notes focused on outcomes:

**AIMS (LEARNING AIMS)**

- To promote/develop the concept of using the mobile phone as a learning device, and to assess both its benefits and limitations;
- To provide a range of activities that are based on the use of mobile phones to develop a range of relevant learning and study skills and to engage with important content;
- To associate these activities with key sections of the module text through units 1 to 4 of C104, that have been selected with the purpose of demonstrating how knowledge can be developed through a “building-block” approach, and how important strands of thinking can be connected to produce a meaningful product: an assignment that is an entity in its own right (Comment: this probably needs breaking up into at least two aims).

**OBJECTIVES (ACHIEVING THE AIMS)**

- To produce a “portfolio” for an organisation in the development sector: this can be the learner’s own organisation;
• To demonstrate through this portfolio the benefits and limitations of using mobile technology as an aid to understanding and disseminating to a wider audience some key issues relating to the role of ICT in achieving sustainable development goals.

PRECORATORY NOTES FOR THE LEARNER

Your organisation (or a development organisation known to you) wants to understand the progress you are making with the ICT4D module.

In particular, the organisation wishes to learn how the use of mobile phone technology can be seen as an aid to understanding, awareness-building and dissemination of knowledge within the development sector, on achieving sustainable development goals.

The questions being asked are: How does it benefit you? How does it benefit us? Are there any problems in the use of this technology?

Using the activities designed for practical application of your mobile phone in a variety of circumstances, develop a portfolio of the outcomes of these applications to demonstrate both the benefits and the limitations of its use for awareness building and understanding of key development issues.

For each activity think about the value of using your mobile phone. Evaluate its use in terms of both positive and negative outcomes.

The activities upon which the building blocks of the TMA were to be based were embedded in specific sections of the text through units 1 to 4, linking themes and sub-themes to the overall context of the assignment. The detail and explanations for these activities were conveyed to the learners in both written and audio form, for ease of access using their mobile phones. The full text of the audio materials, related to Phase 1, is provided in Annex 1 of this evaluation.

Following the introductory activities, designed both to familiarise the learners with the functionality of the mobile phone and to introduce them to the overall learning aims of the module, a total of 14 activities were provided that varied in terms of their complexity and anticipated time for execution. The primary aim was to encourage the participants to explore the full potential of their mobile phone as a learning tool, and also to underline its limitations as well. Full details of these activities, with their intended outcomes, are contained in Annex 1.

In Phase 2 it was decided to focus upon a more conventional, essay style assignment, and to reduce the overall number of activities as building blocks in its preparation. This was done after reflecting upon the probably over-ambitious expectations that participants would be able to carry out all, or at least the majority, of the activities in the first Phase.

Here the principal learning objectives were set down as follows:
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex B

- To build upon the practical experience gained so far in using your mobile phone as a learning tool and, in particular, to develop the benefits
- To undertake practical activities using both the audio and visual facilities of the phone, without necessary recourse to the study text
- To maximise the capabilities of immediate capture of information in a work or field situation
- To be prepared to share your findings with your peers in the study group and to use collective experience as far as possible as inputs into your essay work
- To keep a weblog or a diary of your activities, again with a view to sharing your experiences with others, through the tutorial forum and through Google mail

As with Phase 1 the aims and objectives for the second assignment were provided for the learners at the outset, that is from the commencement of unit 5:

**TMA02 GENERAL LEARNING AIMS**

- To support an interactive/activity based approach that builds towards an assessable entity as a primary outcome
- To investigate the potential for learners working together, sharing ideas, information and knowledge and the extent to which their own job-related environments can contribute to the learning process
- To provide the opportunity for improved interaction between the module tutor and the learner, via the on-line forum, e-digests and google mail

**TMA02 SPECIFIC LEARNING AIMS**

- To examine the theme of ICTs and poverty reduction, a principal them of unit 8
- To undertake a series of audio-visual activities from unit 5 to 8 using the mobile phone in the field
- To demonstrate how knowledge can be developed using a building-block approach to investigate a specific issue or problem
- To explore the potential for sharing knowledge and information about a specific issue as an aid to learning
TMA02 LEARNING OUTCOMES

- To prepare an essay in more traditional academic format
- To base your essay on a focused, limited objective within the subject context of the use of ICTs in helping to achieve the millennium goal of poverty reduction
- To demonstrate the benefits of sharing resources where possible

The idea of preparing a more conventional essay for this second TMA was intended to provide a counterbalance with the more innovative style of the first TMA, and could also provide valuable practice of structuring an argument in preparation for the module examination.

In the four units 5 to 8 the number of embedded activities was confined to six, with a broader ranging, less prescriptive remit to encourage the learners to experiment more with the mobile phones. Details and explanations are to be found in Annex 2.

Phase 3, covering units 9 and 10 of the module, were devised as a “wrap-up” for the whole exercise and took the form of a question and answer session, provided in audio-visual format, between the module author and project director, Jon Gregson, and the C104 project researcher, Paul Smith. Details can be found in Annex 3.

Indeed, this was an approach followed throughout the project, with each Phase being supported by an audiovisual introduction, featuring Jon Gregson and Paul Smith, and followed by an in-depth audio transmission (following the text provided in Annexes 1 and 2).

EVALUATION AND OUTCOMES

The progress of the project was subject to periodic monitoring and update, both via the online tutoring forum (Jon Gregson) and through separate Gmail accounts, set up specifically for the purpose of getting student feedback and responding to this (Paul Smith and Jon Gregson).

Ten students were the original participants at the outset, but this reduced to eight during the rolling out of the pilot itself, two participants being unable to devote sufficient time to do the project any justice. Of the eight remaining, every participant managed to undertake at least some of the activities, as assessed by the feedback posted on-line, principally via Gmail. A file of resources containing the various elements of this feedback is available, separate from this summary, and this is the subject of separate evaluative scrutiny.
The overall evaluation of the project has been derived from an evaluation form that was sent to the participants via Gmail following completion of the module (that is after the thirtieth study week). The template for this evaluation can be found in Annex 4. Essentially this follows the sequence of the pilot through the three phases and ask students to evaluate key elements, in relation to the original criteria as set out on page 1.

Of the eight sent out four have been returned, with comments by email from a fifth, and some additional supplementary feedback, again via Gmail, from one of the four respondents. A follow-up email has been sent to those yet to respond.

Themes are grouped under a number of headings:

A. GETTING STARTED

The initial activities of familiarisation were carried out by most of the participants, with detailed responses coming from five. The general tenor of response was positive:

“For me was very easy to get familiar with the phone and start using all the resources. Instructions were very clear and simple.

One suggestion would be to send to student’s MMS/SMS or any on-line message during the course in order to create the sensation of on-line and mobility.

And also in cases where the costs of connection are not so high, stimulate communication (e-mail, phone, MMS, SMS, etc) using the phone.”

“The initial activities are very useful for laying the foundations for using the mobile phone to complete the later tasks. Things like creating the folders, transferring files from the phone to the computer turned out to be really simple but a bit overwhelming if you have never done these things on a phone.”

“I kept most of ideas and thoughts concerning the getting started activities in my head rather than writing them down as was suggested. I did spend a bit of time familiarizing myself with the phone’s functions. I had recently purchased a digital camera and I have found this phone to be just as functional or even better than the camera in terms of taking photos and video.”

One respondent felt the initial activities were not user-friendly enough:

“I think the Getting Started activities were a little user unfriendly. It took me a while to realise exactly what was required because I felt somewhat confused about the activities. At first I did not realise that I would have had to download the text recorded on the mobile handset into the computer. The audio recordings required were not possible with the handset and I could not think of another way of recording these. Also transmission of the activities to the tutors was a problem. In the end I opted to record some of the activities on
a DVD and posted it when I was in London. Perhaps a shared blog or website would make it easier to communicate and share the activities.”

These are quite encouraging replies. The point about setting up a weblog was taken up in Phase 2 of the project, but this really needed addressing from the outset to enable learners to familiarise themselves with this approach (not easy for some) and benefit from cross communication.

B. PHASE 1 UNITS 1-4

All the respondent had a go at some of the activities in this Phase, but no-one managed to undertake all of them, and only one submitted a TMA based upon his work. With hindsight it has to be said that, whilst pedagogically sound, this was a very challenging and hugely ambitious ask. It was attractive to be innovative and to design activities that would not only test the capabilities of the mobile phone as a learning device, and the capabilities of the students in undertaking the tasks proposed, but would also build to an assignment.

Of course, assignments are not mandatory and do not count towards assessment. The one learner who did complete the first assignment made this point quite strongly:

“The tasks to be done could have been made less daunting by listing them in a more concise format instead of reproducing the text from the audio. It was an interesting though demanding project. I would encourage its continuation and urged that it be graded to add towards the final mark in the course.”

In terms of helpfulness, for all activities listed, there were 12 “very helpful” comments recorded, 12 “quite helpful”, and one “not helpful”, from a total of 25 activities undertaken

Overall, there was a sense of frustration at not having enough time to undertake the tasks effectively. The following comments are typical:

“I was unable to do most of the activities, mainly because of time constraints. I suspect that all of the activities would have been useful in engaging with the course material. I prefer conventional essays or projects, I think, because that’s what I’ve been accustomed to. My main problem was that I was behind in the course module, very far off the course calendar, so that I was constantly trying to catch up – this made sticking to the Activities almost impossible for me.”

“Unfortunately I was not able to fully deliver on these due to my preoccupations with moving to the UK etc. But particular to the mobile project, I think that more interaction between the participants of the projects (the students and the tutors) would yield more interesting results that could be shared in the course of the activities. This would also help increase the confidence of the students.”
It does seem that the project design was flawed in terms of the expectations of what the participants might actually be able to achieve and the way in which the requirements were communicated. Although a lot of time was actually spent in trying to make explanations as clear as possible, there is a general sense of a “task being too daunting” and there just being “too many activities”. Choice and possible selection were options offered, but in practice this is a somewhat loose approach. **Clarity of explanation and quite tight prescription** are key lessons to learned here.

### C. PHASE 2 UNITS 5-8

The points above could equally be applied to this phase in terms of expectation, and the fact that participants were already well behind by this middle stage of the module, increasing the pressure of time constraint in particular. This is borne out by the fact that only 5 activities in total were undertaken, four of which were deemed to be “quite helpful” and one, in relation to scoping the second assignment, “not helpful”.

There are some interesting comments about the nature of the assignments, and preferences expressed for the more conventional essay type approach. Although perhaps not surprising, this is somewhat discouraging. The following comments give a flavour of this feedback:

“I preferred working towards a more conventional essay but again because of time constraints could not put in the level of effort that would have made the exercise very helpful. The conventional essay also helps in the formation of ideas, flow etc. which is useful for the exam.”

“I personally would have preferred a more conventional essay, unless the mobile project would have touched on a more specific task rather than the generalised topic of the role of mobile handsets in ICT4D. For example, if each student would take on a task determined by the tutor. Also if more sharing among the students would be encouraged and perhaps joint activities, where each student would fill in their part from the perspective of their environments and would contribute to an eventual single outcome.”

“I was unable to do this TMA (the essay) because of time constraints but I saw nothing wrong with it.”

### D. USE OF AUDIO-VISUAL SUPPORT

This was generally seen very favourably, and indeed it is a presentational medium that could be taken a lot further, resources and time permitting. The following comments are all positive and encouraging, in one way or another:

“Yes, this was really very helpful and good idea, mainly in a distance learning course.

This could be more exploited and used.”
“The A-V support was a refreshing break from the quite dense module and readings. It’s quite difficult to go through all of the material so to have a “face-to-face” component, as in a real classroom, was a welcome break.”

“I only managed to find it particularly useful when I discovered that the material stored in the handset was downloadable into the computer. These included many files I didn’t know existed in the mobile until I saw them as a file in the computer (eg. The text format of Getting Started etc.) I think the audio-visual support was very useful but it would have been better if complementary to the course text, several practical examples were deliberated on more. I still do not know how to access all the files stored in the mobile, other than the video/audio files. Is it possible to store long texts in the handset? If this is possible, it would be extremely useful for field work.”

E. OVERALL COMMENTS AND ASSESSMENT

These were generally positive and favourable in the main.

“In general I believe it’s a very powerful tool and must be explored. Mobiles phones are getting very sophisticated and integrated with many functions. The possibilities are enormous and I believe you are in the right path. I believe you will be able to find very creative and efficient solutions that will be able to be used in all modules.”

