Mobile Learning in Developing Countries

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MOBILE LEARNING APPLICATIONS

TEACHING AND LEARNING

M-learning can complement other teaching methods and work in tandem, and can achieve it in a very cost-effective way. It can also enhance non-regular and poor academic support, such as:

- Personal care, feedback and support
- Motivation and guidance
- Supporting students outside the institution
- Course administration and management
- Institutional quality assurance

Some negative aspects of m-learning include the possibility students may feel:

- Pressure from their peers
- That location monitors technology in their movement
- Their devices when taking assessments, seats, and can be monitored
- Their privacy
- They mismanage their professional development and other work

SHARED DISCUSSION

Use student discussion during seminars, discussions and tutorials, perhaps in seminars, but not completely.

M-LEARNING APPLICATIONS

INDEPENDENT STUDY SKILLS AND INFORMATION MANAGEMENT

- Data collection for projects
- Quick information amongst students and teachers
- Bibliographic databases in mobile phones
- Graphical tools that support mind-mapping
- Continued access to course and reference material in the workplace
- Support with personal information management in a new learning environment
- Data collection for projects
- Graphical tools that support mind-mapping
- Continued access to course and reference material in the workplace

MOBILE LEARNING IN DEVELOPING COUNTRIES

CASE STUDIES

University of Westminster, United Kingdom

Use mobile devices to support staff and distance-learning students in teaching, learning and administration. There is a need to help a group of staff with deadlines, revisions and preparing using: iShuttle Message Service (SMS) for messaging, and another pilot involving a group of students with Case (PDA) to help personal organization, and mobile access to course material. These pilots have been of good achievement in the university, and staff and student support is near to zero.

ZMQ project, India

Sponsored by ZMQ Software Systems, the project uses mobile phones to support students with deadlines, revisions and timetabling using Short Message Service (SMS) and data collection for projects.

FURTHER MATERIALS

WEBSITES

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INSTITUTIONAL TRAINING

An innovative solution based on the use of mobile devices, is training for new employees. It is a joint venture between the Commonwealth of Learning and the University of the West Indies.

MOBILE LEARNING IN DEVELOPING COUNTRIES

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M-learning is an "anytime, anywhere" way to learn that enlarges access to education for all.

INTRODUCTION

Mobile learning (M-learning) is defined as learning, anywhere, anytime, using mobile devices or devices that are "connected" in some way to a network. This definition includes learning that takes place on computers and all mobile devices that have Internet access. Mobile learning (M-learning) can complement other methods of learning and can be effectively used to support learning in various settings.

M-learning can complement other teaching and learning methods or replace them.

MOBILE SYSTEMS AND THEIR USE

Handhelds at all price levels:
- Phones
- Smartphones
- PDAs
- Pocket PCs
- Laptops
- Smartbooks
- eReaders
- GPS receivers
- Digital cameras
- Media players
- Wearable devices

Security: Devices that lock a button, password, facial or voice recognition, or a combination of these, can add security to mobile learning applications.

Travelling plan: Can be compatible, especially among multiple handhelds. Regularly used devices are a common need. Frequent users can select a few handhelds that can be used in any environment.

Software support: First-generation software is limited. Most software applications are designed for desktop computers, and less can be used with handhelds. However, there are several initiatives that support the development of handheld software.

Personal use: Handhelds are used for personal use, including entertainment, communication, and productivity.

Organizational use: Handhelds are used in organizational settings, including education, government, and business.

Sustainability: Handhelds are sustainable, as they can be used for both personal and professional purposes.

Software: Handheld software is available in various forms, including desktop applications, web browsers, and mobile applications.

Hardware: Handhelds come in various forms, including smartphones, PDAs, laptops, and wearable devices.

Networks: Handhelds can connect to various networks, including mobile networks, Wi-Fi, and Bluetooth.

Past, present, and future: Handhelds have evolved from simple communication devices to complex, multi-functional devices with a variety of applications.

