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APPENDICES

Appendix A. Description of UNESCO ICT in Education Project

UNESCO (2006b) reported the objectives for the *Establishing the Effective Use of ICT in Education for All in Cambodia* project included:

> Formulating a national policy and strategy on the effective use of ICT in education; establishing the ICT in education network among all teachers [sic] colleges in the country; Building ICT capacity for 600 teacher trainers, 50 curriculum specialists and curriculum developers, 2000 primary and secondary school teachers; Establishing the national clearinghouse and promoting the production of local education contents on-line; [and] providing access to ICT in education to thousands of deprived children and youth. (p. 3)

The key results of this project included: facilitated the MoEYS's adoption of the *Policy and Strategy on Information and Communication Technology in Education in Cambodia* (MOEYS, 2004b); distributed the newly adopted national ICT in education policy to key educational institutions throughout the country; conducted numerous ICT trainings for various stakeholders including teacher trainers, secondary school teachers, and MoEYS personnel; facilitated the donation of 838 secondhand PCs from PC4Peace, University of Hong Kong, Christian International University (Tokyo), and the Korean National Commission; purchased 33 new desktop servers; published and printed 1000 copies of *Guidebook on ICT in Teaching and Learning* (UNESCO, 2006c) to be used with teacher trainees; distributed 637 educational DVDs, VCDs, CD-ROMs, and software to 51 educational institutions throughout the country; created the virtual library; built and donated to the MoEYS a mobile learning van equipped with 22 secondhand laptops and one new desktop with Internet connectivity, four digital cameras, one television, one

digital sound recorder, one generator, and a wide range of educational resources. Table A1 details the project objectives as well as results.

Table A1

UNESCO Project Objectives Compared to Results Produced

Project Objective	Results Produced
Formulate a national policy and strategy on the effective use of ICT in education.	• The MoEYS (2004b) adopted and published *Policy and Strategy on Information and Communication Technology in Education in Cambodia.*
Establish the ICT in education network among all TTCs in the country.	• Complete list of trainings detailed in Table A2.
Improve ICT capacity for 600 teacher trainers, 50 curriculum specialists and curriculum developers, and 2000 primary and secondary school teachers.	• Trained 526 teacher trainers. • Trained 28 teachers of English. • Trained teachers in 24 pilot secondary schools. • Facilitated the donation of 838 secondhand laptops and desktops. • Purchased 33 new desktop servers for the TTCs. • Published and printed 1000 copies of *Guidebook on ICT in Teaching and Learning* for teacher trainees (UNESCO, 2006c). Distributed these to 26 TTCs and 24 pilot secondary schools. • Distributed 637 educational DVDs, VCDs, software programs, and CD-ROMs to 51 educational institutions in the country.
Establish the national clearinghouse and promote the production of local education contents online.	• Created the virtual library which hosts more than 1000 web pages. • Trained 25 teacher trainers on how to create their own institutional web page. • Trained 13 teacher trainers on computer maintenance and repair.
Provide access to ICT in education to thousands of deprived children and youth.	• Gave access to 5,030 deprived children via a mobile learning van. The van was equipped with 22 secondhand laptops, one new desktop, Internet connectivity, four digital cameras, one television, one digital sound recorder, one generator, and a wide range of educational resources. • This mobile learning van was donated to the MoEYS on 23 January 2006.

Source: UNESCO (2006b)

Description of Training

Under the *Establishing the Effective Use of ICT in Education for All in Cambodi*a project, UNESCO and the MoEYS conducted various levels of training that reached a variety of stakeholders. The training sessions are detailed in Table A2. The ICT in education project was scaled up by building awareness, by developing master teacher trainers, and finally by increasing institutional capacity at the teacher trainer level while at the same time improving infrastructural carrying capacity. Nine groups of individuals were training under this UNESCO project.

Group 1

UNESCO extended ICT training to 100 TTC representatives in September 2002. One group of 50 people included 14 teaching and non-teaching staff from five teacher training colleges in Phnom Penh and 36 people from departments within the MoEYS. The second group included 50 representatives of various TTCs. This group included directors, deputy directors, and teacher trainers from Takeo RTTC and Takeo PTTC in addition to local school heads in the Takeo area. Both groups attended a four-day training workshop on teaching and learning methodologies in primary schools and a one-day workshop on ICT awareness. The training workshops were intended to create an understanding of ICTs and interactive learning.

It is important to note that Cambodia has 26 teacher training colleges. Six Regional Teacher Training Centers (RTTCs) that trains lower secondary teachers; one National Institute of Education (NIE) that trains upper secondary school teachers; 18 Provincial Teacher Training Colleges (PTTCs) that trains primary school teachers; and one National Pre-School Teacher College which trains pre-school teachers. The country

has two Municipal Teacher Training Colleges (MTTC). The MTTCs also train primary school teachers. The MTTCs are located in Phnom Penh and Sihanoukville. The MTTCs are often referred to as PTTCs. Thus, the MTTCs are included in the count for the 18 PTTCs.

Group 2

UNESCO trained 28 master teacher trainers who attended 96 hours of training in May 2003 on how to use Word, Excel, PowerPoint, the Internet, and web-based email. The training was based on training modules produced by UNESCO (2003). These training modules are discussed in more detail below. A master teacher trainer was chosen from each of the TTCs based on three criteria set by UNESCO: (1) they had to be a teacher trainer; (2) they had to have a good command of the English language; and (3) they had to have a commitment to teaching and learning. The 28 master teacher trainers represented all the teacher training centers in Cambodia. Thus, 18 teacher trainers were from the 18 PTTCs, six teacher trainers were from the six RTTCs, one teacher trainer was from the National Pre-School Training College, and one teacher trainer was from the NIE. The final two master teacher trainers were representatives from the TTD within the MoEYS.

Theoretically, the TTCs were to fill this master teacher trainer role with their best teacher trainer. The researcher however was informed that a small degree of nepotism was present on the part of the TTCs. Of these 28 master teacher trainers, 18 remained in their respective TTC to instruct future teachers and support teacher trainers in ICT-based pedagogy. The ten best master teacher trainers traveled throughout Cambodia and

through a cascade training model became trainers of other teacher trainers in addition to trainers of the pilot upper secondary schools and the pilot lower secondary schools.