“One thing that I believe that could be improved is the communication regarding the activities. For me it was not very clear what activities should be done and after I sent an e-mail about some doubts, I didn’t get the feed-back. It was a little bit frustrating. It was also very difficult for me, and this is my fault, to spend time to clear my doubts and explore the material in deep details. This year my 2nd child was born and it was a big challenge to balance my job, modules study, TMA’s and family.

My recommendation would be to make activities more direct and clear, mainly for people with time constrain like me.”

“The overall experience was very good and as I mentioned the possibilities are really fantastic for the future.”

For all the respondents the strengths of using a mobile phone as a learning device outweighed the weaknesses. The following feedback underlines a number of preconceptions that the research team had:

Mobility: you can carry with you everywhere you go. Possibility to be integrated with the internet with broad-band (3G)

Convenient – its difficult to carry the module with you. Makes effective use of time since learning or revising can take place anytime or anywhere
The AV support is particularly welcome, as this is a distance learning programme which tends to make the student feel disconnected.

Having many tools integrated into a small hand-held device is very useful and handy/convenient. The mobile handset could be used as storing information downloaded earlier by the computer, used as a database. It would also be used for conducting interviews on the spot, capturing visual records etc.

These days a lot of time seems to be wasted stranded when on the move, eg. Traffic, vehicle breakdown, flight delays etc. Having material stored on the mobile will allow optimal use of valuable time, provided this is taken into consideration and that data is updated and maintained properly in the mobile handset.

Use of the mobile handset for storing learning material is very inexpensive and handy to use.

A number of weaknesses or limitations were identified and these will need to be addressed in the second stage of the overall project:

The handset does not allow playback of the videos other than from the beginning. For example, while listening to a clip of about 20 minutes, a phone call in between will interrupt and the whole clip has to be viewed again from scratch.

At this instance, particularly in certain countries, use of mobile for more sophisticated learning might prove difficult (eg transmission of images, audio clips etc to international destinations will prove to be practically impossible)

Currently the internet holds much more strength and I think use of the mobile phone would only be considered in truly remote spots, in the field, on the move where access to the web is impossible. But this seems to be diminishing as the wireless access expands to wider networks everywhere. Where there is mobile connectivity there is bound to be internet connection as well.

Service is still expensive in many countries like mine (Brazil)

It is quite difficult to type text.

Difficult to become accustomed to using a phone a learning tool

There is sufficient feedback at this stage to enable significant changes to be made in Part Two of the project, that will run through 2008. It is a reasonable judgement that it has been a qualified success to date, given the high demands made on the participants and the still very new (and raw) opportunities that mobile learning offers to the distance learning student.

Paul Smith

December 2007
ANNEX 1:

Accompanying text for audio/visual presentation on TMA and Activities for Phase 1, Units 1 - 4

AUDIO-VISUAL INTRODUCTION

Hello – Jon and I have given you some introductory ideas about this project and I am now going to take you through the principal tasks we would like you to undertake, leading to the production of your first Tutor Marked Assignment (TMA). This will involve studying the first four units of C104, focusing on particular themes that we will identify, undertaking a series of activities using your mobile phone, and developing an assignment through these. We see this as a “learning by doing” approach to studying, and it seeks to build upon those skills you already have acquired as someone with professional experience in the development sector.

I am going to take you through six stages that build towards the goal of producing your TMA:

The first is “getting started”: asking you to think about your reasons for studying and what you hope to get out of it. It will focus on using your mobile phone.

The second introduces the TMA and our thinking behind it.

In the third I give some key aims and objectives for the TMA and some preparatory notes to guide you.

The fourth stage looks at the themes we have chosen from the first four units, on which we are asking you to focus in particular in developing your TMA.

The fifth stage is quite long and detailed. It introduces you to a range of tasks and activities, linked directly to the themes explained in stage four.

Finally, I will give you some ideas about presenting your TMA.

Although you have seen me giving this brief introduction, the detailed explanation of each stage will be provided principally in audio form, supported by text on your mobile phone screen.

Good luck, enjoy your studies and we are looking forward to talking about your progress, particularly through the on-line learning environment.

1. GETTING STARTED

I’d like to suggest one quite practical way of starting to think about this module, before you begin to work through the units. It comprises five quite straightforward activities using your mobile phone.
You have chosen to study C104: Why did you choose this module? How does it relate to your current area of work? Write 6 bullet points that can be displayed visually. Share these with colleagues.

A core theme is “The use of ICT for sustainable development”: How do you see this as relevant to your organisation? How do you expect your study of ICT4D will benefit you and your organisation? Write up to 6 bullet points in answer to each of these for visual display, and share with colleagues. Use these first two activities as a basis for an initial discussion about C104.

The acquisition of relevant skills is a key aim for all DLP modules: What skills are you seeking to develop by studying C104 in particular? What do you see are the major challenges? Prioritise 8 learning skills and choose an appropriate means of displaying these visually, showing things like progression, linkages and areas where further knowledge may be needed.

Starting your study of the Units: Have the activities already undertaken helped you to think in a more focused manner about this module? Keep an electronic record of responses and discussions to use as a basis for self-evaluation as you work through the module. Return to your thinking periodically. You may wish to see this as the start of a Work Diary. You can also start thinking about posting your ideas as a weblog as a means of sharing with other participants in the pilot.

One of the Skills you may have identified is “use of my mobile phone as a tool for learning”: in fact we hope you have, since this a principal theme of this project: What do you think will be (a) the benefits of using a mobile phone for learning and (b) the limitations? We will return to this theme frequently but what we are looking for here are your initial reactions. This time present your ideas as an audio record for sharing. Again restrict the list to no more than six points under (a) and (b).

2. INTRODUCING THE TMA

We want you to see the TMA as an important learning tool that is designed to cover both the acquisition of study and learning skills and the understanding and analysis of important content in the module. This is a new idea for a TMA and so it is important that we introduce it at the commencement of your studies.

You will develop material for the TMA through all the first four units. We have identified the acquisition of study skills as one major outcome. In your initial list from stage one you may have identified writing, presentational skills, interpretive skills and so on – the TMA is designed to help you to develop these and others in a meaningful and enjoyable way through a series of activities that are practically based and focused on you: learning by doing as I said earlier.

We have provided a series of activities for you to work though, related to selected sections of units 1 to 4, to build up a portfolio of materials that will become you TMA. We are
prescribing this process for you, but there is also an element of choice here both in the way you choose to undertake the activities and the actually activities that you do. Some of the activities are key and others are supportive. You can do all of them if you wish, and you can even add some if you have your own ideas.

3. THE AIMS AND OBJECTIVES OF THE TMA

I am presenting these in this section in a quite formal manner, similar to the way that you might expect to find them in other modules within the programme. You will also see this is in the text version on screen.

MOBILE ASSIGNMENT 1

Aims

- To assess the benefits and limitations of using a mobile phone as a learning device;
- To provide a range of activities in units 1-4 of C104 based upon the use of mobile phones;
- To develop important learning and study skills through engaging with these activities.

Objectives (Outcomes)

- To produce an assignment (TMA 1) in the form of a portfolio for a development organisation: this can be your own organisation or one with which you are familiar;
- To demonstrate the benefits and limitations of using mobile phone technology as a learning device to a wider audience;
- To do this by addressing the theme: “The role of ICT in achieving sustainable development goals”.

Preparatory Notes

Your chosen organisation wishes to understand the progress you are making with the ICT4D module.

In particular, the organisation wishes to learn how the use of mobile phone technology can help to increase awareness and understanding of important development issues.

The organisation asks you to consider the following questions:

*How does it benefit you?
*How does it benefit us?
*Are there problems in using this technology in this way?
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To achieve this undertaking you should use the activities you will find in Units 1-4 that have been designed specifically for using your mobile phone in various circumstances, using the theme of “ICTs and Sustainable Development”.

You can develop your portfolio using the outcomes of the applications of your mobile phone in carrying out these activities, to build up a picture of both the benefits and the limitations of using the technology to increase awareness and understanding of important development issues.

For each activity you undertake you should think about the value of using your mobile phone, in terms of both positive and negative outcomes.

4. WORKING THROUGH THE TMA

The sections I am going to describe to you have been selected with a view to providing a range of opportunities for testing the use of your mobile phone in practical situations. Within each section it is a particular theme, concept or issue that we are asking you to think about and to explore through the activity. We are also asking that you consider how far the results of carrying out these activities can be used to replace some of the actual content provided. Can the use or practical examples, executed through mobile technology make your learning experience more meaningful? PLESE NOTE that you should also be studying all the remaining sections in the module; we have just focused on this selection for the development of the TMA.

Selected Sections: building up a picture

Unit 1 Section 3 Linking ICT with sustainable development – sub-sections 3.1 the scope of sustainable development, 3.2 use of ICT within development: some pros and cons, 3.3 underlying issues.

Unit 1 Section 4 The scope of ICT4D - sub-section 4.2 sectoral relevance.

Unit 2 Section 3 Exploring the concept of knowledge – 3.1 the importance of knowledge, 3.2 different types of knowledge

Unit 2 Section 4 Knowledge management – 4.1 introducing approaches to knowledge management, 4.2 learning within organisations, 4.3 the central role of knowledge for development, 4.4 knowledge and development.

Unit 3 Section 1 The basics of communication - sub-section 1.2 a culture of communication

Unit 3 Section 2 Communication tools & diverse media – sub-sections 2.2 conferencing, collaboration and the changing workplace, 2.3 the role of radio.

Unit 3 Section 3 Development communications – sub-sections 3.2 the importance of the first mile, 3.3 communications for development and ICTs.

Unit 4 Section 2 Exploring the use of ICTs in development – sub sections 2.2 growth in the internet and mobile communications, 2.3 ICT applications.
It would be a good idea to have a go at the following activity: you know the scope of the proposed TMA and you now have a selection of headings upon which your assignment is to be based. Just using the headings of the sub sections above as a guide try to construct a diagram that illustrates progression of thinking from the general theme to something that is focused in terms of possible outcomes. For example: how might you start to approach a subject like “learning within organisations” from the point of view of mobile technology? We want you to start thinking about possible issues/themes before you get into the detailed content. This “brainstorming” can be helpful as a way of helping to guide you through content. The task is to produce some ideas that you can communicate via the mobile as a basis for discussion. Don’t worry if this sounds all too much. Try to focus on what you think is particularly important/significant in relation to the general theme. What follows is a detailed approach to building up the TMA activity by activity.

5. DEVELOPING THE ACTIVITIES

As I said this is a long stage and you should plan out how you are going to work through it. I suggest that you listen to the explanation of activities on a theme by theme basis and do each of the activities as suggested once you have completed studying the relevant section. You will see that associated with each theme is a task, and with each task there is one or more activity designed to achieve the task. Activities in bold are ones that you should undertake. Ideally have a go at all the activities because they are inviting you to test and develop different skills.

Linking ICT with sustainable development

The aim of selecting this is to provide an overall context for the task. You may already have arrived at this through your brainstorming in the first stage. This is an important study skill: contextualisation – locating what you are doing within the bigger picture.

Task 1: Assessing the scope of sustainable development and the impact of ICTs. This is potentially huge, so how are you going to contain this, to get out some relatively simple points that are easy to communicate? Have a go at this once you have completed section 3.3. There are three activities associated with this task, the first of which is the most important. So you should certainly undertake this one. Activities 2 and 3 are designed to supplement your findings and use different techniques.

Activity 1: Take this statement “What is local is also global; what is global is also local”. Use it as a basis for a simple interview survey that you will undertake using your phone. Interview a limited number of friends/colleagues at work to ascertain what they understand by this statement. You will have to explain the context very clearly for them, that you are starting to investigate the impact of ICTs and especially mobile phone technology on the achievement of sustainable development goals. Since this is for audio transmission you will have to be careful in how you phrase your questions. They cannot be too complex. Also, do not ask too many questions. Note: you should read through activity 2 before you start your interviewing as it has a direct bearing on how you might construct your questions. Once you
have done this you may need to edit the results, as you may wish to share your findings with others.

Activity 2: Think about a framework for analysing different views about ICTs and their impacts. How might you illustrate this in a two-dimensional diagram? In Section 3.3 there is a simple matrix from Heeks (2002). Using the results from your interviews try to plot attitudes to ICTs and development on the diagram. Post your results and add a brief audio commentary on your findings.