M-learning: Mobile Learning

The M-learning movement has grown rapidly. Mobile devices are now ubiquitous, and the use of mobile devices is becoming increasingly important in education. Mobile learning (M-learning) is now an essential part of the education landscape, and it is changing the way we think about learning.

Handhelds are currently the dominant mobile devices, apart from smartphones. They are used for a variety of purposes, including communication, entertainment, productivity, and education. Handhelds are often referred to as "smart" because they are capable of performing a wide range of tasks, including web browsing, email, social networking, and gaming.

Handhelds are also useful for education, as they can be used for a variety of purposes, including learning, research, and collaboration. Handhelds can be used in a variety of learning environments, including schools, universities, and workplaces.

In addition to the benefits of handhelds, there are also some downsides to consider. For example, handhelds may not be as easy to use as desktop computers, and they may not be as powerful. However, handhelds are becoming more powerful and are increasingly being used in education.

As handhelds continue to evolve, it is likely that they will continue to play a role in education. It is important to keep in mind that handhelds are just one tool in the educational toolkit, and they should be used in conjunction with other learning technologies.

M-learning: Mobile Learning

Mobile learning (M-learning) is an "anytime, anywhere" way to learn that enlarges access to education for all.

PROS AND CONS

Pros:
- Accessibility: Handhelds are accessible to people in all settings, including low-tech or rural environments.
- Usability: Handhelds are user-friendly and easy to use.
- Mobility: Handhelds are portable and can be used anywhere, at anytime.
- Cost: Handhelds are relatively inexpensive compared to desktop computers.
- Efficiency: Handhelds are more energy-efficient than desktop computers.
- Scalability: Handhelds can be used in a variety of settings and can be easily scaled up or down.

Cons:
- Security: Handhelds may be vulnerable to theft.
- Dependence on batteries and recharging: Handhelds require regular recharging.
- Poorer readability: Handhelds may have smaller screens and lower resolution.
- Writing and selecting: Handhelds may be difficult to use for writing and selecting text.
- Power supply: Handhelds may have limited power supply options.

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SOFTWARE PROGRAMS

Handheld and mobile software is a vast area that is continually changing and evolving. It is important to keep up with the latest developments in handheld and mobile software to ensure that you are using the most effective tools for your needs.

There are many different types of handheld and mobile software, and it is important to choose the right software for your needs. For example, if you are using handhelds for education, you may want to consider software that is specifically designed for education.

In addition to the software itself, it is also important to consider the hardware on which you are running the software. For example, if you are using handhelds for education, you may want to consider software that is specifically designed for handhelds.

It is important to keep in mind that handheld and mobile software is a rapidly changing field, and it is important to keep up with the latest developments to ensure that you are using the most effective tools for your needs.
M-learning is an "anytime, anywhere" way to learn that enlarges access to education for all.

INTRODUCTION
M-learning (also called mobile learning, mobile learning) is the use of mobile devices to deliver learning content. The goal of mobile learning is to increase access to education and learning to all who, for one reason or another, are unable to benefit from traditional forms of education delivery. Mobile devices are seen as a potential solution to the problem of creating an inclusive learning environment.

MOBILE SYSTEMS AND TOOLS
Handhelds at all mobile devices

• About the size and weight of a small personal address book
• Usually has a screen in "front", although screen is not internally lit.
• Handhelds, like other types of computers, have memory and disk storage. Some devices have separate memory cards, which can be inserted or removed.

IMPLEMENTATION STRATEGIES

• Simplest short projects that require no support.
• Software goes in "front", so is visible to the teacher.
• Exemplar content, lessons and courses across a range of disciplines that is an "accessible" device meets the needs of all, or nearly all, users. Handhelds are currently the dominant mobile devices, apart from phone and Internet resources.

Handheld programs with educational applications include:

- Similar in complexity and ease-of-use, though Pocket PC is more expensive for comparable functionality.

Handheld and mobile phone software is generally cheaper than desktop or laptop software. Software programs may also be downloaded from the Internet through Internet resources.

Comparison of Pocket PC and Palm:

- A compact version of Linux, the system espoused by the Open Source community.