Group 3

Through a 5-day hands-on course, UNESCO training 28 teacher trainers on basic website design. This group included: one teacher trainer from each of the 18 PTTCs; one teacher trainer from the six RTTCs; one teacher trainer from the NIE; one teacher trainer from the Pedagogical Research Department; and two teacher trainers from the TTD. Two of these teacher trainers were master teacher trainers. The other teacher trainers were chosen by the directors of the TTCs.

Groups 4 & 5

UNESCO used 26 master teacher trainers to directly train 445 teacher trainers out of 574 teacher trainers in the country. Additionally, the training was extended to 55 administration staff members in various TTCs. There were a total of 439 administrative personnel in the TTCs. Excluding the two TDD master trainers, 526 teacher trainers were trained on ICTs through this project. Thus, 82% of all the teacher trainers in the country were trained on ICTs. This number does not include the 150 teacher trainers at the NIE who were excluded from the training but does include the one master teacher trainer from the NIE who took part in the ICT training. Teacher trainers at the NIE were excluded from this ICT training because the NIE had an effective ICT curriculum in place and therefore NIE teacher trainers were not in need of additional ICT training. The ICT training was also extended to 13 secondary school teachers. Teachers at these secondary schools received the same 96 hours of training as the teacher trainers.

Training for teacher trainers was based on an UNESCO (2003) produced training manual. Based on this training manual, UNESCO (2006c) published a textbook titled *Guidebook on ICT in Teaching and Learning.* UNESCO printed 1000 copies which were disseminated to the 26 TTCs and the 24 pilot secondary schools.

Group 6

UNESCO provided 56 hours of training to 13 teacher trainers on how to repair and maintain computers. This group of 13 included the ten field master trainers in addition to two teacher trainers from the NIE and one person from the TTD of the MoEYS. This training was conducted from December 13-25, 2004.

Group 7

UNESCO trained 28 teacher trainers through a 5-day, hands-on training course on basic website design. Trained through this course were: one teacher trainer was from each of the 18 PTTCs, one teacher trainer from each of the six RTTCs, one teacher trainer from the NIE, one teacher trainer from the Pedagogical Research Department within the MoEYS, and two teacher trainers from the TDD. These 28 teacher trainers were selected by their respective TTC directors. Two of the teacher trainers in this group were master teacher trainers. This training was conducted from June 21, 2004 to June 25, 2004.

Group 8

Trained also were 28 teacher trainers of English. This group included 19 teacher trainers from the six RTTCs and nine teacher trainers of English from the NIE. This group did not contain any master teacher trainers. The goal of this training was to familiarize the English teacher trainers with the concept of using ICTs in their English

language classrooms. The training was provided in partnership with the University Women's Association of Singapore from December 19-23, 2005.

Group 9

The final group trained on ICTs included 24 secondary school teachers. The secondary school teachers were trained by the ten field master teacher trainers. This training was conducted in three phases but was based on the 96-hour training manual used by the master teacher trainers as well as teacher trainers. The first set of teachers included 12 teachers from 12 rural lower secondary schools. This set received 16 days of Phase I and Phase II training in May-June of 2005. The second set of teachers consisted of the six upper secondary school teachers mentioned above from six rural schools and six lower secondary school teachers from six rural schools. These 12 teachers attended seven days of Phase 1 training from May 8-14, 2006. All 24 teachers attended a 5-day refresher course at the end of May 2006. The 18 lower secondary school teachers attended an additional two days of training on survey implementation which immediately followed the 5-day Refresher Phase.

Phase I training involved the integration of ICT skills in teaching and learning and focused on the use of Microsoft Office. Phase II training focused on how to use email and the Internet for teaching and learning in addition to developing ICT-based results indicators. The Refresher Phase involved training on e-communication skills and e-library skills.

Table A2

Summary of ICT Trainings Offered through the UNESCO's ICT in Education Project

Number	Group Name	Group Descriptor	Training Description	Dates
100	TTC represent-atives	Group 1: 14 teaching and non-teaching staff from 5 TTCs and 36 people from relevant MOEYS departments and different schools in Phnom Penh. Group 2: 50 people including directors, deputy directors, and teacher trainers of Takeo regional and provincial teacher training colleges in addition to local school heads.	Four-day workshop focused on learning and teaching methodologies in the primary schools and a one-day workshop intended to raise ICT awareness.	September 9-13, 2002 & September 16-20, 2002
28	Master teacher trainers	Ten master teacher trainers traveled to other institutions training teachers. Eighteen master teacher trainers remained in their institutions training teachers. Master teacher trainers consisted of 18 teacher trainers from the 18 PTTCs, six teacher trainers from the six RTTCs, one teacher trainer from the Preschool Teacher Training College, one teacher trainer from the NIE, and two representatives from the TTD.	Attended 96 hours of how to use Word, Excel, PowerPoint, the Internet, and email. Training conducted in three phases.	Phase 1: May 5-9, 2003 Phase 2: May 12-16, 2003 Phase 3: May 28-30, 2003
28	Teacher trainers	One teacher trainer from each of the 18 PTTCs, one teacher trainer from the six RTTCs, one teacher trainer from the NIE, one teacher trainer from the Pedagogical Research Department, and two teacher trainers from the TTD. Two teacher trainers	Attended a 5-day hands-on training course on basic website design. Manuals were created in Khmer and English.	June 21-25, 2004

		were master teacher trainers. The other teacher trainers were chosen by the directors of the TTCs.		
445	Teacher trainers	The country has a total of 574 teacher trainers from 18 PTTCs, 6 RTTCs, and one national preschool training college.	Attended 96 hours of how to use Word, Excel, PowerPoint, the Internet, and email. Teacher trainers were also given a brief introduction into ICT-based pedagogy.	June 2004 through November 2005
55	Non-teaching teacher trainers	Cambodia has a total of 439 non-teaching teacher trainers from 18 PTTCs, six RTTCs, and one national preschool training college.	Attended 96 hours of how to use Word, Excel, PowerPoint, the Internet, and email. Teacher trainers were also given a brief introduction into ICT-based pedagogy.	June 2004 through November 2005
13	Teacher trainers	This group included the ten field master trainers (six from the RTTCs and four from the PTTCs), two from National Institute of Education, and one from the Teacher Training Department of the MoEYS.	Attended 56 hours of training on how to repair and maintain computers.	December 13-25, 2004
28	Teachers of English	19 teachers of English from the six RTTC and nine teachers of English from the NIE. This is a unique set of teachers different from the 28 master trainers.	Attended a 5-day workshop consisting of ten 3-hour sessions intended to familiarize participants with rationale and use of ICT in teaching English.	December 19-23, 2005
6	Teachers from upper secondary school teachers in six rural schools	One teacher from each of the six schools upper secondary schools.	Attended 7 days of training. Phase 1 involved the integration of ICT skills in teaching and learning involving how to use Microsoft Office. Attended 5-day	May 8-14, 2006 End of May 2006