Activity 3: Read the World Bank article on ICTs and MDGs in the readings volume 1. This convey a lot of useful information about ICTs and their impact in relation to the Millennium Development Goals. It uses a range of means to get the information across: text, charts, diagrams, tables. Can you distil the essence of this reading into a form capable of being used affectively through the mobile phone? Try to use a set of Powerpoint slides.

Please keep a note of the skills that you are acquiring. For example, I suggest that you could break them down into categories:

“Academic”: contextualisation, locating an issue within the bigger picture, graphic representation of data, reading interpretation

“Technical”: interview survey using a mobile phone, audio transmission and editing, use of Powerpoint.

Sectoral relevance

The aim here is to you to focus down once you have a grasp of “the bigger picture”.

Task 2: Focusing down to specific sectors. Once you have taken in the bigger picture you will need to focus down and here section 4.2 is helpful, in getting you to think about ICTs and sectoral relevance. Have a go at this once you have done all the necessary reading up to the end of section 4.2. There is only one activity for this task so you should undertake it.

Activity 4: Choose the sector most relevant for your work/organisation. To what extent does this sector have a “cross-cutting” agenda in the way in which ICTs can be employed effectively? Using the five major cross-cutting challenges that are identified at the conclusion of section 4.2 to explore the effects in your chosen sector. Think about achieving this by means of weblog that you can update frequently. You can set up a diary via your mobile phone onto a blog site that others may access. We could explore this further through the tutorial on-line environment.

You have now moved from the general to the more specific, from considering ICT and sustainable development in a holistic sense to thinking about impacts and effects in a particular sector.

As before, think about the skills you are developing. Here you might come up with:

Academic: distillation/focusing down, application of general issues to more specific areas of concern (from global to local)
Technical: use of weblogs for reflective diary capable of periodic update

Exploring the Concept of Knowledge

This is conceptually quite demanding. The aim here is to you to focus on what differentiates knowledge and its use from information, specifically with respect to your chosen organisation. This next set of tasks and activities will build through the critical theme of knowledge management.

Task 3: Distinguishing knowledge from information in your organisation. It can be quite illuminating to explore how you and your colleagues understand what drives the organisation. Is it information or knowledge or a combination of both? How can we find out more about this with an activity-based approach? Tackle this once you have completed section 3.3 of Unit 2. There are two activities here. The first requires accessing a website; the second is based upon the module text. You should try to complete at least one of these.

Activity 5: If you can access the website www.gdrc.org/kmgmt/ (this is actually in Section 4.1 of Unit 2, but it is helpful to refer to it now) there is a short piece by Hari Srinivas on “Acquiring Information is not Acquiring Knowledge”. This is helpful to our understanding but, although quite brief, this information cannot easily be conveyed on a mobile phone. Produce a summary of the key points of this article using no more than five bullet points and post these in a simple table.

Activity 6: Provide some examples of both Tacit Knowledge and Explicit Knowledge from your chosen organisation, using Van der Velden’s classification in section 3.2 of Unit 2. You may choose to do this in a variety of ways: by interview or reflecting on your own acquisition of knowledge using the audio facility, pictorially by identifying policy documents for example and keeping a picture record. This may be linked to your previous activity and you could think about identifying some policy document(s) that are pertinent to your chosen sector.

This task has taken you into a more conceptual thinking and this can be quite demanding. Do you think that the questions about information and knowledge could come before a consideration of ICTs and Development? This is to get you to think about how authors (in this case Jon Gregson) go about constructing content for units in a module. What do you deal with first and why? If you were developing similar content for educational purposes would you view this any differently? There are no right or wrong answers, but it is a constructive exercise to think about this. You could share your thinking on this with others, although this is not designed here as a separate activity. The important thing is that you should ALWAYS CONNECT.

Think about the skills you have acquired: for example

Academic: thinking conceptually, summarising a piece of text, expressing difficult ideas in simple terms

Technical: multi-media use of the phone, use of digital photos
Knowledge Management

This is a central element in the whole module and should become the pivotal part of your assignment, opening up the consideration of communication in the next set of tasks. It is tempting to develop lots of activities here, but it is important not to overload you at the same time. The key task here is to get you to think about knowledge management within your own organisation, so that “learning within organisations” section (4.2) then becomes quite key.

Task 4: Getting to grips with tasks and responsibilities of the “knowledge manager”. It is possible to design a range of activities here. You may have your own ideas on this and we would welcome these. Again, focus if you can on the work of either your organisation or a development organisation with which you are familiar and with which you are able to have some contact. You should have a go at this only once you have completed section 4.4 of Unit 2. There are three activities associated with this task: of these Activity 9 is the most important, but if you are enjoying this and have the time then do have a go at all of them.

Activity 7: Assume you are a knowledge manager (you may be already, or you may be and not realise it). What are your key tasks? How do you see your role and how do you convey this in clear and meaningful way to your colleagues? How can you use technology to get your message across? Devise a pictorial approach to this: a short series of digital photos, each one related to a different task. You can use as a guide the Knowledge Managers’ Checklist at www.gdrc.org/kmgmt/ (Arie de Geus). How helpful is this checklist? Do you think that the pictorial representation is an effective communication tool? Discuss this with your colleagues and other participants.

Activity 8: In activity 6 you looked at the differences between tacit and explicit knowledge. In section 4.1 you are provided with a diagrammatic representation of the relationship between tacit and explicit knowledge. You are exposed to a lot of diagrams like this one in the Module. How helpful do you find it? Using the knowledge that you acquired in activity 5 can you make sense of this diagram and convey it to others in a way that relates to your own working situation? If not, do not worry. Not everything will work!

Activity 9: We want you to take a considered look at the way your (chosen) organisation manages knowledge in relation to development, so all the material through sections 4.2 to 4.4 in Unit 2 is pertinent here. We suggest if you can that you focus on one development project recently (or currently) being worked on. You should think about the learning cycle within a project – Bond’s model in section 4.2 – and the linked themes of “connecting”, “communities of practice” and “collecting”. You are working towards answering the key question: How does your organisation manage knowledge in relation to development? This opens up the multi-media opportunities for using the mobile phone. What role do ICTs play? This is the most ambitious activity so far and Jon and I may consider looking at this in more detail via the tutorial route on-line, but think about how you might go about this, using the skills developed so far.

This is a good point to pause and to reflect and ask yourself: where have I got to after studying units 1 and 2? Can you identify the connections through activities 1 to 9. Do these
make sense for you in terms of building up a picture of the benefits (and limitations) of using mobile phone technology to tackle the issue of ICTs and their impact on development? This is not a complete picture of course. There are two more important units to come with the next focusing on Communication.

Again, as a concluding activity think about what skills you have been developing in this fourth task.

Academic and technical: interpretation, presentational, linkages between different types of information,

Communications for Development

This is another potentially large topic, ripe for devising a range of activities. The aim here is to get the you to move on almost seamlessly from the issues raised by unit 2 on the management of knowledge to its communication. So it may be that the project approach used in activity 9 can be developed here. The main idea here is to see the activities in a cumulative sense, so that through the previous activity and those that follow the emphasis will be on developing more comprehensive responses, using the range of opportunities afforded by the mobile phone, and building on what has gone before.

Task 5: You should see this as building on the previous activity in particular and also using what you have learned so far on the use and limitations of the mobile phone to work on a more comprehensive task. In fact this task has at least two or three stages. The overall theme is “communication for development and the use of ICTs”. Taking what you have developed out of the previous activity, focus on the project and explore the issues that surround the communication of project aims/policy issues/desired outcomes to the wider community. The first step is to ask: who are the stakeholders? The second is: how to engage those stakeholders? And the next is: how best to communicate whatever the message is to achieve effective implementation? You have some detailed reading on this through sections 3.1 to 3.3 in Unit 3 so be sure to complete this before you engage with this task and the associated activities. You have three activities here: both 10 and 11 are important and linked.

Activity 10: First of all make sure that you are familiar with the issues associated with “a culture of communication” and “the right to communicate” as they apply in your particular chosen situation. Once you have a grasp of this have a look at the stakeholders’ diagram in section 3.2 “The importance of the first mile”. Using this diagram as a starting point apply it to your chosen project and try to achieve the best means of conveying who are the principal stakeholders via the mobile. Is the diagrammatic approach the best? Not all the categories may apply in your case: could the links amongst stakeholders be portrayed better pictorially? Would a series of short video extracts of the key stakeholders speaking about their roles add meaning to the diagram? In undertaking this (and the choice of how to best present this is yours) you should keep to the forefront the idea of “the importance of the first mile of connectivity”. So before you go any further refer to the next activity, to be taken in conjunction with this.
Activity 11: Refer to the reading by Donald Snowden in the reading volume “Eyes See; Eyes Hear”, and note that you can also access the whole report on the web. You should read all of his article at least, but note in particular what he has to say about the use of video as a communications tool and “a new way of learning”. Summarise his key points in a Powerpoint slide (or two) and uses this as a basis for informing your ideas for communicating to your stakeholder audience. Now proceed with the task in activity 10. What more information do you need?

Activity 12: You may wish to access other sources via the web but you should have enough to go on. Your ideas on how to achieve the best results for communication could be shared in an e-digest and it is something to engage your tutor with also.

By this stage you should have developed a quite comprehensive portfolio of the use of the mobile phone for communicating information and knowledge about ICTs for Development. Again we will try to provide additional ideas via the tutorial discussion area.

Review what you have so far. There is one further stage we suggest to complete the picture, but before you go on check what skills you have now noted down. Your list should be growing.

The Use of ICTs in Development

In a sense this last part should be seen as a sort of “wrap up” for the whole series of activities, trying to identify what an end product in the form of a complete TMA might look like. The theme of “the use of ICTs for development” is quite appropriate to this end. The focus here is on sub-sections 2.2 and 2.3 of Unit 4: the diffusion of internet and mobile technology and applications. The key concepts here should be “application” and/or “implementation”, remembering to make the linkages with what has already been achieved, so not losing sight of one of the principal drivers of this whole exercise, that of “making connections”.

Task 6: You should be thinking about the usefulness and applicability of any recommendations coming out of the previous task. What message are you trying to get across? How best can this be implemented using available ICTs (and particularly mobile technology, although it need not be restricted to this). Make sure you complete reading through the whole Unit (I would suggest) before working on the final set of activities. I have suggested two final activities of which 14 is the more important here, and you should have a go at this.

Activity 13: It may be too much to ask but it is worth looking at the means of representing the spread of mobile phone technology, say, in the SADC countries using the Kiviat diagram. This need not be sophisticated and will obviously be limited by what data is available, but the module already provides quite a lot of information about the spread of mobile phone technology in Africa. You may attempt to develop a Kiviat diagram for the SADC region. It will certainly teach them about diagrammatic representation and the techniques and skills required to get effective diagrams. I think the Kiviat approach is quite effective. An outcome would be to look at the benefits and limitations of such approaches. Ask the
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learner to put her/himself in front of an audience. How best can you communicate a range of information about diffusion as quickly and effectively as possible?

Activity 14: Think about the ICT applications information provided, specifically the list of major ICT tools (page 29) and the examples of new generic forms of application (page 30). How does the application of mobile phone technology (MPT) fit into the scheme of things? You need to be thinking about maximising the impact of your message (whatever that is). Have a look at the various websites provided in the table on page 30. How might you advertise the effectiveness of MPT?

6. Presenting your portfolio

This whole exercise is experimental. We have tried to provide a set of activities that builds up to collection of materials designed to tackle the original topic: The role of ICT in achieving sustainable development goals. Within this very broad construct we have been asking you to think about a particular organisation within the development sector, either one in which you are currently working, have worked or with which you are familiar. We have asked you to work from the general to the particular in other words, to build up a picture of the effectiveness of ICT in the development sector, with specific reference to mobile phones.

It is anticipated that individually you may come up with quite different ways of presenting your findings. This is fine. We are not prescribing an exact format. However, it will be beneficial to summarise what you have been doing, how you have gone about the tasks and related activities, and what benefits and limitations you uncovered whilst using your mobile phone. This is where you work diary, as proposed in the first stage, will come to be very useful.

Jon and I will be assessing progress through the on-line learning environment and will be looking a lot more about how best to present findings. We see this as an evolving discussion where your contributions will be central to how we thin it best to progress. So do not worry at this stage that we have not set out a “format” for your TMA. We want to derive this (or a range of formats) with your help. This is after all a learning experience for all of us!

