

eLearning for Agricultural Development

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Outline

- » Introduction
- » Role of ICTs and eLearning in agricultural development
- » My personal eLearning experience
- » Status of agriculture eLearning
- » Preliminary results of my online survey
- » Conclusions

Introduction

Agricultural development depends on constantly improving existing practices and on the development and adoption of innovations.

Rivera, et al, 2006

Knowledge Gap

The gap found all over the region between experiment station yields and farm yields implies that further increases are possible with current technologies.

Food & Fertilizer Technology Center, 1998

ICT and Agricultural Extension

Agricultural extension, which depends to a large extent on information exchange between and among farmers on the one hand, and a broad range of other actors on the other, has been identified as one area in which ICTs can have a particularly significant impact.

Ballantyne and Bokre, 2003

ICT and Agricultural Information

In more concrete terms, ICT allows information generated by the researcher to be more efficiently accessed by the extension worker to be more effectively transferred to and applied by the farmer.

Flor, undated

eLearning and Agricultural Education

E-learning is seen as a means of increasing access to educational opportunities in rural areas and keeping pace with rapid changes within the agricultural sector

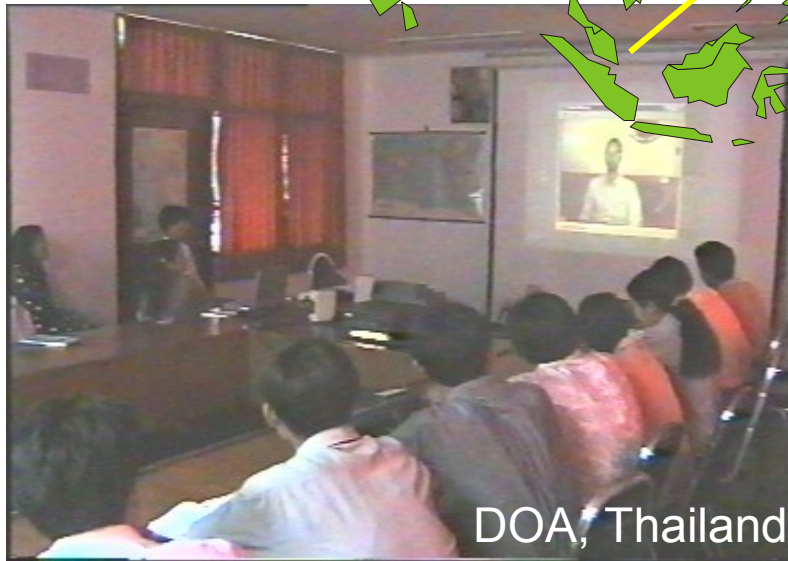
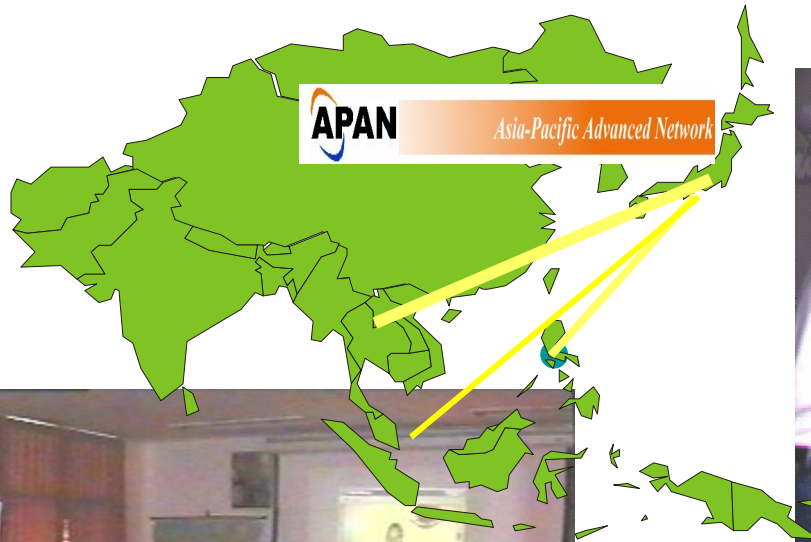
Jagoda, 2006

Does eLearning Work?