			Refresher Phase. Also attended 2 days of survey implementation.	
18	Teachers from lower secondary school teachers in 18 rural schools	One teacher from each of the 18 lower secondary schools.	Phase 1 & Phase 2: 12 teachers attended 16 days of training conducted in two sessions. Phase 1 involved the integration of ICT skills in teaching and learning focusing on the use of Microsoft Office. Phase 2 focused on how to use email and the Internet for teaching and learning in addition to developing ICT based results.	May-June, 2005
			6 teachers attended Phase 1 training.	May 8-14, 2006
			Refresher Phase: All 18 teachers attended five days of training. Training involved e-communication skills and e-library skills. Two additional days of this training involved survey implementation.	End of May 2006

Content of ICT Training

The ICT training for the master teacher trainers, the teacher trainers, and the 12 secondary school teachers was based on a two volume set of training manuals produced and published by UNESCO (2003). Volume one consists of seven chapters. The first volume of the training manual includes basic skills, word processing, spreadsheets, graphics, presentation software, the Internet, and computer troubleshooting. Volume two

consists of ten chapters. The second volume includes topics on advanced word processing skills, advanced spreadsheet skills, email, Power Point, and troubleshooting. Table A3 details each chapter.

Table A3

Description of Training Received by Master Teacher Trainers and Teacher Trainers According to the Two-Volume Training Manual Produced by UNESCO (2003)

Volume - Chapter	Description of topic covered
I-1	• Hardware such as monitor, keyboard, mouse, system unit, peripherals • Function keys, hard disk, floppy disk, circuit board, memory, DOS, operating systems • Software – productivity software; graphic and multimedia software; home, personal, and educational software; communication software; application software
I-2	• Microsoft Windows • Topics include the desktop icons (e.g., My computer; My documents; Outlook; Internet Explorer, Recycle Bin) • Task bar, mouse pointer, and start menu • Pinning shortcuts to desktop • Understanding parts of a window – title bar, restore button, minimize button, maximize button, close button • Saving work and file management – creating and using folders, save as, renaming files and folders, moving folders and files, left click options
I-3	• Word Processing using Word 97 • Formatting a worksheet • Formatting text – size, font, bold, italics, underline, bullets • Cut, copy, paste, edit-select all, drop and drag • Formatting columns • Clip art, text boxes, picture toolbar, formatting pictures, line color, fill color • Tables – cells, merge cells, adding rows and columns, adjust size, formatting, cell alignment
I-4	• Spreadsheets using Excel 97 • Cells, grids, reference cell, using formulas and operators • Adjusting columns and rows, fill color, adding borders, changing text worries, borders, whatif, sum, average, counta, countif, conditional formatting • Pictographs

I-5	• PowerPoint 2000 • Templates, design, title slide, inserting new slide, adding pictures, custom animation, views, panes, hyperlinks • Printing as slides, slides and notes, handouts, or outline view • Exporting to Word
I-6	• The Internet • PC versus Mac • RAM, modem, Internet Service Provider (ISP), Points of Presence (POP), wide area network (WAN) • Digital signal versus analogue signal • World Wide Web, browsers, web pages, hypertext links • Web browser parts – title bar, menu bar, toolbar buttons, address bar, Universal Resource Locator (URL), page window, task bar, status bar, links • Search engines, page loading, printing pages • Copying and pasting web pages and web images (GIF, JPEG, PNG) into Word, saving and editing images • Signing up for a Yahoo email account – sign in, Yahoo ID, password, checking email
I-7	• Troubleshooting computer equipment • Topics include- mouse not working, CD-ROM errors, using CTRL+ALT+DEL, printer not working, using antivirus software, floppy disks not working
II-1	• Advanced Word 97 • Autotext, AutoComplete
II-2	• Advanced Excel 97 • Autofilters • Ranking, conditional formatting, COUNTIF, COUNTBLANK • Creating charts, chart wizard, drawing tools
II-3	• Using email: Inbox, outbox, sent items, drafts, deleted items • Attach and open documents • Carbon copy(cc), to, blind carbon copy (bcc), subject lines, composing, replying • Managing folders, deleting items
II-4	• Typography • Fonts, brush, capital letters, text body • In Excel – centering cells, gridlines
II-5	• Using Excel database feature
II-6	• PowerPoint 2000 • Sounds effects, recording sound, action settings • Downloading free sounds from the Internet
II-7	• Creating forms in Word • Creating drop down form fields • Locking form fields

II-8	• General ICT for teaching and learning overview • Word processing, composing graphical presentations, computers and communication, spreadsheets, databases, networking, robots, graphic calculators, statistical software, dot.com, input and output devices
II-9	• Using ICT in math and geometry • Using Excel charts and formulas in lessons • Useful websites such as www.population.com , www.census.gov , www.globaleye.org.uk
II-10	• Troubleshooting • Issues include mouse, keyboard, managing templates, macros, using virus scan, scandisk, customizing tools options, setting margins, managing power options • Overview of online security tips from Yahoo!

Source: UNESCO (2003)

United Nations Educational, Scientific and Cultural Organization

INTERNSHIP AGREEMENT WITH UNESCO

1. I accept the internship, which has been awarded to me by UNESCO, under following terms:

   a. UNESCO will not pay me for my internship; all the expenses connected with it will be borne by me or my sponsoring Government or institution;

   b. I understand that UNESCO accepts no responsibility for the medical insurance of the intern or for the costs arising for accidents and illness incurred during an internship and that I am responsible for arranging, at my expense, such life, health and other forms of insurance coverage covering the period of internship at UNESCO;

   c. I note that UNESCO may provide a limited insurance coverage - which may be subject to change – for risk of injury, illness, disability or death incurred during the period of the internship, and which may be attributable to the execution of the internship under this Agreement;

   Therefore, I do not request an insurance coverage ☒
   Therefore, I request a limited insurance coverage ☐

   d. I shall submit a certificate of good health;

   e. I am personally responsible for obtaining necessary visas and arranging my travel to and from the duty station where the internship will be performed.