Paul Smith

1 February 2007
ANNEX 2: M-LEARNING PROJECT PHASE TWO

UNIT 5 – 8 OF ICT FOR DEVELOPMENT

INTRODUCTION

Welcome to this second part of the mobile learning project. Jon and I hope that you have managed to work through most, if not all, of the activities that were associated with units 1 to 4 and that you were able to use these to submit the portfolio as suggested for your first TMA. We have started to evaluate our approach and have been gauging some of your responses. My initial view is that we have been quite ambitious and prescriptive, in encouraging you to try out a range of activities using your mobile phone as a learning device. You may have found this both demanding and challenging, but that is part of the benefit of undertaking what is in effect innovative and “ground-breaking” applied research. You are an essential part of this research process and we certainly acknowledge your contributions up till now and thank you sincerely for these. We hope that you are getting a lot out of this experimental project and, importantly, are enjoying doing so.

This leads me into introducing what we would like you to undertake in this second phase, working through units 5 to 8 of the ICT for Development module. We are keen for you to build upon the experience you have gained in working with your mobile phone through the first phase. However, I am going to take you through a series of activities that are somewhat less prescriptive and less tied to the study text. Please listen to and/or read through all these preparatory notes first before progressing. This is important as will become apparent as you go through. For instance, you will find it helpful to have a look at Unit 8 out of sequence - we do not mean studying it in detail, but to gain an idea of what is covered in the four sections of that unit. They are all concerned with aspects of ICT and Poverty Reduction, the subject of the second TMA.

As before, a primary aim is to build towards the preparation and submission of a Tutor-Marked Assignment (TMA02) following unit 8, but how we want you to get there will be somewhat different and the format of the TMA will be significantly different. We want this to be in a more academic, essay style and provide you with some practice for tackling the longer essay-type question in part two of the examination paper.

So, in this process what are the key learning objectives?

- To build upon the practical experience gained so far in using your mobile phone as a learning tool and, in particular, to develop the benefits
- To undertake practical activities using both the audio and visual facilities of the phone, without necessary recourse to the study text
- To maximise the capabilities of immediate capture of information in a work or field situation
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

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• To be prepared to share your findings with your peers in the study group and to use collective experience as far as possible as inputs into your essay work

• To keep a weblog or a diary of your activities, again with a view to sharing your experiences with others, through the tutorial forum and through Google mail

You will note in these learning objectives a strong emphasis on “sharing”. We feel that this is a very important aspect of using mobile phones and you will see how our thinking on this is evolving as we go through the next stages.

TACKLING THE TMA

It is important that you become familiar with the aims and objectives of the second TMA before you embark on any of the activities. The general aims are very similar to those that we provided for the first TMA:

TMA02 General Learning Aims

• To support an interactive/activity based approach that builds towards an assessable entity as a primary outcome

• To investigate the potential for learners working together, sharing ideas, information and knowledge and the extent to which their own job-related environments can contribute to the learning process

• To provide the opportunity for improved interaction between the module tutor and the learner, via the on-line forum, e-digests and google mail

We can then define some specific learning aims for the TMA:

TMA02 Specific Learning Aims

• To examine the theme of ICTs and poverty reduction, a principal them of unit 8

• To undertake a series of audio-visual activities from unit 5 to 8 using the mobile phone in the field

• To demonstrate how knowledge can be developed using a building-block approach to investigate a specific issue or problem

• To explore the potential for sharing knowledge and information about a specific issue as an aid to learning

In terms of the achievement of these aims we are looking for some specific learning outcomes:

TMA02 Learning Outcomes

• To prepare an essay in more traditional academic format
• To base your essay on a focused, limited objective within the subject context of the use of ICTs in helping to achieve the millennium goal of poverty reduction

• To demonstrate the benefits of sharing resources where possible

The idea of preparing a more conventional essay for this second TMA provides a counterbalance with the more innovative style of the first TMA, and also should provide you with valuable practice of structuring an argument when it comes to writing examination answers!

We have tried to devise a title for the TMA that sounds exciting and challenging but this is not so easy. You might like to have a go at this yourself as an exercise. We are not trying to evade our responsibility here, however. This is our proposed title, but it is a little long-winded:

“With reference to a specific example, assess the role that ICTs might play in helping to alleviate poverty in the developing world.” In undertaking this assignment you should try to be as focused as possible. You might wish to think in terms of ‘transforming a livelihood’ – just one livelihood in an area with which you are familiar or have some knowledge, either through your work or through some other association.

As we develop some ideas for tackling this issue by suggesting activities in relation to specific themes within the four units, we hope that a way of approaching this will take shape in your mind. Keep the concept of “transforming livelihoods” firmly at the front of your mind here. I hope you will appreciate that the more you are able to share your ideas and findings with others, as you work through the units towards this goal, the more you will all get out of it. It is rather like taking pieces of a jigsaw and gradually building up a picture.

WORKING THROUGH UNITS 5 TO 8

We have provided some essential background to phase two and now we come to the business of acquiring materials, resources upon which to base your essay. These will come from your studying and understanding of units 5 to 8 in relation to the conceptual framework for the TMA, but we want you to source as much original material as possible by using your mobile phone as a distinctive learning tool separate from the study texts. This can be at your work place, or if you are on a field visit, or even doing your own piece of research if you have the time. However you choose to develop your materials, please share this information with your peers and exchange experiences.

Initial activity: Think about how you might share resources using the mobile phone and post your thoughts in gmail.

As with Phase One of the Project we will be using some key themes from the units to guide your process of building resources, but here it will be less prescriptive and we are only focusing on one theme per unit. This does not mean that you should not draw more widely on the text, but it does offer a way of structuring your thought processes here. We have selected the following themes to guide your approach:
Unit themes

Intellectual Property and the use of ICTs (Section 3 of Unit 5)

Developing ICTs in relation to the millennium development goals (Section 3 of Unit 6)

Stakeholders and the development of sustainable information systems (Sections 2 and 4 from Unit 7)

ICT and Poverty Reduction (Much of Unit 8, especially the case studies)

Activity: Before you start working through the units, with a focus on the TMA, prepare some initial notes on how you think you might tackle the TMA topic, using the four themes above as a guiding framework. You may wish to record your ideas on the mobile phone, although this is not essential at this stage. However, you may wish to log your thinking as you progress through the assignment, and this is a good place to begin that process.

UNIT 5: INTELLECTUAL PROPERTY AND THE USE OF ICTS

Unit 5 deals with the important theme of information, how we use it and what restrictions may be imposed on its use. The concept of “intellectual property” is one that underpins the whole world of publishing and licensing of use. You will be familiar with it already in the context of your studies and what the DLP can and cannot make available for study access, particularly in an electronic environment.

We are asking you to consider how this concept and its application might be relevant in undertaking the assignment. For example, consider the idea of sharing information: how do you feel about that? What are the benefits and the drawbacks of collaborating with others in a project?

Activity: Make a list of “benefits” and “drawbacks”, using the theme of intellectual property as a guide, prepare a short audio version for transmission through your mobile phone and share this with one or more other participants in this project.

Once you have completed this task and feel that you have got to grips with the key elements of the unit, in particular section 3, return to the theme of your assignment. Hopefully, you have some ideas of how you are going to approach this and have a case study in mind. Remember, it can be very specific. Think about the implications of the open source movement as an alternative strategy for handling intellectual property issues in the developing world.

We suggested that you take a case study concerned with transforming livelihoods, or a livelihood, in which ICT has a part to play, and in particular mobile phones. There is an example at the end of Unit 8 that is quite relevant here – the Bangladesh case study – and you may wish to look at this now, although it is referred to later. In fact, this would be a good idea: this may give you some insights into what is feasible.
Feasibility is an important issue here. If you have chosen to undertake a study in a village, for example, how feasible will it be to get the information you are seeking? How will you get it? Will it mean talking to people in their homes? Will it be intrusive? Will you be wanting to get an audio-visual record and what are the intellectual property issues of doing this? There may also be ethical questions to address. These are things that may need to be addressed later in the course when you undertake your Research Report (if you are taking the MSc). Here we are asking you, in a very limited way, to think about these things and reflect on them for your TMA.

Activity: Investigate possible sources for your study – these may be primary (acquiring some basic data yourself) or secondary (accessing information in your workplace, through the module or the internet). Record the information using your mobile phone: text, audio or visual and consider sharing your experience. Please note: your data set cannot be very large. This is an exploratory exercise and we are not expecting you to spend too long on this. It will be very interesting to see what you can come up with, however.

UNIT 6: DEVELOPING ICTS IN RELATION TO THE MILLENNIUM DEVELOPMENT GOALS

Unit 6 very much sets the context for your assignment. We are suggesting here that section 3 on ICT policy and the millennium development goals (MDGs) can provide a structure, a framework into which you can set your case example. Once again, ensure that you are familiar with all the contents of the unit and how the development of ICT policy in relation to the MDGs is relevant to the assignment you are undertaking.

One way of approaching this would be to link this with the suggested activity in unit 6 that asks you to review ICT policies that have been developed at a national or a regional level. There are a number of sources proposed there and you may be able to access information at your workplace. How you get the information is up to you. Ideally, you will be looking to get some insight into ICT policies for your country or region and be able to understand how these connect to the different millennium goals.

Although there are eight goals your principal concern is with the first: “Eradicate extreme poverty and hunger”, arguably the primary goal of the eight. You may wish to focus down further to one of the two targets for this goal: “Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day”.

On the face of it this may sound a lot to do. However, as with the previous unit look to simplify the process as far as possible. Get a feel for policy issues and then focus on the strand with which you are principally concerned: ICT policy and poverty reduction. Of course, there is much involved in the development of policies: in unit 6 section 2.1 Jon asks you to consider 8 questions on trends that inform ICT policy development. Your undertaking is to get to the essence of the policy issues as they concern your assignment.
Activity: Have a go at this if you can: assuming you now have a reasonable working knowledge of at least some elements of ICT policy and its connection to the achievement of the MDGs in your area, conduct a short mobile interview with a work colleague, someone working in a development NGO, someone who knows what you are talking about at least. The aim is to share briefly some ideas about “how ICTs can contribute to the achievement of the MDGs (and specifically poverty reduction) and what sort of policy approaches might promote this contribution”. As you may note, this is the learning aim of section 3 in this unit.

This can be in the form of a brief discussion as Jon and myself have been undertaking. The aim is to get information as relevant content as succinctly as possible, because the means of communication will be your phone. This may be an audio record with some visual content. The outcome will be something you can share with others.

UNIT 7: STAKEHOLDERS AND THE DEVELOPMENT OF SUSTAINABLE INFORMATION SYSTEMS

We return here to the theme first raised in unit 3. You may wish to revisit this to refresh your understanding of stakeholder relationships. In unit 7 a principal theme is the identification of the major stakeholders who are relevant to the development of the use of ICTs, and an assessment of the process for developing sustainable information systems.

Again this is quite a broad-ranging theme, and once again your task is to keep this within manageable bounds in the context of your assignment. It is quite possible that in addressing the previous activity in unit 6 you have already started to tackle the question of stakeholder involvement. In defining your case example and then assessing ICT policy developments, particularly concerning poverty reduction in your area’ you should have already identified potential stakeholders.

Using the list in section 2.1 of unit 7 as a guide define the major stakeholders involved in your study and try to map out their involvement, or potential involvement, and how far it might be possible to build partnerships and networks that will help to facilitate the development of a sustainable information system. This is asking a lot, probably, and it would be advisable to concentrate on perhaps just two or three principal stakeholders and look at the links between them. How are these stakeholders important in the context of your study, and in relation to the development of ICT policies that impact upon it?

Activity: If you are able to, contact at least one stakeholder (an individual representing a stakeholding) and conduct a mobile interview, focusing on their role and the development of potential ICT networks. Try to investigate their motivations and interests in promoting the use of ICTs, particularly in relation to your case study. As before, your information will need to be in a very succinct form, with the potential for sharing information with others.

It may be that direct contact will not be possible but you may be able to use email or telephone contact as an alternative here.
UNIT 8: ICT AND POVERTY REDUCTION

Almost all of this Unit is relevant here and you will recall I suggested earlier that you take a good look at the four sections “out of sequence”. This is because they provide a context for the consideration of ICT and poverty, both in terms of a rural development focus, designing ICT projects and a series of case studies.