Research now shows that traditional classrooms and virtual classrooms are about equally effective overall. It's not the medium that makes the difference; it's the way in which the designer and the instructor use the features that are available.

Clark, 2005

Videoconference Session



DOA, Thailand



IRRI, Philippines

- » Rice Production Training Course
- » Bioinformatics (from Singapore)

Web-based Courses

The screenshot shows a web browser displaying the homepage of a course titled "Digital Literacy for Rice Scientists". The page features a blue header with the course title and a sub-header "2003 Online Training Series 01". A yellow highlighted box contains the following text: "The revolution taking place in information and communications technologies presents a tremendous new opportunity for the CGIAR to bring scientific knowledge and indigenous and local knowledge together to deal on global challenges and to make the knowledge available to its constituents. These advances enable the systemic acquisition and dissemination of relevant and timely information, as well as a dramatically improved ability to gain access to the universe of knowledge and to communicate through diverse electronic networks. The CGIAR must be at the forefront of harnessing these technological resources to mission."
CGIAR System Review Report, (2003)

On the left side, there is a "Table of Contents" menu with links to: Welcome, Introduction: Why this course?, How to take this course, Registration and self assessment, What is the internet?, What is the World Wide Web and what makes it work?, and Terminology.

The screenshot shows a web browser displaying the homepage of a course titled "English for Agriculture". The page features a green header with the course title. A blue vertical bar on the left side contains a list of links: Course Structure, Contents, Glossary, Downloads, and Links. The main text area contains the following text: "Welcome to English for Agriculture, a distance-training course devoted to improving your ability to understand and use the English terms and grammatical structures most commonly found in agricultural texts and research papers. This course focuses on written communication skills and utilizes email and discussion groups for submission of assignments and to facilitate interaction between and among students and instructor. To get the most from this course you should already have an intermediate understanding of English." Below this text, it states "English for Agriculture has the following objectives:" followed by a bulleted list: "• To extend the agricultural English vocabulary".

Web-based Courses

Introduction to Integrated Pest Management

APRTC >> [agLearn](#) >> [Introduction to IPM](#) >> Announcements

Welcome to "Introduction to Integrated Pest Management".

Please feel free to browse the pages in this course to get a feel for what it's all about. A good place to start is to click on the **[Course Information]** button at the top of the page and carefully read what the authors of this course have to say about what you will learn, who it is for, the course structure and schedule, and the recommended technical requirements. You might also want to look through some of the lessons and the associated exercises.

If you like what you see, please email info@aprtc.org for information about future course offerings.

Enjoy.

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Integrated Soil Fertility Management

APRTC >> [agLearn](#) >> [Integrated Nutrient Management](#) >> Announcements

Welcome to "Integrated Soil Fertility Management".

Please feel free to browse the pages in this course to get a feel for what it's all about. A good place to start is to click on the **[Course Information]** button at the top of the page and carefully read what the authors of this course have to say about what you will learn, who it is for, the course structure and schedule, and the recommended technical requirements. You might also want to look through some of the lessons and the associated exercises.

If you like what you see, please email info@aprtc.org for information about future course offerings.

Enjoy.

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Learner Management System (LMS)

The screenshot shows a Mozilla Firefox browser window displaying an online forum. The page title is "Fundamentals of Integrated Pest Management". The browser's address bar shows the URL: <http://sdlearn.dc.affrc.go.jp/sdlearn/enterForum.do?courseOfferingID=4&forumOrder=1>. The forum page has a navigation menu with items: Announcements, Course Info, Gradebook, E-mail, Forums, Upload, Chat Room, Participants, Facilitators, and Logout. A welcome message reads: "Welcome Buenafe Abdon . (If you are not Buenafe Abdon please click here to sign-in .)".

On the left side, there is a sidebar with various course-related links such as "Results of all Polls", "Exercise Deadlines", "Glossary of Terms", "Quick Quiz", "Time Zones", and "Facilitator Functions for Course Offering".

The main content area is titled "The Online Forum: General" and contains a list of forum posts. A legend indicates that a single star (★) means a post was made during the past day, and two stars (★★) means a post was made during the past two days. Below the legend, there are links to go back to the main page and to click here to send all messages to the user's mailbox.

A table lists the forum posts with columns for "Message subject:", "Posted by:", and "Date posted:".