2. I undertake the following obligations with respect to the UNESCO internship programme:

   a. To observe all applicable rules, regulations, policies, procedures and directives of the Organization;

   b. To refrain from any conduct that would adversely reflect on UNESCO or on the receiving Sector/Bureau/Field Office and will not engage in any activity that is incompatible with the aims and objectives of UNESCO;

   c. To respect the reserve, integrity, impartiality and independence required of interns at UNESCO and shall not seek or accept instructions regarding the services performed, from any Government or from any authority external to UNESCO;

   d. To keep confidential any unpublished information made known to me by reason of my internship, and except with the explicit authorization of UNESCO, not to publish any reports or papers on the basis of information obtained during the programme, both during and after the completion of my internship;

   e. To provide the receiving Sector/Bureau/Field Office with a copy of all materials prepared during my internship;

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f. To provide immediate written notice in case of illness or other circumstances which might prevent me from completing the internship;

g. To return my identification card to the service concerned at the duty station;

h. All rights, including title to property, copyright and patent, in any work produced by the intern during his/her internship, shall be vested in UNESCO, which alone shall hold all rights of use.

i. With the exception where then Intern uses the acquired information and data for preparing his/her dissertation.

3. In recognition that this internship is being undertaken in conjunction with the preparation of a doctoral dissertation, Mr. Richardson will be allowed to collect and use data relevant to ICT use in Cambodia, with the understanding that (a) he will share the results with UNESCO (b) he would be willing to write a short summary for the UNESCO newsletter (c) he will share the results with the Ministry of Education, Youth and Sport;

4. I have read the attached terms of reference of my internship and I accept to abide by them.

20 April 06	Jayson RICHARDSON	
Date	Name of intern	Signature
20 April 2006	Teruo JINNAI	
Date	Name of manager	Signature

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Internship of Mr/Ms.....**Jayson Richardson**.....in UNESCO

Terms of Reference

Duty Station	**UNESCO Phnom Penh**
Sector/Bureau	**EDUCATION**
Division/ Section/ Unit	**EDUCATION UNIT**
Supervisor (name/title)	**Supote Praserтsri, Ph. D.** **Education Programme Specialist**
Starting/end dates of the internship	**01 June 2006 / 31 August 2006**

Assignment

Within the Dakar Framework on Education for All (2000 - 2015) and the framework of the Project on "Establishing the Effective Use of ICT in EFA in Cambodia" and under an overall authority of the UNESCO Representative to Cambodia and under the direct supervision and guidance of the Education Programme Specialist, the Intern shall:

1. identify and compile useful educational websites and learning contents and open software of various subject areas (math, science, civics, geography, history, arts, technology, life skills etc...) for use by teacher training institutions and secondary schools;

2. work with the Teacher Training Department, ASEAN Affairs and Information Department of MoEYS, and relevant agencies in building capacities for ICT in education staff and partners in developing web-based contents, especially the contents appropriate for each locality in Cambodia, through participatory approach with interested students, writers, lecturers and teachers;

3. take part with the ICT in Education Project and the national team at various teacher training colleges in conducting training workshops and a survey on an overall status of ICT in private and community education resources in Cambodia; and

4. perform other functions as may be assigned by the Head of Education Programme, UNESCO Phnom Penh.

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Appendix C. Consent Form

Factors of Teacher Trainers' Decision of UNESCO Technology Training

Background information

You were asked to be in this study because you are a teacher trainer participating in the UNESCO "Establishing the Effective use of ICT for Education for All in Cambodia" project. The purpose of this study is to understand how teacher trainers adopt the ICT training to their classrooms. This study is being conducted by Mr. Jayson Richardson, a doctoral student at the University of Minnesota, in the United States.

Procedures

You will be asked to participate in one (1) 60-minute interviews. A Khmer translator will be present. Additionally, if you agree to participate, the researcher may observe your classroom one (1) time. The observation is completely voluntary. The interviews and observations will focus on the factors involved in adopting the technology training.

Risks of being in the study

The study has minimal risks but, if at any time you feel uncomfortable, you may refuse to answer any question and/or may stop participating in the study.

Confidentiality

The records of this study will be confidential. In any sort of report I might publish, I will not include any information that will make it possible to identify you without your written permission. Your responses to the questions will be anonymous. All materials will be destroyed when the study is finished.

Voluntary nature of the study

Your decision whether or not to participate will not affect your current or future relations with the University of Minnesota. If you decide to participate, you are free to withdraw at any time.

Contacts and questions

If you have any questions about this study, please contact Mr. Jayson Richardson (rich0687@umn.edu) on 011.612.372.5070 or his university advisor Dr. Gerald Fry (gwf@umn.edu) on 011.612.624.0294 or the UNESCO supervisor Dr. Supote Prasertsri (s.prasertsri@unesco.org) on +66 2 391 0511.

If you have any questions or concerns regarding the study and would like to talk to someone other than the researchers, please contact the University of Minnesota Research Subjects Advocate line, D528 Mayo, 420 Delaware Street SE, Minneapolis, MN 55455, 011.612.628.1650.

You may keep a copy for your records.