Activity: Have a look now at the unit 8 structure if you have not already done so. Do this before reading on and make some brief notes. These could be mobile text notes that you can share.

The structure of this unit should provide a very good guide as to how you might frame your own assignment. It is divided into four sections:

In the first you are given a number of learning outcomes. I would suggest the following are particularly pertinent:

- To discuss various concepts that address the issue of poverty, like access and empowerment;
- To explain the importance of an ICT policy for addressing poverty issues;
- To provide an example of an ICT policy looking at its strengths and weaknesses.

So here you are beginning to establish the aims and potential outcomes of an assignment. In the second section the rural development context is assessed:

- To provide an overview of the main characteristics of the rural context.

The third section is concerned with the design of ICT projects that attempt to address poverty issues. Here I would suggest that you concentrate especially on these learning outcomes:

- To look at the advantages and disadvantages of setting up stand alone ICT projects;
- To look at the advantages and disadvantages of designing integrated ICT projects that cross cut into mainstream development projects.

Finally, the fourth section provides several actual case studies of ICT projects that have been developed specifically to tackle the issue of poverty reduction. Here the first is particularly pertinent because it deals with access to mobile phones for women living in villages in Bangladesh.

Access to village pay phones in Bangladesh - a cellular phone network having women as the primary users.

This is associated with the famous Grameen Bank economic programme in Bangladesh. Professor Dr Mohammad Yunus won the Nobel Peace Prize last year for his groundbreaking work on tackling poverty at the grassroots in the developing world using microcredit.
schemes. I suggested you look at this case study in my opening words to you because it is very much aligned to the theme of “transforming livelihoods” at a very local level.

Activity: establish a working structure for your TMA, based upon the preceding activities, and use various channels of communication to discuss this: your phone, the on-line learning environment through the C104 discussion forum, the dedicated Google mail log. Please try to be as open as possible in sharing your ideas and do not worry if they do not seem fully formed to you. This is how we all work, often with what we might call “half-baked” ideas and thoughts. This can help you to build up a picture of what is achievable and what is not, and is a good way of building confidence in your studying and writing.

SUMMARY

The aim here has been to give you a feel for how to build a series of linked ideas into a structure that can be used to produce a written assignment, an essay that passes the test of being “academic”. Why is this important? Well, this is part of an MSc where academic accreditation is at the heart of the assessment and there are sets of criteria that have been carefully thought out that measure performance. These are standards that can be applied across the whole higher education sector, benchmarks that give full credibility for the attainment of a higher degree.

In this project we have sought to give you an opportunity to learn in a variety of ways. The first TMA has been quite innovative and has relied very much on personal approaches. This second TMA also has an opportunity for individual inputs, in say the choice of a case study, but the structure is more formal, more prescribed.

We have attempted to demonstrate how you can construct a good assignment using building blocks from the course materials, but emphasising the importance of careful selection. How you select depends upon your starting point. You will see that I have been taking you through the materials on a unit by unit basis, but that you need to get to unit 8 to see the whole picture emerging. So when you start to plan it is a good idea to see what is coming and this is why at the beginning I said you should take an early look at this unit – not necessarily to study it in depth, because it is unit 8 for a good reason, it would not have worked as unit 5 – to help you with your planning.

I hope you can see how it is possible to work through quite detailed and complex material and sift for what you really need for your assignment. You do not need too much. There is much skill attached to this process of selection, précis and construction: construction of a lucid piece of work.

So what are the criteria by which your TMA should be judged, assessed?

It should have a word limit – we propose a maximum of 2000 words here.

It should be presented in an academic format – you have some guidelines already as to what this means but it is helpful to reiterate the essence of these again.
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It should contain a brief abstract at the beginning informing the reader what the essay is about (300 words maximum – these do not count in the 2000 allowed)

It should have a succinct introduction that sets out the aims and objectives of the essay, the approach you have adopted and a brief coverage of the expected outcomes.

It should explain the key concepts, like poverty, ICT policy.

It should establish the context: do you remember from the first assignment, working from the general to the specific? We have asked you to select a very specific case study and apply some tests to it through the activities.

It should develop the discussion, then, moving from the big picture “ICT Policies and Poverty Reduction” towards the specific case study, one small example.

It should reach some conclusions about this case study in the overall context, so moving back to the bigger picture. With one small study the amount of generalisation you can undertake will be limited, but this does not matter. It is the process you have gone through that matters.

It should include references. This can include instances of where you have used quoted remarks from individuals if you have bee able to get these.

This all assumes that you have been able to get hold of what we call “primary” data – materials that you have collected yourself. But you may have difficulty in doing this. Please do not worry about this. You can prepare an essay that relies wholly on “secondary” sources. You could take the Grameen case study and go through exactly the same process, using the materials in the module, units 5 to 8 and the associated readings. We have designed this in such a way that you should try to maximise the use of your phone as a learning tool in a variety of ways. So take the opportunity to discuss ideas with colleagues and to share these with your peers, even though you might not be able to follow the letter of the activities.

Finally, please share your thinking with us. Jon and I will be only to ready to offer advice through the OLE and Gmail. So please use these channels that are open to you. Good luck!

Paul Smith

June 2007
ANNEX 3: C104 MOBILE LEARNING PROJECT

FINAL AV SESSION – UNITS 9 AND 10

Paul to introduce:

The aim of this final audio-visual session is to provide some guided insight into units 9 and 10 of C104. These do not compromise a formal part of the m-learning project as such, but Jon and I think it is important to provide some sort of summing up session by focusing on the final two units in much the same way as we have been doing in parts 1 and 2 of the project. By doing this we want to encourage you to reflect on what you have achieved by participating in the project, and to undertake a very straightforward evaluation exercise.

Unit 9 looks at the use and potential of ICTs in addressing environmental issues. This is very much aligned to the generic discussions we have been having about sustainable development and ICTs, but is also a very large theme in its own right.

The unit asks you to consider the application of ICTs to a range of environmental problems: this could be anything from local flooding problems (such as we have been experiencing in Britain this summer), to coping with complex emergencies (like the tsunami of 2004), to huge global scale concerns such as global warming.

(1) If I could turn to Jon now and ask you first Jon about your discussion of Geographical Information and Global Positioning Systems in the unit. I know I find these very challenging and having just purchased a satellite navigation device for travelling by car I can appreciate the practical benefits, even though I cannot understand the technology that produces it and I also have to admit the car travel leaves a significant carbon footprint in terms of environmental impact. Does it matter that we do not understand the technology? What suggestions might you be able to offer for our audience for making use of such systems in their local situations in relation to environmental concerns?

JON TO ANSWER

(2) I think that one of the major applications of ICTs is in disaster response, but again the sheer scale of disasters like the tsunami of 2004 is just too vast for us as individuals to think about what we can do. Again, working from the local level do you have any suggestions to give to us about fairly simple practical applications, and I am thinking here particularly about mobile phone technology?

JON TO ANSWER

(3) Lastly, and in keeping with the theme of the previous two questions, what encouragement might you be able to offer to the participants to find out about local initiatives where ICTs have been or could be used in relation to environmental problems about which they are aware?
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JON TO ANSWER

Unit 10, significantly, explores the role of education within development, with reference to different pedagogic approaches and, in particular, to the role of ICTs within teaching and learning.

This is a most appropriate concluding unit I have to say, given the context in which we have been using these audio-visual sequences within this m-learning project. This certainly provides us with an excellent opportunity to reflect on the project as a whole, in the context of the C104 module, and to remind you of the importance of evaluating what you have been doing, looking at the outcomes in terms of the original aims and objectives as we spelled them out in our introductory sessions for parts 1 and 2 of the project.

(1) Jon, you are concerned to make learners aware of the type of teaching and learning approaches that we have favoured throughout this project. How far would you assess that the project reflects a constructivist rather than a traditional approach to education and how would you differentiate between them? Why is a constructivist approach preferred?

JON TO ANSWER

(2) Could you suggest ways in which the participants in the project might reflect on what they have been doing, say through some fairly straightforward process of evaluation they can undertake that is not too time consuming?

JON TO ANSWER

(3) Finally, can I ask you personally to reflect on this whole exercise? For me it has been a very challenging, and I have to say enjoyable, process and I have really learned a lot in trying to devise activities that are at the same time interesting, but also meaningful and doable. This has not always been easy and I fear that we may have been expecting rather too much from our audience. I have been thinking in a constructivist vein wherein as much as possible is learner-focused and learner-driven. In doing this I felt the most appropriate focus was to use the TMAs as goals or outcomes. How would you reflect on this process now.

JON TO ANSWER

Some sort of final wrap up informal discussion between us?

Paul Smith

September 2007
ANNEX 4: C104 MOBILE LEARNING PROJECT – STUDENT EVALUATION FORM

We should be most grateful if you would kindly complete the following feedback form. It should not take you too long and your feedback will be very important in helping us to improve the delivery of mobile learning.

Name of Student:

Date:

We divided the C104 Project into two phases, building up in each case to the preparation of a Tutor Marked Assignment (TMA). We also completed the project with an audio-visual presentation covering units 9 and 10.

We would like your feedback on both your overall impression of this approach and also of the individual elements and activities that have contributed to it. Please fill in as many of the boxes as you can, but do not worry if you were not able to undertake every activity. We are interested to hear what you did manage to achieve and what benefits or otherwise these provided to your understanding and enjoyment of the module, as taken through the learning mode of mobile phone technology.

Phase 1 (Units 1 – 4)

**Getting started**

We suggested five activities to get you started with using your mobile phone, before tackling the first unit, and a further activity to get you thinking about the first TMA. Please indicate if you found the activities very/quite/not helpful in each case:

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<th>Activity</th>
<th>Did you do it?</th>
<th>Very helpful</th>
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<td>Getting started – 5 activities</td>
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<td>Tackling the TMA</td>
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Any overall comments on the getting started activities?
Working through units 1 to 4

We proposed selecting a number of themes to build up a picture through the units under the heading: The role of ICT in achieving Sustainable Development goals. For each theme we devised a number of activities, linked to specific tasks we suggested to help you develop your ideas. Again please indicate how helpful you found these, if you were able to have a go at them.

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Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

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Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA in the form of a portfolio: for example, did you like this different type of TMA? Did you find the overall building “block approach” helpful? Were there too many activities?

Phase 2 (Units 5 – 8)

Working through units 5 to 8

We focused on a more simplified form of theme setting here with the approach once again directed towards preparing a second TMA, but here in a conventional essay format. We also reduced the number of activities, mostly to one per unit theme. Please indicate how helpful you found them if you managed to do them.
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<tr>
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</tr>
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<tr>
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<tr>
<td>Activity 2</td>
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</tr>
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</table>

Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA, this time in the form of a conventional essay: for example, contrast this approach with Phase 1. Did you prefer working towards a more conventional essay?
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning  

Annex B

General Comments Overall

We used audio-visual support throughout. Did you find this helpful? In what ways?

Finally, we would like your thoughts about the general strengths and weaknesses of using the mobile phone as a learning device. For example: think about studying whilst away or on the move, making use of short intervals of time, help with revision, understanding key concepts and applying these in the context of a TMA.

<table>
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<td></td>
</tr>
</tbody>
</table>

September 2007
C104 EVALUATION FORMS (4)

C104 MOBILE LEARNING PROJECT – STUDENT EVALUATION FORM

We should be most grateful if you would kindly complete the following feedback form. It should not take you too long and your feedback will be very important in helping us to improve the delivery of mobile learning.

Name of Student: Andre Martins Silveira

Date: Dec/1st /2007

We divided the C104 Project into two phases, building up in each case to the preparation of a Tutor Marked Assignment (TMA). We also completed the project with an audio-visual presentation covering units 9 and 10.

We would like your feedback on both your overall impression of this approach and also of the individual elements and activities that have contributed to it. Please fill in as many of the boxes as you can, but do not worry if you were not able to undertake every activity. We are interested to hear what you did manage to achieve and what benefits or otherwise these provided to your understanding and enjoyment of the module, as taken through the learning mode of mobile phone technology.

Phase 1 (Units 1 – 4)

Getting started

We suggested five activities to get you started with using your mobile phone, before tackling the first unit, and a further activity to get you thinking about the first TMA. Please indicate if you found the activities very/quite/not helpful in each case:

<table>
<thead>
<tr>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>Getting started – 5 activities</td>
<td>Yes</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tackling the TMA</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Any overall comments on the getting started activities?