Message subject:	Posted by:	Date posted:
Integrated Personnel Management	Kennedy, John Samuel	2005-06-13 01:22:09.0
RE: Integrated Personnel Management	Kennedy, John Samuel	2005-06-16 05:51:25.0
IPM intro	Khaing, Ohnmar	2005-06-13 08:28:41.0
IPM and its adoption	Srinivasan, Madapuji Rajagopalan	2005-06-16 10:45:37.0
Chemical Pesticides, are they needed?	Kennedy, John Samuel	2005-06-16 02:57:00.0
RE: Chemical Pesticides, are they needed?	Kennedy, John Samuel	2005-06-16 05:50:01.0
My serious view	Khaing, Ohnmar	2005-06-16 03:51:28.0
RE: My serious view	Myat, Kaung	2005-06-18 12:08:21.0
How to reduce chemical application frequency?	Khaing, Ohnmar	2005-06-20 05:27:34.0
How to reduce chemical application frequency?	Khaing, Ohnmar	2005-06-20 05:29:27.0
IPM Glossary	Khaing, Ohnmar	2005-06-16 04:14:35.0
Using pesticides in IPM	Vo Thi, Bich Chi	2005-06-18 12:47:27.0

The Windows taskbar at the bottom shows the Start button and several open applications: Windows Live Messenger, Yahoo! Messenger, thesis, Microsoft PowerPoint, thesis write up, and Online Forum - M... The system clock shows 3:57 PM.

Comments from Participants

From a Cambodian participant, “All the learners can give experience to each other and they can share their knowledge from different countries and also can obtain new techniques from eminent instructors.”

From Vietnam, “Have opportunities to know and exchange knowledge other people in other countries who work in the same field.”

A Taiwanese participant employed by AVRDC noted that, “The participants are from different countries in the world. Through the common interests and learning experience, we can know many classmates and share with each other about the similar problems and approaches.”

Status of Agriculture eLearning

- » Most eLearning programs in agriculture currently being undertaken in the world are in the pioneering phase.
- » eLearning in Canadian, European, American and Australian agriculture falls significantly behind the current adoption rates in non-agricultural sectors.

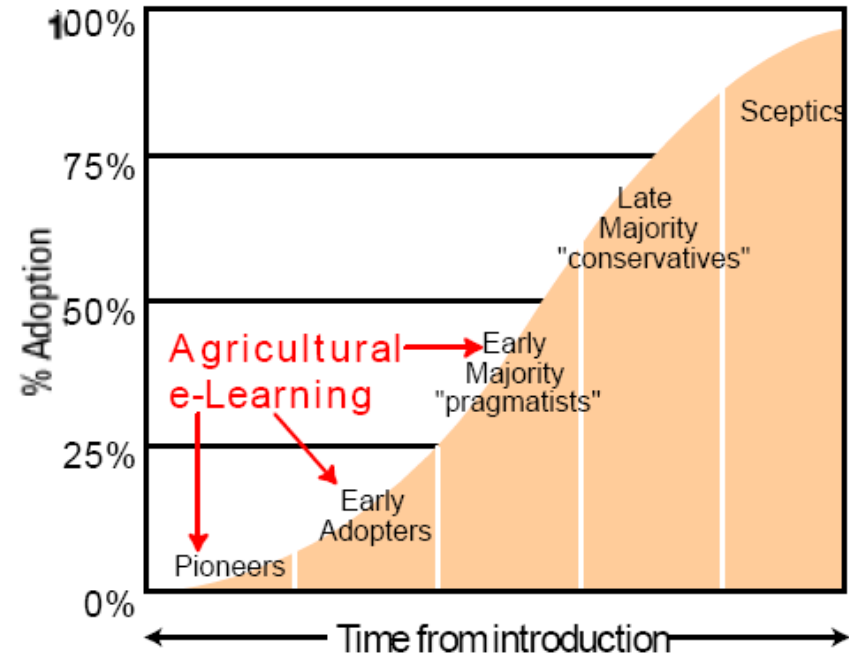
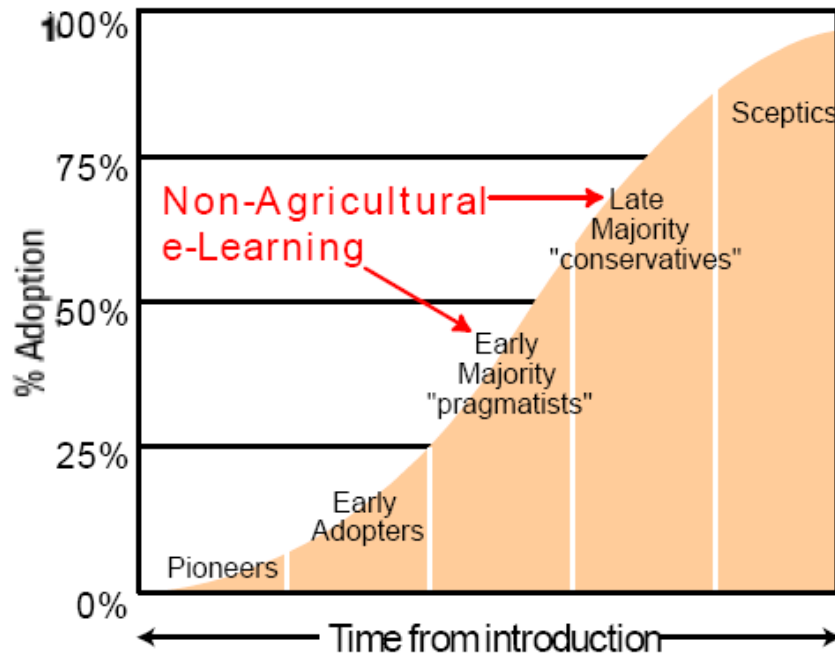
Leary, 2006