University of Minnesota Human Subjects Permission # 0604E85337

Appendix D. Survey Return Rates by TTC

Teacher Training College	Number of Teacher Trainers	Number of Surveys	Return Rates
Banteay Meanchey PTTC	11	7	63.6%
Battambang PTTC	19	17	89.5%
Battambang RTTC	28	20	71.4%
Kampong Cham PTTC	29	19	65.5%
Kampong Cham RTTC	37	17	45.9%
Kampong Chhnang PTTC	18	9	50.0%
Kampong Speu PTTC	20	16	80.0%
Kampong Thom PTTC	18	15	83.3%
Kampot PTTC	23	19	82.6%
Kandal PTTC	24	21	87.5%
Kandal RTTC	36	29	80.6%
Kratie PTTC	10	8	80.0%
National Pre-School Teacher	2	1	50.0%
Phnom Penh MTTC (PTTC)	22	13*	59.1%
Phnom Penh RTTC	33	18	54.5%
Preah Vihear PTTC	10	8	90.0%
Prey Veng PTTC	21	19	90.5%
Prey Veng RTTC	24	11	45.8%
Pursat PTTC	19	13	68.4%
Siem Riep PTTC	21	21	100.0%
Sihanoukville MTTC (PTTC)	16	13	81.3%
Steung Treng PTTC	14	9	64.3%
Svay Rieng PTTC	23	18	78.3%
Takeo PTTC	18	16	88.9%
Takeo RTTC	29	21	72.4%
National Institute of Education	1	1	100.0%
Total Teacher Trainers Trained:	526	379	72.2%

* Master trainer did not return survey

Appendix E. English Version of Survey

	VOLUNTARINESS	Strongly Disagree	Disagree	Agree	Strongly Agree
1	My boss does not require me to use the ICT skills.	o	o	o	o
2.	Although it might be helpful, using the ICT skills is not mandatory in my job.	o	o	o	o
	RELATIVE ADVANTAGE	Strongly Disagree	Disagree	Agree	Strongly Agree
3	Using the ICT skills enables me to accomplish tasks more quickly.	o	o	o	o
4	Using the ICT skills improves the quality of work I do.	o	o	o	o
5	Using the ICT skills makes it easier to do my job.	o	o	o	o
6	Using the ICT skills enhances my effectiveness on the job.	o	o	o	o
7	Using the ICT skills gives me greater control over my work.	o	o	o	o
	RELATIVE ADVANTAGE (IMAGE)	Strongly Disagree	Disagree	Agree	Strongly Agree
8	People in my teacher training college who use ICT skills have more prestige than those who do not.	o	o	o	o
9	People in my teacher training college who use ICT skills have a high profile.	o	o	o	o
10	Having ICT skills is a status symbol in my teacher training college.	o	o	o	o
	COMPATIBILITY	Strongly Disagree	Disagree	Agree	Strongly Agree
11	Using the ICT skills is compatible with all aspects of my work.	o	o	o	o
12	I think that using the ICT skills fits well with the way I like to work.	o	o	o	o
13	Using the ICT skills fits into my work style.	o	o	o	o
	COMPLEXITY (EASE OF USE)	Strongly Disagree	Disagree	Agree	Strongly Agree
14	Using my ICT skills is clear and understandable.	o	o	o	o
15	I believe that it is easy to do things with my ICT skills.	o	o	o	o
16	Overall, I believe that using the ICT skills is easy for me.	o	o	o	o
17	Learning to use the ICT skills is easy for me.	o	o	o	o
	OBSERVABILITY (RESULT DEMONSTRATABILIY)	Strongly Disagree	Disagree	Agree	Strongly Agree
18	I would have no difficulty telling others about the results of using the ICT skills.	o	o	o	o

19	I believe I could communicate to others the consequences of using my ICT skills	o	o	o	o
20	The results of using the ICT skills are apparent to me.	o	o	o	o
21	I would have no difficulty explaining why using ICT skills may or may not be beneficial.	o	o	o	o
	OBSERVABILITY (VISIBILITY)	Strongly Disagree	Disagree	Agree	Strongly Agree
22	I have seen other teacher trainers using the ICT skills I gained.	o	o	o	o
23	People who use ICT skills are not very visable in my teacher training college.	o	o	o	o
	TRIALABILITY	Strongly Disagree	Disagree	Agree	Strongly Agree
24	Before deciding whether to use the ICT skills, I was able to properly try them out.	o	o	o	o
25	I was permitted to use my ICT skills on a trial basis long enough to see what I could do.	o	o	o	o
	BEHAVIOR	Strongly Disagree	Disagree	Agree	Strongly Agree
26	I use all of the skills I gained from the ICT training.	o	o	o	o
27	I use some of the skills I gained from the ICT training.	o	o	o	o
28	I never used any of the skills I gained from the ICT training.	o	o	o	o
29	I began to use the skills I gained from the ICT training, but now I do not.	o	o	o	o
30	I use the skills I gained from the ICT differently than I did in the training.	o	o	o	o
	ATTITUDES	Strongly Disagree	Disagree	Agree	Strongly Agree
31	Using ICT is a useful secondary school teacher strategy.	o	o	o	o
32	Using ICT is a useful teacher training strategy.	o	o	o	o
33	I like using ICTs in my teacher training.	o	o	o	o
34	Secondary school teachers like using ICTs in their classrooms.	o	o	o	o
35	Other teacher trainers like using ICTs in their classrooms.	o	o	o	o
	DEMOGRAPHICS				
36	What is the name of your TTC?				
37	Type of TTC	Primary o		Secondary o	
38	TTC location	Urban o	Suburban o	Rural o	
39	How many years have you been teaching?				
40	What level of school did you finish?				

41 If you had pedagogy training, where?

42	What is your gender?	Male o	Female o
43	How old are you?		
44	What is your ethnicity?		
45	When did you receive the UNESCO ICT training?		

(1) Please describe in detail an experience when you felt you have used the ICT skills successfully.

(2) Please describe in detail an experience when you have not been successful using the ICT skills.