For me was very easy to get familiar with the phone and start using all the resources.

Instructions were very clear and simple.
One suggestion would be to send to student’s MMS/SMS or any on-line message during the course in order to create the sensation of on-line and mobility.

And also in cases where the costs of connection are not so high, stimulate communication (e-mail, phone, MMS, SMS, etc) using the phone.

**Working through units 1 to 4**

We proposed selecting a number of themes to build up a picture through the units under the heading: The role of ICT in achieving Sustainable Development goals. For each theme we devised a number of activities, linked to specific tasks we suggested to help you develop your ideas. Again please indicate how helpful you found these, if you were able to have a go at them.

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<td>ICT &amp; Sus dev</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Activity 1</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 2</td>
<td>Yes</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Activity 3</td>
<td>Yes</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sectors</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Activity 4</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Activity 5</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 6</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowl’ge Mgt</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 7</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 8</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 9</td>
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<td></td>
<td></td>
<td></td>
</tr>
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Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

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<td>Activity 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 11</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 12</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of ICTs</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 13</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Activity 14</td>
<td>No</td>
<td></td>
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</tbody>
</table>

Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA in the form of a portfolio: for example, did you like this different type of TMA? Did you find the overall building “block approach” helpful? Were there too many activities?

Phase 2 (Units 5 – 8)

Working through units 5 to 8

We focused on a more simplified form of theme setting here with the approach once again directed towards preparing a second TMA, but here in a conventional essay format. We also reduced the number of activities, mostly to one per unit theme. Please indicate how helpful you found them if you managed to do them.

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<td>No</td>
<td></td>
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<tr>
<td>Poverty Activity  1</td>
<td>No</td>
<td></td>
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<tr>
<td>Activity 2</td>
<td>No</td>
<td></td>
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Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA, this time in the form of a conventional essay: for example, contrast this approach with Phase 1. Did you prefer working towards a more conventional essay?

General Comments Overall

We used audio-visual support throughout. Did you find this helpful? In what ways?

Yes, this was really very helpful and good idea, mainly in a distance learning course.

This could be more exploited and used.

In general I believe it’s a very powerful tool and must be explored. Mobiles phones are getting very sophisticated and integrated with many functions. The possibilities are enormous and I believe you are in the right path. I believe you will be able to find very creative and efficient solutions that will be able to be used in all modules.

One thing that I believe that could be improved is the communication regarding the activities. For me it was not very clear what activities should be done and after I sent an e-mail about some doubts, I didn’t get the feedback. It was a little bit frustrating. It was also very difficult for me, and this is my fault, to spend time to clear my doubts and explore the material in deep details. This year my 2nd child was born and it was a big challenge to balance my job, modules study, TMA’s and family.

My recommendation would be to make activities more direct and clear, mainly for people with time constrain like me.

The overall experience was very good and as I mentioned the possibilities are really fantastic for the future.
Finally, we would like your thoughts about the general strengths and weaknesses of using the mobile phone as a learning device. For example: think about studying whilst away or on the move, making use of short intervals of time, help with revision, understanding key concepts and applying these in the context of a TMA.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio visual and multi-media tools</td>
<td>Service is still expensive in many countries like mine (Brazil)</td>
</tr>
<tr>
<td>Mobility: you can carry with you everywhere you go</td>
<td>Difficult to type text</td>
</tr>
<tr>
<td>Possibility to be integrated with the internet with broad-band (3G)</td>
<td></td>
</tr>
<tr>
<td>Cheap technology (mobile phone)</td>
<td></td>
</tr>
</tbody>
</table>
C104 MOBILE LEARNING PROJECT – STUDENT EVALUATION FORM

We should be most grateful if you would kindly complete the following feedback form. It should not take you too long and your feedback will be very important in helping us to improve the delivery of mobile learning.

Name of Student: Priya Maharaj

Date: 19th October, 2007

We divided the C104 Project into two phases, building up in each case to the preparation of a Tutor Marked Assignment (TMA). We also completed the project with an audio-visual presentation covering units 9 and 10.

We would like your feedback on both your overall impression of this approach and also of the individual elements and activities that have contributed to it. Please fill in as many of the boxes as you can, but do not worry if you were not able to undertake every activity. We are interested to hear what you did manage to achieve and what benefits or otherwise these provided to your understanding and enjoyment of the module, as taken through the learning mode of mobile phone technology.

Phase 1 (Units 1 – 4)

Getting started

We suggested five activities to get you started with using your mobile phone, before tackling the first unit, and a further activity to get you thinking about the first TMA. Please indicate if you found the activities very/quite/not helpful in each case:

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<td>Tackling the TMA</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
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Any overall comments on the getting started activities?

The initial activities are very useful for laying the foundations for using the mobile phone to complete the later tasks. Things like creating the folders, transferring files from the phone to the computer turned out to be really simple but a bit overwhelming if you have never done these things on a phone.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

_Annex B_

**Working through units 1 to 4**

We proposed selecting a number of themes to build up a picture through the units under the heading: The role of ICT in achieving Sustainable Development goals. For each theme we devised a number of activities, linked to specific tasks we suggested to help you develop your ideas. Again please indicate how helpful you found these, if you were able to have a go at them.

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<td>Yes</td>
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<td>Yes</td>
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<td>Sectors</td>
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Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

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<table>
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<th>Activity 12</th>
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Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA in the form of a portfolio: for example, did you like this different type of TMA? Did you find the overall building “block approach” helpful? Were there too many activities?

I was unable to do most of the activities, mainly because of time constraints. I suspect that all of the activities would have been useful in engaging with the course material. I prefer conventional essays or projects, I think, because that’s what I’ve been accustomed to. My main problem was that I was behind in the course module, very far off the course calendar, so that I was constantly trying to catch up – this made sticking to the Activities almost impossible for me.

Phase 2 (Units 5 – 8)

Working through units 5 to 8

We focused on a more simplified form of theme setting here with the approach once again directed towards preparing a second TMA, but here in a conventional essay format. We also reduced the number of activities, mostly to one per unit theme. Please indicate how helpful you found them if you managed to do them.

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<td>ICT &amp; MDGs Activity</td>
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<table>
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<tr>
<th>ICT systems</th>
<th>Activity 1</th>
<th>Activity 2</th>
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</table>

Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA, this time in the form of a conventional essay: for example, contrast this approach with Phase 1. Did you prefer working towards a more conventional essay?

I preferred working towards a more conventional essay but again because of time constraints could not put in the level of effort that would have made the exercise very helpful. The conventional essay also helps in the formation of ideas, flow etc. which is useful for the exam.

**General Comments Overall**

We used audio-visual support throughout. Did you find this helpful? In what ways?

The A-V support was a refreshing break from the quite dense module and readings. It’s quite difficult to go through all of the material so to have a “face-to-face” component, as in a real classroom, was a welcome break.

Finally, we would like your thoughts about the general strengths and weaknesses of using the mobile phone as a learning device. For example: think about studying whilst away or on the move, making use of short intervals of time, help with revision, understanding key concepts and applying these in the context of a TMA.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenient – its difficult to carry the module with you</td>
<td>Difficult to become accustomed to using a phone a learning tool</td>
</tr>
<tr>
<td>Makes effective use of time since learning or revising can take place anytime or anywhere</td>
<td>The TMAs would have been very helpful for those who managed to stay on track with the course calendar but not as useful for those who did not</td>
</tr>
<tr>
<td>The AV support is particularly welcome, as this is a distance learning programme which tends to make the student feel disconnected.</td>
<td></td>
</tr>
</tbody>
</table>
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex B

C104 MOBILE LEARNING PROJECT – STUDENT EVALUATION FORM

We should be most grateful if you would kindly complete the following feedback form. It should not take you too long and your feedback will be very important in helping us to improve the delivery of mobile learning.

Name of Student: Shahrzad Amoli

Date: 30 November 2007

We divided the C104 Project into two phases, building up in each case to the preparation of a Tutor Marked Assignment (TMA). We also completed the project with an audio-visual presentation covering units 9 and 10.

We would like your feedback on both your overall impression of this approach and also of the individual elements and activities that have contributed to it. Please fill in as many of the boxes as you can, but do not worry if you were not able to undertake every activity. We are interested to hear what you did manage to achieve and what benefits or otherwise these provided to your understanding and enjoyment of the module, as taken through the learning mode of mobile phone technology.

Phase 1 (Units 1 – 4)

Getting started

We suggested five activities to get you started with using your mobile phone, before tackling the first unit, and a further activity to get you thinking about the first TMA. Please indicate if you found the activities very/quite/not helpful in each case:

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<td>To a certain extent</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tackling the TMA</td>
<td>To a certain extent</td>
<td></td>
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</tr>
</tbody>
</table>

Any overall comments on the getting started activities?

I think the Getting Started activities were a little user unfriendly. It took me a while to realise exactly what was required because I felt somewhat confused about the activities. At first I did not realise that I would have had to download the text recorded on the mobile handset into the computer. The audio recordings required were not possible with the handset and I could not think of another way of recording these. Also transmission of the activities to the tutors was a problem. In the end I opted to record some of the activities on
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

a DVD and posted it when I was in London. Perhaps a shared blog or website would make it easier to communicate and share the activities.

**Working through units 1 to 4**

We proposed selecting a number of themes to build up a picture through the units under the heading: The role of ICT in achieving Sustainable Development goals. For each theme we devised a number of activities, linked to specific tasks we suggested to help you develop your ideas. Again please indicate how helpful you found these, if you were able to have a go at them.

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</tr>
<tr>
<td>Knowl’ge Mgt</td>
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<tr>
<td>Activity 7</td>
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<tr>
<td>Activity 8</td>
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<td>Activity 9</td>
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<td>Comm for Devt</td>
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<td>Activity 10</td>
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<td>Activity 11</td>
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</tr>
</tbody>
</table>
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex B

<table>
<thead>
<tr>
<th>Activity</th>
<th>Did you do it?</th>
<th>Very helpful</th>
<th>Quite helpful</th>
<th>Not helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial activity on TMA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int Property Activity 1</td>
<td></td>
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<tr>
<td>Activity 2</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT &amp; MDGs Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA in the form of a portfolio: for example, did you like this different type of TMA? Did you find the overall building “block approach” helpful? Were there too many activities?

Phase 2 (Units 5 – 8)

Working through units 5 to 8

We focused on a more simplified form of theme setting here with the approach once again directed towards preparing a second TMA, but here in a conventional essay format. We also reduced the number of activities, mostly to one per unit theme. Please indicate how helpful you found them if you managed to do them.

*Unfortunately I was not able to fully deliver on these due to my preoccupations with moving to the UK etc. But particular to the mobile project, I think that more interaction between the participants of the projects (the students and the tutors) would yield more interesting results that could be shared in the course of the activities. This would also help increase the confidence of the students.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex B

| ICT systems | Activity | | | |
|-------------|----------|-------------|-------------|

Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA, this time in the form of a conventional essay: for example, contrast this approach with Phase 1. Did you prefer working towards a more conventional essay?

I personally would have preferred a more conventional essay, unless the mobile project would have touched on a more specific task rather than the generalised topic of the role of mobile handsets in ICT4D. For example, if each student would take on a task determined by the tutor. Also if more sharing among the students would be encouraged and perhaps joint activities, where each student would fill in their part from the perspective of their environments and would contribute to an eventual single outcome.

General Comments Overall

We used audio-visual support throughout. Did you find this helpful? In what ways?

I only managed to find it particularly useful when I discovered that the material stored in the handset was downloadable into the computer. These included many files I didn’t know existed in the mobile until I saw them as a file in the computer (eg. The text format of Getting Started etc.) I think the audio-visual support was very useful but it would have been better if complementary to the course text, several practical examples were deliberated on more. I still do not know how to access all the files stored in the mobile, other than the video/audio files. Is it possible to store long texts in the handset? If this is possible, it would be extremely useful for field work.