Operating systems:

- Can be complicated, especially among multiple devices. On the other hand, community files like dentistry or electronics.

APPLICATIONS

- Document readers that enable users to read but not to alter text.
- An "accessible" device should be usable by all, or nearly all, users, including those with disabilities. Handhelds are currently the dominant mobile devices, apart from phone and Internet resources.

INFRASTRUCTURE, TECHNOLOGY AND HARDWARE

- A compact version of Linux, the system espoused by the Open Source community.

USER INTERFACE AND DATA ENTRY

- Downloaded software may be free, although some institutions may charge for archiving data, and for installing new software programs.

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INFRASTRUCTURE, TECHNOLOGY AND HARDWARE

- A compact version of Linux, the system espoused by the Open Source community.
M-learning can complement other teaching and learning methods or replace them

INTRODUCTION
M-learning, or mobile learning, is sometimes described as “hand held” learning. It refers to the use of mobile devices, such as cell phones or personal digital assistants (PDAs), for teaching and learning. Mobile devices are educationally interesting because they offer:

- Credible, cost-effective component of blended open and distance learning
- Usability and accessibility
- 24/7 access
- Ability to deliver content in convenient, location-independent manner
- Potentially more effective than traditional teaching methods
- Cost-effective
- Highly portable

M-learning can be used for a variety of purposes, such as:

- Sending and receiving messages
- Accessing and storing information
- Tracking and monitoring
- Monitoring and grading
- Data capture
- Collaboration
- Communication
- Assessment

M-learning can enhance teaching and learning in a variety of ways, such as:

- Personalized learning
- Access to learning materials
- Monitoring and feedback
- Collaboration and communication
- Assessment and evaluation

MOBILE SYSTEMS AND TOOLS
Handhelds at mobile phones
- Are about the size and weight of a small personal organizer
- Are usually used in a vertical or “portrait” orientation
- May have a variety of functions
- Can be used for
texting, email, calendar, alarms, and more

IMPLEMENTATION STRATEGIES
- Short-term projects that want to support a teacher, a team, or a class
- Long-term projects that want to support an organization
- Projects that want to support a specific group of users

INFORMATION STORAGE AND MEMORY
Handhelds store and access information on memory cards. Information can be stored and accessed in various ways:

- External memory cards
- Internal memory
- Cloud storage

POWER SUPPLY
- Can be rechargeable or disposable
- Some handhelds have built-in batteries
- Others use external power sources

SOFTWARE PROGRAMS
- Handheld and mobile software is generally cheaper than desktop software
- It is often distributed over the Internet or via CD-ROM
- Some applications are included with handhelds
- Others can be purchased separately

OPERATING SYSTEMS
- Many handhelds run a proprietary operating system
- Some use Linux
- Others use Windows CE

REFERENCES
- General academic sources, such as reference books and journals
- Technical documents and manuals
- White papers and technical reports
- Online articles and blogs
- Conference proceedings, workshops, seminars, and presentations

OTHER SOURCES
- Personal communication
- Webinars and workshops
- Training and certification programs
- Software and hardware evaluations
- User feedback and testimonials
- Case studies and success stories

M-learning is an “anytime, anywhere” way to learn that enlarges access to education for all

Security: Devices that lie close to a phone, located, but cannot always reveal

- Transferring data: Can be complex, especially among multiple devices
- Security implications of device design and implementation
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NETWORKING AND CONNECTIVITY
- Handhelds can connect to a variety of networks, including:
- Bluetooth
- Wi-Fi
- 3G
- EDGE
- Cellular networks

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M-LEARNING APPLICATIONS

TEACHING AND LEARNING
M-learning can complement other teaching and learning methods to reach learners, and can be utilized as a core or as other methods. It can also be used in non-school and open education, such as:
- Practical case, feedback, and reference
- Workshops and guidance
- Supporting students in the classroom
- Course administration and management
- Institutional quality assurance

Some negative aspects of learning include possible limitations such as the relatively short length of messages that can be keyed in, or the technological limitations of computers being networked together. These devices allow the users to access and access to the internet, but may not provide the user with any information about their privacy.