Appendix F. Khmer Version of Survey

	ការឥទ្ធិពលមិត្ត:	មិនយល់ស្រប ទាំងស្រុង	មិនយល់ស្រប	យល់ស្រប	យល់ស្រប ទាំងស្រុង
១.	ប្រពន្ធខ្ញុំមិនចង់អោយខ្ញុំ ប្រើជំនាញ ICT ទេ	O	O	O	O
២.	ទោះបីជាជំនាញ ICT នេះ អាចជួយ សំរួលក្នុងការងារយ៉ាងលោតផ្លោះក៏ដោយការប្រើប្រាស់ ជំនាញ ICT នេះមិនមែនជាប្រការ ចាំបាច់ក្នុងការងារខ្ញុំដែរ	O	O	O	O
	គុណសម្បត្តិទាក់ទិន:	មិនយល់ស្រប ទាំងស្រុង	មិនយល់ស្រប	យល់ស្រប	យល់ស្រប ទាំងស្រុង
៣.	ការប្រើប្រាស់ជំនាញ ICT នេះជួយ ខ្ញុំ អោយបំពេញការងារបានលឿនជាងមុន	O	O	O	O
៤.	ការប្រើប្រាស់ជំនាញ ICT បង្កើនគុណភាពការងាររបស់ខ្ញុំ	O	O	O	O
៥.	ការប្រើប្រាស់ជំនាញ ICT បង្ករ ងាយស្រួលអោយការងាររបស់ខ្ញុំ	O	O	O	O
៦.	ការប្រើប្រាស់ជំនាញ ICT បង្កើន ប្រសិទ្ធិភាពការងាររបស់ខ្ញុំ	O	O	O	O
៧.	ការប្រើប្រាស់ជំនាញ ICT ធ្វើអោយ ខ្ញុំត្រួតពិនិត្យការងារបានប្រសើរជាងមុន	O	O	O	O
	គុណសម្បត្តិដែលទាក់ទង (បន្ត) :	មិនយល់ស្រប ទាំងស្រុង	មិនយល់ស្រប	យល់ស្រប	យល់ស្រប ទាំងស្រុង
៨	អស់លោក-លោកស្រីក្នុងស្ថាប័ន គ្រឹះស្ថានដែលប្រើប្រាស់ជំនាញ ICT មានកិត្តិយសជាងអស់លោក-លោកស្រី ដែលមិនចេះ	O	O	O	O
៩.	អស់លោក-លោកស្រីក្នុងស្ថាប័ន គ្រឹះស្ថានដែលប្រើប្រាស់ ជំនាញ ICT មានប្រជាប្រិយភាពខ្ពស់	O	O	O	O
១០.	មានជំនាញ ICT គឺជានិមិត្តរូបលេចធ្លោឡើង នៅក្នុងស្ថាប័នគ្រឹះស្ថានរបស់ខ្ញុំ	O	O	O	O
	ភាពត្រូវគ្នា-ស៊ីសង្វាក់:	មិនយល់ស្រប ទាំងស្រុង	មិនយល់ស្រប	យល់ស្រប	យល់ស្រប ទាំងស្រុង
១១.	ការប្រើប្រាស់ជំនាញ ICT ស៊ីសង្វាក់ស្រប ជាមួយគ្រប់ទិដ្ឋភាពការងាររបស់ខ្ញុំ	O	O	O	O
១២.	ខ្ញុំគិតថាការប្រើប្រាស់ជំនាញ ICT ត្រូវសមស្របជាមួយនិងរបៀបដែលខ្ញុំធ្វើការ	O	O	O	O
១៣.	ការប្រើប្រាស់ជំនាញ ICT ត្រូវគ្នានឹង របៀបធ្វើការរបស់ខ្ញុំ	O	O	O	O
	ភាពងាយស្រួលប្រើប្រាស់	មិនយល់ស្រប ទាំងស្រុង	មិនយល់ស្រប	យល់ស្រប	យល់ស្រប ទាំងស្រុង
១៤.	ខ្ញុំយល់ច្បាស់ពីការប្រើប្រាស់ ជំនាញ ICT	O	O	O	O

	ទទួលបានពីវគ្គបណ្តុះបណ្តាល ICTទេ				
២៩.	ខ្ញុំធ្លាប់ធ្វើការប្រើប្រាស់ជំនាញ ដែលខ្ញុំទទួលបានពីវគ្គបណ្តុះបណ្តាល ICT ក៏ប៉ុន្តែឥឡូវខ្ញុំមិនប្រើទេ	O	O	O	O
៣០.	ខ្ញុំប្រើជំនាញ ICT ផ្សេងទៀតពីអ្វី ដែលខ្ញុំទទួលបានពីវគ្គបណ្តុះបណ្តាល	O	O	O	O
	ទស្សនៈ:	**មិនយល់ស្រប ទាំងស្រុង**	**មិនយល់ស្រប**	**យល់ស្រប**	**យល់ស្រប ទាំងស្រុង**
៣១.	.ការប្រើប្រាស់ ICT គឺជាយុទ្ធសាស្ត្រមានប្រយោជន៍មួយ សំរាប់គ្រូបង្រៀននៅក្នុងមហាវិទ្យា	O	O	O	O
៣២.	ការប្រើប្រាស់ជំនាញ ICT គឺជាយុទ្ធសាស្ត្រ មានប្រយោជន៍សំរាប់បណ្តុះបណ្តាល គ្រូបង្រៀន	O	O	O	O
៣៣.	ខ្ញុំចូលចិត្តប្រើជំនាញ ICT ក្នុង ការបណ្តុះបណ្តាលបន្ថែម	O	O	O	O
៣៤.	គ្រូកំពុងសិក្សាចូលចិត្តប្រើជំនាញ ICT នៅពេលបញ្ចប់រៀនរបស់ខ្លួន	O	O	O	O
៣៥.	គ្រូឧទ្ទេសផ្សេងទៀតចូលចិត្តប្រើជំនាញ ICT នៅពេលបញ្ចប់រៀនរបស់ខ្លួន	O	O	O	O

ព័ត៌មានប្រជាសាស្ត្រ:

៣៦. តើឈ្មោះមហាវិទ្យាល័យរបស់អ្នកឈ្មោះអ្វី?

		បឋមសិក្សា		**មធ្យមសិក្សា**
៣៧.	ប្រភេទមហាវិទ្យាល័យបណ្តុះបណ្តាលគ្រូបង្រៀន	O		O

		ទីក្រុង	**ជាយក្រុង**	**ជនបទ**
៣៨.	ទីតាំងមហាវិទ្យាល័យ	O	O	O

តើអ្នកបានធ្វើជាគ្រូបង្រៀនប៉ុន្មានឆ្នាំហើយ?

៣៩.

តើអ្នកបញ្ចប់ការសិក្សានៅពេលណា?

៤០.

ប្រសិនបើអ្នកបានឆ្លងកាត់ការបណ្តុះបណ្តាលមហាវិទ្យាល័យ

៤១. តើអ្នកទទួលការបណ្តុះបណ្តាលនៅពេលណា?

		ប្រុស	**ស្រី**
៤២.	តើអ្នកជាបុរសឬស្ត្រី?	O	O

៤៣. តើអ្នកមានអាយុប៉ុន្មាន?