Finally, we would like your thoughts about the general strengths and weaknesses of using the mobile phone as a learning device. For example: think about studying whilst away or on the move, making use of short intervals of time, help with revision, understanding key concepts and applying these in the context of a TMA.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The mobile nature of studying is very useful. Having many tools integrated into a small hand-held device is very useful and handy/convenient. The mobile handset could</td>
<td>The handset does not allow playback of the videos other than from the beginning. For example, while listening to a clip of about 20 minutes, a phone call in between will</td>
</tr>
</tbody>
</table>

Poverty

Activity 1

Activity 2
Dear Jon and Paul (in response to questions about use of the mobile phone)

Again I have to unfortunately begin my message with sincere apologies. It has truly been testing times for me as I am settling into a new life with my daughter here in London. I was also tied up with trying to finalise a UNDP-sponsored course with ACCA which unfortunately resulted in problems out of my control. After having worked immensely on a difficult project (my last prior to graduating), I have been informed that the institution in question “forgot” to give in my name to ACCA and I was therefore not included and my efforts on the project have been wasted. It was one of the reasons why I had postponed my Sustainable Development studies. In any case, I am sending you the evaluation form in the next email. In this email I am including responses to Jon’s earlier questions specific to my share in the emobile learning project. I do hope that it is still of use however minimal and once again my apologies. Jon’s questions are in blue and my answers follow. I do hope I will be given the opportunity to contribute in whatever way I can in next year’s projects. I will also be sending you several communication made on UNDP’s ICT4D network in the hope that you will find it interesting reading and an insight into UNDP’s efforts.

I wonder whether you felt getting their insights helped you with understanding of the module. Did they throw up any new issues for you, or suggest practical considerations that were at odds with the course study materials in any way? The main thing I realised from the insights given by Ali and Victoria is that although Iran is very advanced in ICT, making use of it for sustainable development is another issue and easier said than done. What I sensed is that in theory ICT4D, it is all very well and commendable, but in a country such as Iran, particularly at this point in time, the use of ICT brings about a sense of paranoia in the government, I think mainly in terms of contact with international organisations. The best chance would be at grass roots level and civil society should be given the chance to make use of it as much as possible. The problem is that civil society at this point in time is under immense pressure and are working under exceptional conditions. However, I will forward to you a link sent to me by the Management and Planning Organisation (the implementing partner of our small ICT project) which gives you access to a network of websites set up by rural inte
I notice that you used video and not audio for all the interviews – was there any particular reason for this? Was it a preference or did technical considerations influence this choice?

As this is a distance learning project, personal contact is rare. I personally found viewing the recordings of Jon and Paul on the mobile I received very useful and interesting. In the same way, I thought that using video for my interviews would give a better sense and connection with myself and the interviewees. I used the mobile handset to record the interviews. The quality of this facility is quite strong. In contrast, recording audio interviews with the mobile phone would only give me 60 seconds and was not practical at all.

I have a few practical questions that I would appreciate your comments on:

Did you do all the videos using the N70? Yes, all of them.

How did you do the filming of yourself? The picture and sound are very clear and it is very steady – were you holding the phone or was someone else? I did several (in fact many) takes when doing the interview of myself. The first few turned out to have a very bad sound (terribly inaudible). I was holding the phone myself (quite tricky!) and in the one I sent, I split the recording into two. In short, after a few mistakes, I got the hang of it.

Do you think the interviewees would be willing for these videos to be shared with other students on the module, or put on a course module blog? Did you have to brief them at all on what you would do with the videos and how they might be used? I talked in detail with both Ali and Victoria prior to the interviews. They both seemed very enthusiastic to have these shared after I had thoroughly explained to them the whole purpose, i.e. the project, the possibility of it being shared on a wider scale etc.

If we could get to the situation where we can share resources like this via our learning environment (or CD) do you think it would make studying modules more interesting? Even the several videos (e.g. the IFAD projects) you had included in the mobile handsets were extremely interesting. I myself find that visual interaction, particularly when you are studying a distance learning programme on your own proves to be extremely useful and powerful. Incidentally, I screened the IFAD clip on marketing in rural areas and use of mobiles as a “trailer” in one of my presentations on an entirely different topic, as a change of scenery for my audience and to provide them with additional and interesting information while I had their attention. It was particularly of interest to my colleagues in the environment section and those working with grass roots projects where civil society is strongly involved.

Related to that question, is how we achieve the best quality when using the phone to video. Overall I was surprised and impressed at how clear they were, and the only minor problem was that in one case the interviewees voice was quieter and more distant. It would have probably been better if I had asked a third person to assist me in taking the video. As I was both interviewing and taking the video with the phone, I think I lost some quality in filming during the interview with Victoria. I could have taken a high quality video with my own video camera but the issue was trying out the N70 facilities and to test how it could be used in remote areas, in the field and on the move. In that sense I think it delivers very well. It’s just a matter of trial and error to get the distances right under different conditions. I am interested to know how you recorded the clips you had included on the phone. Were they taken with the N70?
Did you think the interviewees were comfortable being videoed or were they nervous about it? Were they looking at phone? Did you hold it throughout the interview? I have worked with both the interviewees for some time and I knew that they have been "spokesperson" for UNDP on various occasions. They have had the experience of being interviewed for various media (newspapers, radio and tv). Victoria prepared a visual report for her Bam earthquake projects which was at one time aired on national television. In that film, she spoke to the camera on several occasions. Both Ali and Victoria were looking at the phone. Of course I should add that since I was holding the phone while interviewing, they were also in effect looking at me.

Finally, I wonder whether use of the N70 phone in this project has itself given you new ideas on how an ICT like this might contribute to development and in particular to enhancing learning? Just before I left Iran, I had a talk with another colleague who runs the GEF Small Grants Programme (SGP) in UNDP Iran. She told me that several of the NGOs she works with are conducting a series of workshops and projects on the use of ICT and particularly mobile technology in marketing for rural women. There are currently several ongoing projects where traditional handicraft is being promoted and encouraged. Rural women are being brought together to use ICT, eg use of websites to market their products on a wider scale. Unfortunately they are facing problems linking to the international arena mainly due to limitations in online payments. I know there are several international websites where indigenous handicraft are promoted. However, Iran will face difficulties for various reasons. I will try to link up with my colleague and ask her for an update on how things are proceeding in these projects and how far they have been able to make use of ICT.

Hope the above is useful. As I mentioned I will be sending the evaluation form in my next email. Looking forward to hearing from you and wishing you both all the best.

Best wishes, Shahrzad

September 2007
C104 MOBILE LEARNING PROJECT – STUDENT EVALUATION FORM

We should be most grateful if you would kindly complete the following feedback form. It should not take you too long and your feedback will be very important in helping us to improve the delivery of mobile learning.

Name of Student: David S McCarthy

Date: 2007-10-20

We divided the C104 Project into two phases, building up in each case to the preparation of a Tutor Marked Assignment (TMA). We also completed the project with an audio-visual presentation covering units 9 and 10.

We would like your feedback on both your overall impression of this approach and also of the individual elements and activities that have contributed to it. Please fill in as many of the boxes as you can, but do not worry if you were not able to undertake every activity. We are interested to hear what you did manage to achieve and what benefits or otherwise these provided to your understanding and enjoyment of the module, as taken through the learning mode of mobile phone technology.

Phase 1 (Units 1 – 4)

Getting started

We suggested five activities to get you started with using your mobile phone, before tackling the first unit, and a further activity to get you thinking about the first TMA. Please indicate if you found the activities very/quite/not helpful in each case:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Did you do it?</th>
<th>Very helpful</th>
<th>Quite helpful</th>
<th>Not helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Getting started – 5 activities</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tackling the TMA</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any overall comments on the getting started activities?

I kept most of ideas and thoughts concerning the getting started activities in my head rather than writing them down as was suggested. I did spend a bit of time familiarizing myself with the phone’s functions. I had recently purchased a digital camera and I have found this phone to be just as functional or even better than the camera in terms of taking photos and video.
Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex B

Working through units 1 to 4

We proposed selecting a number of themes to build up a picture through the units under the heading: The role of ICT in achieving Sustainable Development goals. For each theme we devised a number of activities, linked to specific tasks we suggested to help you develop your ideas. Again please indicate how helpful you found these, if you were able to have a go at them.

<table>
<thead>
<tr>
<th>Theme/Activities</th>
<th>Did you do it?</th>
<th>Very helpful</th>
<th>Quite helpful</th>
<th>Not helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT &amp; Sus dev</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 2</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 3</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sectors</td>
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<td></td>
<td></td>
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<tr>
<td>Activity 4</td>
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</tr>
<tr>
<td>Knowledge</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Activity 6</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Mgt</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 8</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Activity 9</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comm for Devt</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Activity 11</td>
<td>YES</td>
<td>YES</td>
<td></td>
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</tr>
</tbody>
</table>
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Annex B

<table>
<thead>
<tr>
<th>Activity 12</th>
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</thead>
<tbody>
<tr>
<td>Use of ICTs</td>
<td>NO</td>
</tr>
<tr>
<td>Activity 13</td>
<td>NO</td>
</tr>
<tr>
<td>Activity 14</td>
<td>NO</td>
</tr>
</tbody>
</table>

Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA in the form of a portfolio: for example, did you like this different type of TMA? Did you find the overall building “block approach” helpful? Were there too many activities?

Some of the activities called for greater technical skills such as posting a web blog.

The tasks to be done could have been made less daunting by listing them in a more concise format instead of reproducing the text from the audio. It was an interesting though demanding project. I would encourage its continuation and urged that it be graded to add towards the final mark in the course.

Phase 2 (Units 5 – 8)

Working through units 5 to 8

We focused on a more simplified form of theme setting here with the approach once again directed towards preparing a second TMA, but here in a conventional essay format. We also reduced the number of activities, mostly to one per unit theme. Please indicate how helpful you found them if you managed to do them.

<table>
<thead>
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<th>Quite helpful</th>
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<td>NO</td>
<td></td>
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</tr>
<tr>
<td>Int Property Activity 1</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity 2</td>
<td>NO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT &amp; MDGs Activity</td>
<td>NO</td>
<td></td>
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Developing an educational model for delivery and support of postgraduate distance learning in Southern Africa that incorporates m-learning

Annex B

<table>
<thead>
<tr>
<th>ICT systems Activity</th>
<th>NO</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty Activity 1</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Activity 2</td>
<td>NO</td>
<td></td>
</tr>
</tbody>
</table>

Overall comments on the approach of themes, tasks and activities to provide a context for preparing a TMA, this time in the form of a conventional essay: for example, contrast this approach with Phase 1. Did you prefer working towards a more conventional essay?

I was unable to do this TMA because of time constraints but I saw nothing wrong with it.

General Comments Overall

We used audio-visual support throughout. Did you find this helpful? In what ways?

Finally, we would like your thoughts about the general strengths and weaknesses of using the mobile phone as a learning device. For example: think about studying whilst away or on the move, making use of short intervals of time, help with revision, understanding key concepts and applying these in the context of a TMA.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>compact</td>
<td></td>
</tr>
<tr>
<td>functional</td>
<td></td>
</tr>
<tr>
<td>fairly</td>
<td></td>
</tr>
</tbody>
</table>
This document details my input into the mobile learning project up to mid-August 2007. It also describes my experience with the project and the lessons learned so far. My input relates specifically to the Rural Development module (C30).

The report is divided into two main sections.

- Mobile learning content
- Tutoring for mobile learning students

The first section deals with my role in the development of academic content for use on the Nokia N70. The second discusses interactions with the participating students once they had received their phone and the associated learning materials. It also draws together some associated findings.

**MOBILE LEARNING CONTENT**

My focus in the development and design of mobile learning content was on the academic content rather than on the technological challenges associated with formatting the content for presentation on the Nokia N70. The latter was a role for others.

My role in the development of mobile learning content involved two things:

- developing new materials
- identifying existing materials

‘Existing materials’ include materials in the current version of C30 and elsewhere which could be presented on a mobile phone without any further adaptation by myself. Examples include video found on, and downloaded from, the internet, as well as the glossaries and self-assessment exercises that already exist as part of the C30 module.

‘New materials’ – although closely linked to the existing content of C30 – involved significant additional work in their development and design. Examples include work on an audio version of the current C30 text; designing activities that take advantage of the Nokia N70s camera and recording facilities; writing new text that summarises key points for viewing on a small screen.

**GUIDING PRINCIPLES AND ASSUMPTIONS**

My main objective throughout this project was to find ways in which the Nokia N70 (or phones like it) could help students studying C30, specifically the present version of it. The focus was on how the current mobile technology can help students to learn when their usual learning resources are not at hand – specifically in the following two types of situation:

- where students are without access to their computers and course files for prolonged periods of time – eg when they are in the field
any situation where students have a bit of time to spare for studying, but do not have access to their main study resources or find it inconvenient to use them – eg when sitting on a bus or waiting for a meeting to start.