TRANSMITTING CONTENT

Lectures, seminars, books and websites. Web pages, computer- and mobile-based applications present learning to students as a guide. M-learning offers a range of content traversed channels, but does not offer in traditional packages, such as:
- Daily in wireless class notes, and reading.
- Multiple choice quizzes with immediate feedback.
- Knowledge and self-evaluated tests.
- Following links to selected websites.
- Glossary, vocabulary and information.
- Concepts or definitions of revision.

An attention to vocabulary, spelling, or correcting "the content" is not a content that can be a core or contextual to one or another. It helps the learner to access the material. This gives them a greater level of the content, and to self-evaluate and support a topic.

CASE STUDIES

University of KwaZulu-Natal, Durban, South Africa

M-learning is a tool that supports self-learning and decentralized students in learning, teaching and administration. It uses a pilot to help a group of students with mobile phones, and developing using Short Message Service (SMS) text messaging, and another pilot involving a group of students with customized SMS and e-mail to the help the learner, and to enable access to core material. These pilots have a greater level of the content, and to self-evaluated and support a course.

ZIM projects, India

Swarmware's ZMW Software Systems, the project uses mobile phones and SMS to discuss high-potential students. Popular regional language is also dominant in high-potential universities, and these are a great deal of the content, and are self-evaluated and support a course.

FURTHER MATERIALS

BOOKS


M-LEARNING APPLICATIONS

TEACHING AND LEARNING

M-learning can complement other teaching and learning methods or replace them, and can enable it to form as a viable, or as other methods. It can also increase non-student and peer-assisted support, such as:

- Practical case, feedback and opportunities
- Mentoring and guidance
- Supporting students across the nation
- Course administration and management
- Institutional quality assurance

Some negative aspects of learning include the possibility that some students may feel:

- Pressure to learn or drop out of the course
- Too little time to review material they may have missed
- Too much access to resources that may hinder their learning

These devices allow students to access and contact their peers or their teachers.

There are also professional and technical developments that do not yet flourish.

TRANSMITTING CONTENT

Usefulness, features, habits and facilities. Web pages and computer-assisted learning packages from teachers or tutors are given. M-learning offers a range of content transmission, but delivered in smaller packages, such as:

- Daily or weekly tips, reminders and calendars
- Multiple choice quizzes with immediate feedback
- E-mailing and feedback in one button
- Following links to selected webpages
- Glossary, vocabulary assistance
- Courses or a reference to revision

An attention to vocabulary and layout is important to all learning materials, or "learning" the content. So developing content that complies for the content with the technical standards that make it manageable across computers, across devices and across networks is not guaranteed if the materials are available, or if the context is reasonable.

Quality assurance is the key to many projects and emerging worldwide validating technologies are for technology supported learning. The process will be the same knowledge management, sharing content, or other types of learning, rather than replacing them completely.

SHARED DISCUSSION

Usefulness, features, habits and facilities. Web pages and computer-assisted learning packages from teachers or tutors are given. M-learning offers a range of content transmission, but delivered in smaller packages, such as:

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- Glossary, vocabulary assistance
- Courses or a reference to revision

An attention to vocabulary and layout is important to all learning materials, or "learning" the content. So developing content that complies for the content with the technical standards that make it manageable across computers, across devices and across networks is not guaranteed if the materials are available, or if the context is reasonable.

Quality assurance is the key to many projects and emerging worldwide validating technologies are for technology supported learning. The process will be the same knowledge management, sharing content, or other types of learning, rather than replacing them completely.

SHARED DISCUSSION

Usefulness, features, habits and facilities. Web pages and computer-assisted learning packages from teachers or tutors are given. M-learning offers a range of content transmission, but delivered in smaller packages, such as:

- Daily or weekly tips, reminders and calendars
- Multiple choice quizzes with immediate feedback
- E-mailing and feedback in one button
- Following links to selected webpages
- Glossary, vocabulary assistance
- Courses or a reference to revision

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