៤៤. តើអ្នកមានសញ្ញាប័ត្រអ្វី?

តើអ្នកបានទទួលការបណ្តុះបណ្តាល

ជំនាញ ICT ពីស្ថាប័នណាមួយដែរឬទេ?

៤៥.

(១) សូចនាលំអិតអំពីបទពិសោធន៍ជោគជ័យចំពុះចូលក្នុងការប្រើប្រាស់ចំនាញ ICT

(២) សូចនាលំអិតអំពីបទពិសោធន៍ចរាជ័យចូលក្នុងការប្រើប្រាស់ចំនាញ ICT

Appendix G. Interview Questions

Demographics:

- How many years have you been teaching?
- What level of school did you finish?
- If you had pedagogy training, where?
- What subject do you teach?
- How old are you?

Relative Advantage

- What advantages are there to using the ICT skills?

Compatibility

- What do you like about using the ICT skills you gained in the training? What don't you like?
- Is the ICT training completely compatible with the resources you have?

Voluntariness

- Do you feel pressure to use the ICT skills?

Ease of Use

- On a scale from 1-10 (one being easy and 10 being impossible), how hard is it to use these ICT skills? Explain.

Trialability

- Were you able to practice using the ICT skills before you were asked to you used them in your classes at your TTC?
- Today, do you have enough time to practice our ICT skills? Where?
- Do you get to choose whether or not you use the ICT skills in your teacher training?
- Do you feel pressure to use the ICT skills? Explain.

Visibility / Results Demonstratability

- Have you seen others in your TTC using the ICT skills you gained?
- Would you have difficulty telling others the advantages and disadvantages of using the ICT skills you gained?
- What benefits are there to using these ICT skills?

Behaviors

- How much of the ICT training do you currently use? Rate 0% - 100%
- How much to the ICT training do use, but it is not exactly what you were taught? Rate 0% - 100%
- How much of the ICT training did you begin to use, but now do not use? Rate 0% - 100%
- How much of the ICT training did you never use? Rate 0% - 100%

Attitudes

- In your opinion, are ICT skills useful for teachers? Why?
- In your opinion, is ICT a useful teacher training strategy? Why?

Appendix H. Rationale for Using Listwise Deletion of Data

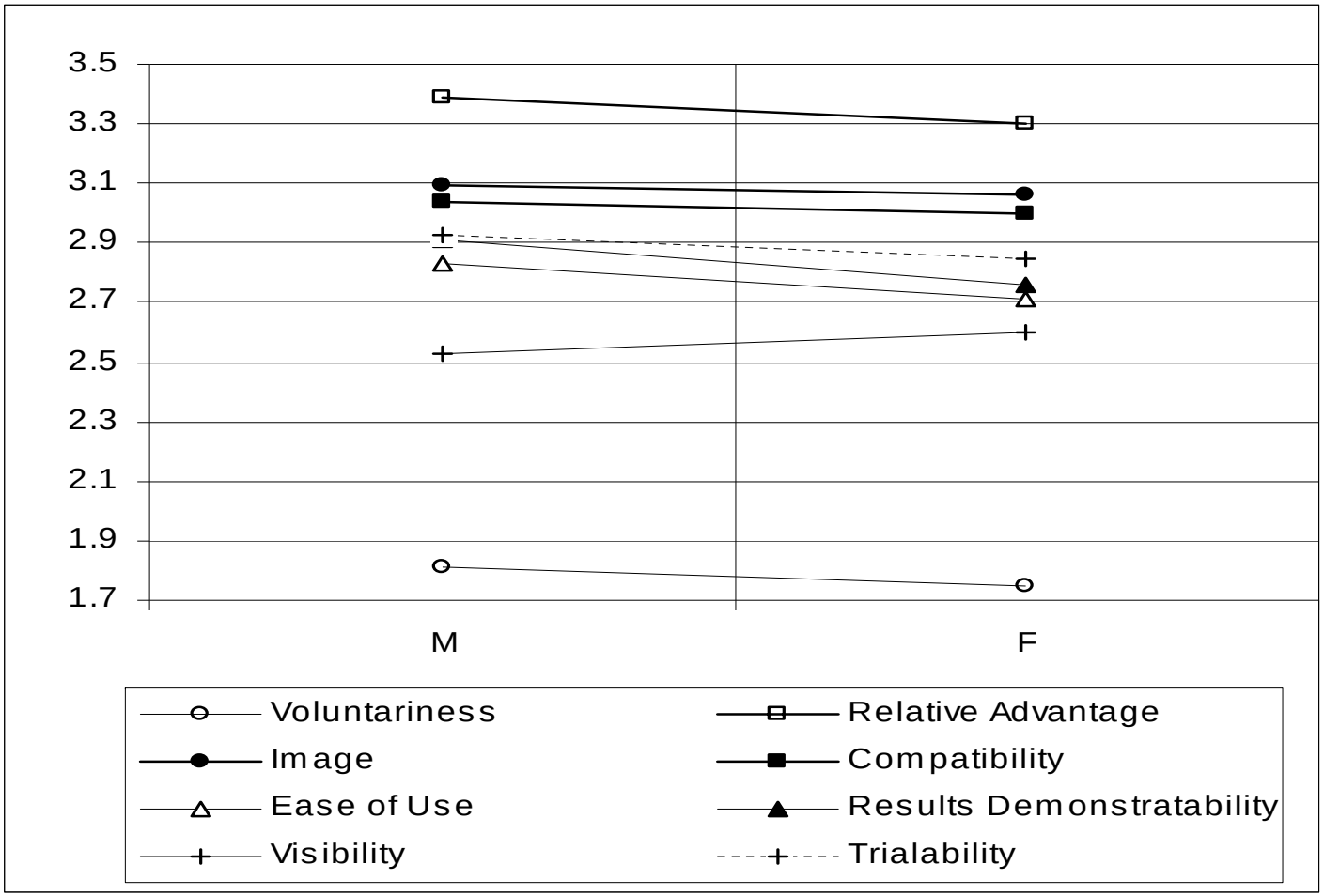
The means of the PCIs were computed using both listwise and pairwise deletions to see if the results would be different due to the methods of handling the missing data. Using a listwise deletion did not change composite mean scores but altered the standard deviation by at most .01 with the PCIs of visibility and ease of use. Additionally, the distribution of values plotted both listwise and pairwise was relatively normal.