The identification and design of mobile learning content and processes was also guided by the following assumptions.

Although the mobile phone is designed first and foremost as communications devices, that would not be Nokia N70’s primary use for the purposes of this project. Most communications between project participants (especially between students and myself) would take place via a PC. The technology is not yet sufficiently developed or cheap enough to allow anything other than a minimal amount of communication via the mobile. Texting is not expensive but is only suitable for relatively short messages. Its value in more detailed communications is therefore limited.

The materials presented via the mobile device cannot replace the text that is currently presented to students via more conventional means. Students are still expected to read the C30 module guide and readings. The only exception to this is where the module text is reproduced in audio format. What the mobile learning materials should offer is a supplement to the existing version of C30 that will help students study more effectively.

Similarly, whilst the video, audio, and photo capture facilities of the modern mobile phone allow students to engage with their subject in new ways, this cannot (as far as C30 is concerned) be a substitute for engaging with the academic literature and practicing writing skills. However, for students with sufficient time and enthusiasm the multi-media capabilities of the phone can potentially enhance the learning process.

The mobile learning technology should not add to the existing work load of students, who are already hard-pressed to meet their various commitments. Instead it should allow them to make more effective use of time that would otherwise be wasted.

The next section provides a more detailed account of the individual learning features that were identified or developed for the project.

### SUMMARY OF KEY FEATURES

The mobile learning features listed below have all been included as part of the C30 package. Some of them appear throughout the module, others in just a few places on an experimental basis.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>tests</td>
<td>(all units)</td>
</tr>
<tr>
<td>activities</td>
<td>(all units)</td>
</tr>
<tr>
<td>audio version</td>
<td>(unit 1 only)</td>
</tr>
<tr>
<td>videos</td>
<td>(some units)</td>
</tr>
<tr>
<td>polls</td>
<td>(all units)</td>
</tr>
<tr>
<td>unit structure</td>
<td>(unit 6 only)</td>
</tr>
</tbody>
</table>

A more detailed description and rationale for each of these is given below.
TESTS

Description

These are short tests based upon materials that appear in the unit guide. They typically correspond with different subsections. The students are asked a question on the screen of their mobile device. The answers to the questions are very brief and may involve a short list. They can therefore be formulated in the student’s head without any need to write something down or type anything. When they have had time to think they can click for the answer. The amount of text for individual questions is limited to that which can be sensibly viewed on the small screen of the mobile phone.

The tests could also presented in audio format, but time and resources prevented this for the current project.

Rationale

They allow students to make good use of small slots of time, such as when waiting for a bus, and can also be done whilst on the move or away from other learning resources. There are those times in the day which are too short to do many of things one would like to do, but which may just be long enough to get out a mobile phone and do a few tests.

The tests act as a summary of the key points for each unit and are designed to help students consolidate their knowledge of what is in the more detailed unit guides. It is widely acknowledged that people absorb new information better if they are able to review and revise key points on a regular basis. Those way things are more likely to stay in the long-term memory!

Ideally the student will have read through the relevant unit guide before doing these tests, although the tests could also serve as a taster of what is to come. The tests should serve as a useful revision tool, not only in the run up to the exams but throughout the year.

ACTIVITIES

Description

These are basically a set of instructions in which students are asked to use their mobile devices to capture video, still images, or audio relating to a particular subject. The subject matter relates to one or more themes in each unit and is detailed in the set of instructions that the student can read on their phone.

Rationale

Using the phone to document subjects that they encounter in the field should encourage students to observe the environment in which they live and work in ways that are relevant to the C30 module. It should help students to explore the linkages between what they observe in the real world and what they are learning from the C30 texts, and should help them apply the ideas and analytical frameworks of C30 in a more focused and applied manner.

Actively participating in this may also help students to discover things for themselves rather than passively absorbing the written or spoken word. This can make studying a broader and more stimulating experience, as well as making it easier to remember what has been learnt.
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Annex C

With enough participation in these activities, and as the technology for transferring large files over the internet improves, the output of these activities could be shared amongst members of the learning community. This would enhance the current exchange of knowledge and experience within the learning community (which is largely text-based).

**AUDIO VERSION**

Description

An audio version of the module guide was produced for Unit 1. The text that appears in the existing module guide was edited very slightly to make it more suitable for audio presentation. The resulting audio-script was then read aloud by the author and recorded using audio software. The audio files are very long (a little under 100MB for the whole unit) but can be stored on, and played back by, the mobile phone using the current technology.

Due to the time and resources required to turn each unit into an audio version, only one unit was undertaken initially. The idea was to test student reactions to it before considering whether or not to devote further resources to this.

Rationale

The rationale for an audio version of the module study guide should be fairly self-evident. It allows students to learn/study when they are unable to read the module text, either because they are travelling or because the light is too poor. It is therefore highly relevant to the concept of 'mobile learning'.

Some students also absorb information better if they can listen to it as well as read it. Moreover, listening to a unit before reading it can reduce the amount of time that needs to be devoted to reading, as students can skim through the more straightforward sections fairly rapidly, whilst restricting detailed examination of the text to the harder sections.

Additional suggestions

The current audio version provides continuous playback of a whole section (there are four sections in a unit), with the usual, stop, start, pause, rewind facilities. An alternative to this format would be to make the playback more visual and more ‘input driven’. For example, students could be presented with an expandable/minimizable outline of each unit, showing all the headings that appear in the unit guide at each level of the unit structure (there are currently 4 such levels). They could navigate their way through the unit structure and select whichever section or subsection they wish to listen to. The relevant heading would remain visible on the screen and would change as the audio progresses from one section to the next. This format would give students greater control and should also help to keep them more focused. Having something visual (ie text) on the screen that links with the audio should also aid the absorption and retention of what is being heard. Linking the audio with a powerpoint presentation might provide the optimal solution.
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Annex C

VIDEO

Description

A number of videos of relevance to C30 were found on various internet websites (especially IFAD and FAO). These are professionally-made documentaries that tie in with some parts of the current module.

At present only relatively few publicly available videos are sufficiently relevant to the contents of C30 to justify their inclusion, whilst the customised production of video documentaries is beyond the scope of this project. In the future it might be possible to include video or audio recordings of lectures and presentations made by DLP staff, but this was not done on this occasion.

Rationale

Well made video documentaries can stimulate interest in a subject and add colour and relevance to academic subjects that may at time seem rather dry and abstract. Where appropriate video and audio clips can be supplied, these can also enhance a student’s understanding and memory of the text-based learning existing materials.

POLLS

Description

These refer to short questions that students can send answers to via text (or email) to their tutor and fellow students. They are structured to require only very short answers so that it would be practical to answer them in a text.

They encourage students to offer opinions and views on key themes in the learning materials and/or its relevance to their own experience of rural development.

Rationale

They provide a focus for interaction between members of the ‘mobile learning community’ (including the tutor). They may help students to feel part of that community even when they do not have access to their email.

As with ‘tests’ discussed earlier, they are short and quick and can be done whenever students have a few moments to spare and wherever they may happen to be.

UNIT STRUCTURE

Description

A powerpoint presentation was made for one of the units (Unit 6) that acted as a complete table of contents for the unit guide, with all 4 levels of headings and subheadings listed.

Rationale

Unfortunately the presentation didn’t transfer very well to the mobile phone screen, but there is a strong rationale for making the structure of each unit available for viewing on the mobile phone, either using a powerpoint-type presentation or something akin to MS Word’s outline facility.
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Reviewing the various section and subsection headings of a unit can greatly help in the revision process and is something else that could be done whenever students have a few moments to spare and are away from their other study resources.

Other possibilities

Outlined above are the features that have actually been included as part of the mobile learning content for this year. There are a couple of other things that weren’t included but which would be worth considering in the future, if the DLP is to pursue mobile learning beyond the end of this project.

C30: EXISTING SELF-ASSESSMENT EXERCISES

These already exist in the C30 module guide. Providing it is technological feasible it would be useful to have these on the mobile phone along with ‘tests’ that were designed specifically for the phone. The rationale for their conclusion is exactly the same as for the aforementioned ‘tests’.

Key terms and concepts

A list of the key terms and concepts for each unit already exists in the module guide. These two could be usefully made available on the mobile phone.

TUTORING

Role

Most of the time I have given to this project has been devoted to the development and design of the content already discussed in the previous section. However, some time has also been set aside for a tutoring role. It was envisaged that this would include two main activities

Responding to questions relating to the mobile learning content discussed above as well as technological queries relating to the use of the phone itself.

Helping to disseminate the output of the student ‘activities’ (i.e. the videos, photos and audio recordings made by students) and facilitating discussion and analysis of it.

In practice the tutoring role has been limited to the first of these, as so far none of the C30 students have got beyond the basic ‘getting started’ activities. These are a series of activities aimed at all the participating students, not just those from C30. Their purpose is to help students to familiarise themselves with the phone and demonstrate to their tutor that they have mastered the phone’s various functions.

Most of my limited input as a tutor has related to these getting started activities – notably, sending out emails to encourage students to actually do the ‘getting started’ activities and dealing with associated queries. Most of the queries have concerned technological issues.
FINDINGS

‘Activities’

Progress with the ‘getting started’ activities has been disappointing despite repeated attempts by myself to encourage participation. The table below shows the achievement of the students in relation to the various getting started activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>No of students out of 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have replied to my emails about the getting started activities</td>
<td>5</td>
</tr>
<tr>
<td>Reported using the mobile to capture:</td>
<td></td>
</tr>
<tr>
<td>still photos</td>
<td>4</td>
</tr>
<tr>
<td>video</td>
<td>3</td>
</tr>
<tr>
<td>audio</td>
<td>2</td>
</tr>
<tr>
<td>Sent me multimedia files</td>
<td></td>
</tr>
<tr>
<td>still photos</td>
<td>4</td>
</tr>
<tr>
<td>video</td>
<td>2</td>
</tr>
<tr>
<td>audio</td>
<td>2</td>
</tr>
<tr>
<td>Have established functioning link between their phone and PC</td>
<td>4</td>
</tr>
</tbody>
</table>

With such slow progress with the ‘getting started’ activities it is perhaps not surprising that none of the students have so far undertaken any of the documenting ‘activities’ relating to C30.

A number of reasons for the lack of active participation are apparent from the emails of students who have responded to my email prompts. These include
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- Lack of time
- Difficulty communicating via email whilst in the field
- Difficulty sending large files via email

None of these explanations really come as a great surprise. Although students are under some ‘moral’ obligation to participate actively in the project (having received a free mobile phone on condition that they would) there is no way of enforcing this. Studying at the same time as working full-time (as most of the C30 participants are doing) is already very time consuming, so it is perhaps no wonder that non-compulsory, non-enforceable extras, such as the mobile ‘activities’, will find their way to the bottom of the priority list.

Email communication whilst in the field is an acknowledged difficulty and one that mobile phones may in the future help to overcome. At present, however, the technology for sending emails via the mobile phone in poor countries is still limited and/or prohibitively expensive.

The size of multimedia files, especially video, is very large. The files of the two students that have each managed to email a video recording to me are about 7 MB in size, and that is for videos that last less than two minutes. This does not prevent students from making and storing videos for their own viewing, but in the case of students with poor internet connections, it clearly is an obstacle to videos being shared with the tutor and other project participants. Students have been offered an additional data card on which to save files before posting them to their tutor by airmail; but that is obviously not ideal, and none of the C30 students have so far taken up this offer.

Audio version

There has been relatively little feedback on the other features of the mobile learning content. However, a number of students have expressed their disappointment that only Unit 1 was available in audio format. To address this some additional time will be devoted to extending the audio to further units, although it is unclear as yet whether there will be enough time and resources to complete a full audio version of C30.

CONCLUSIONS

It remains to be seen how much use has been made by students of the other features the C30 mobile learning content. A questionnaire has been produced to evaluate this and will be sent to students in due course.

What is clear at this stage of the project, at least as far as C30 is concerned, is the point made earlier about the difficulties of getting students to participate in study activities that put pressure on their time. For this reason much of the content produced or recommended for C30 has been developed with the aim of saving students time, or at least allowing them to study during those small portions of time that cannot be used for much else. That is the theory. Whether this turns out to be the case in practice has yet to be determined!