Status of Agriculture eLearning

Consider agriculture. A quick Internet search will reveal remarkably few e-Learning opportunities for agricultural professionals. Upon close inspection, you will find very little relevance to agriculture professionals in lesser-developed countries looking for professional development opportunities, or short courses on specific agricultural topics.

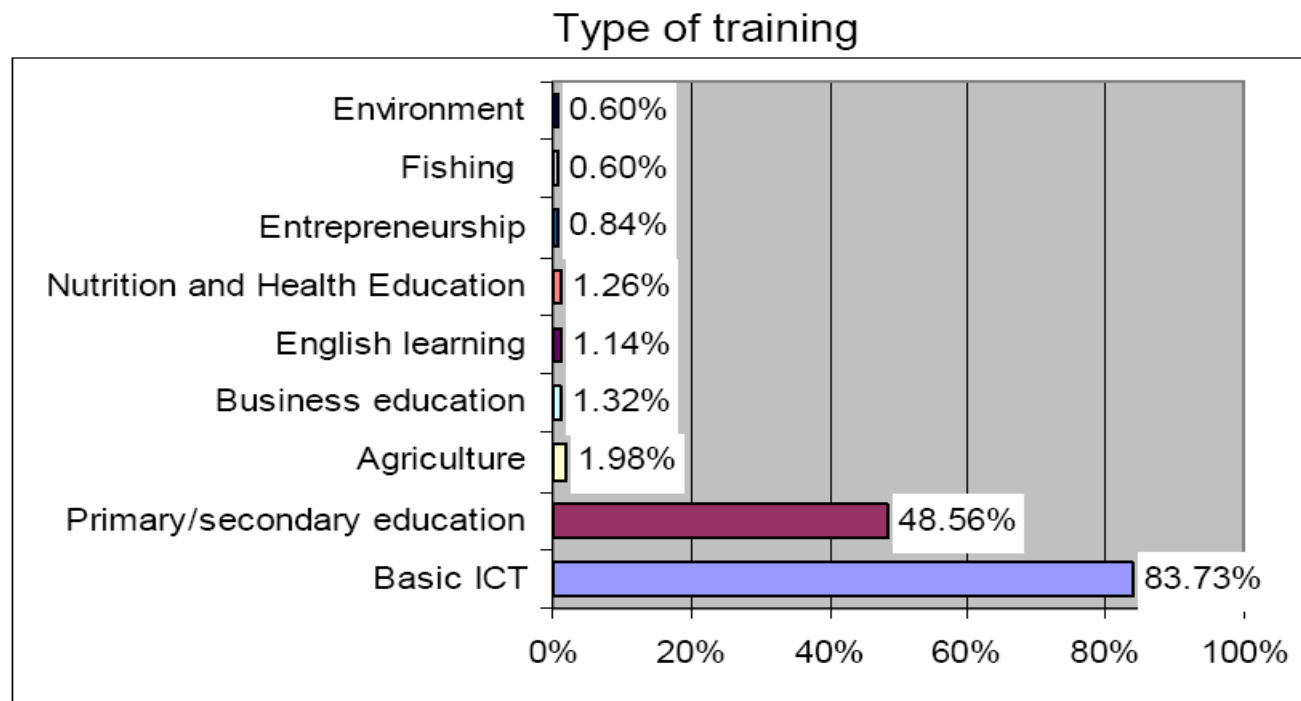
IRRI Knowledge Bank

eLearning Adoption in North America



eLearning in Asia

Analysis of the provision of e-learning



Source: Assessment of the Status of the Community-based e-learning facilities in rural areas, ESCAP, 2007

Survey Respondents

Country	Yes	No	Planning to	Tried	Total
Bangladesh	1				1
Bhutan	1	1	1		3
Cambodia	1	1			2
China	5	1	1		7
India	8	3	1		12
Indonesia	3	1			4
Japan	5				5
Lao PDR		5	1		6
Mongolia		1			1
Nepal	1	3			4
Pakistan	2	2	1	1	6
Philippines	7	3	4		14
Sri Lanka	2		1		3
Taiwan		1		1	2
Thailand	8	3			11
Vietnam	3	2	1		6
Total	47	27	11	2	87

Reasons Identified by adopters

- » Considered to have a relative advantage over other approaches
- » Compatible with existing approaches
- » Cost effectiveness
- » Ability to reach more learners
- » Proven benefits
- » Availability of eLearning content in subject matter of interest
- » High level of available technology and resources in the organization
- » Good organizational support
- » Strong opinion leader and champion for the use of eLearning
- » Seen as being able to meet organizational learning needs
- » Strong interest of teachers/trainers in using eLearning

Reasons Identified by Non-adopters

- » Difficult to implement
- » Not easy to setup a pilot program for testing before roll out
- » High cost of internet access
- » Limited computer and internet skills of target learners
- » Limited computer and internet access of target audience
- » Limited technology infrastructure in the region
- » Limited budget for eLearning activities
- » Limited availability of eLearning content in the local language
- » Limited availability of eLearning content in subject matter of interest

eLearning Uptake

Descriptive Statistics	Share of Training Effort Delivered Through eLearning	Percent of eLearning Activities Focus on Agricultural Topics	Percent of Agriculture eLearning
Min	5	0	0
Max	100	100	75
Average	26.63	49.5	11.47

eLearning Program Implementation

<u>Delivery</u>	Count	%
Purely Online	7	13.21
Blended	43	81.13
Both	3	5.66

<u>Instruction</u>	Count	%
Instructor-led group	15	28.85
Self-study(self-paced)	8	15.38
Self-study with expert help	17	32.69
Combination	12	23.08

<u>Communication</u>	Count	%
Live synchronous	4	8.16
Asynchronous email	34	69.39
Both	11	22.45

<u>Content Development</u>	Count	%
in-house	29	54.72
outsourced	2	3.77
ready-made vendor "off-the-shelf" products	0	0.00
in-house/outsourced	14	26.42
combination of 3	8	15.09

<u>Packaging</u>	Count	%
low - tapes, CD/DVD	5	8.93
mid - tapes, CD/DVD, website	33	58.93
adv - tapes, CD/DVD, website, LMS	18	32.14

<u>Presentation</u>	Count	%
low - PP, Website, Interactive quizzes	27	48.21
mid - Website, Interactive quizzes	16	28.57
adv - website, interactive quiz, simulations	13	23.21

Conclusion

- » eLearning has been shown to be an effective approach in support of agricultural development
- » Adoption of eLearning for Agriculture in Asia is low but interest is high and growing
- » Key elements driving adoption are strong organization support, particularly the presence of a “champion”, and buy-in from management and teachers/trainers
- » Underdeveloped technology infrastructure, limited computer and internet skills, and high access costs are all major barriers to adoption