Correlations were computed pairwise and listwise to explore if the listwise deletion impacted the strength of the relationship between independent variables. Correlations were not significantly strengthened or weakened using either method of dealing with missing data. The correlations using pairwise deletion ranged from .036 to .678 with the greatest change between this method and the listwise deletion was found to be .016 between both sets of the variables of: trialability and visibility; and compatibility and visibility.

Appendix I. Means of PCIs Compared by Gender

Gender	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
Male	243	Mean	1.81	3.39	3.09	3.04	2.83	2.91	2.53	2.93
		SD	.62	.46	.54	.55	.61	.56	.49	.51
Female	101	Mean	1.75	3.30	3.06	3.00	2.71	2.76	2.60	2.85
		SD	.62	.43	.56	.54	.70	.66	.49	.60

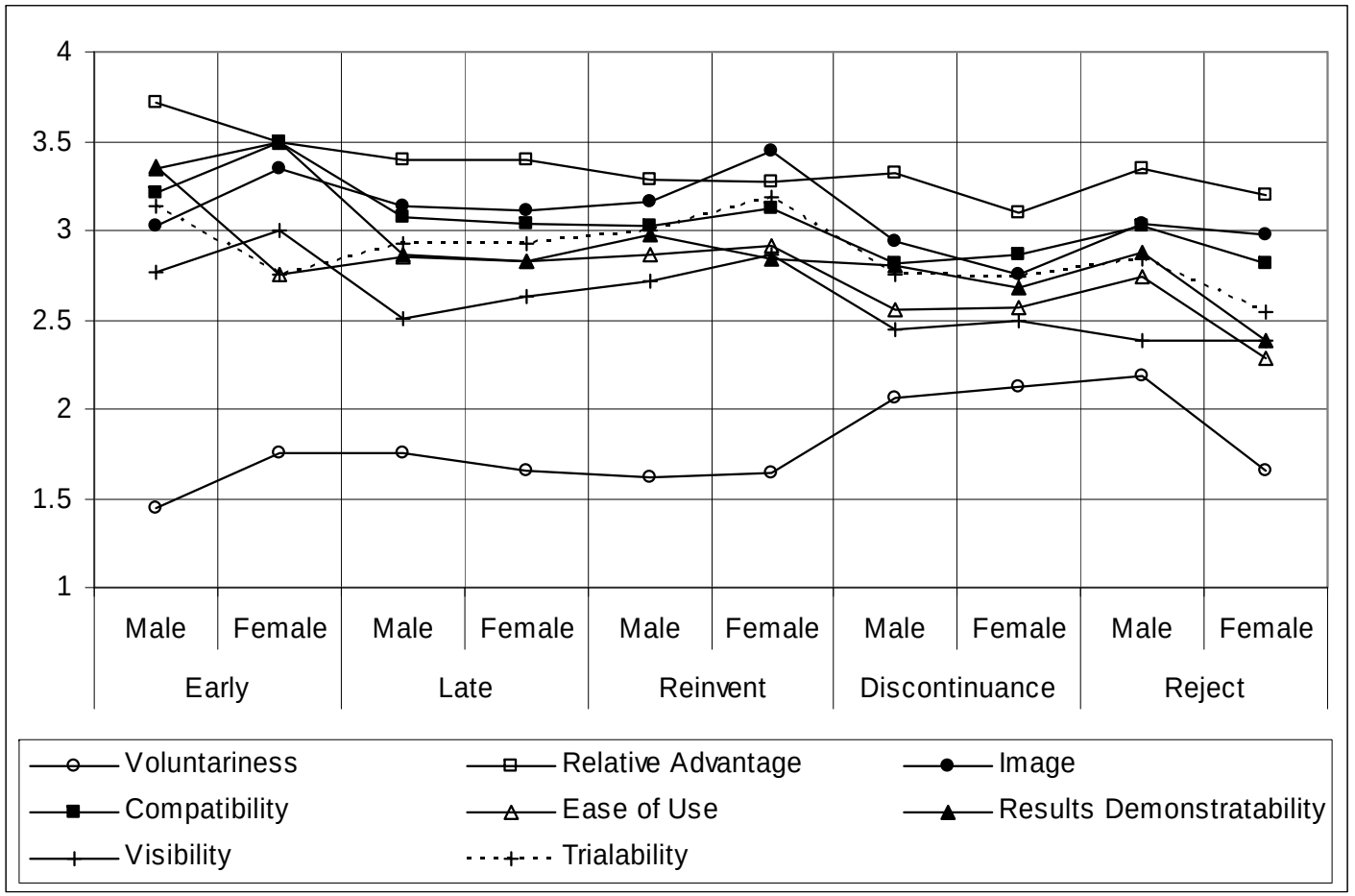
Appendix J: Graph of Means of PCIs Compared by Gender



Appendix K. Means of PCIs Compared by Gender and Decision Category

Decision Category	Gender	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
Early	Male	19	Mean	1.45	3.71	3.02	3.21	3.36	3.34	2.76	3.13
			SD	.50	.36	.50	.49	.54	.47	.48	.52
	Female	2	Mean	1.75	3.50	3.34	3.50	2.75	3.50	3.00	2.75
			SD	.35	.71	.94	.71	.71	.71	.71	.35
Late	Male	123	Mean	1.75	3.40	3.14	3.08	2.85	2.87	2.51	2.93
			SD	.51	.44	.58	.54	.56	.56	.43	.41
	Female	54	Mean	1.65	3.39	3.11	3.04	2.83	2.83	2.63	2.92
			SD	.58	.45	.53	.55	.67	.66	.45	.49
Reinvent	Male	33	Mean	1.62	3.29	3.16	3.03	2.87	2.98	2.71	3.00
			SD	.66	.51	.59	.64	.61	.59	.61	.76
	Female	11	Mean	1.64	3.27	3.45	3.12	2.91	2.84	2.86	3.18
			SD	.81	.60	.64	.62	.65	.75	.64	.90
Discontinuance	Male	34	Mean	2.06	3.32	2.94	2.81	2.56	2.80	2.44	2.75
			SD	.62	.41	.38	.51	.62	.41	.42	.43
	Female	21	Mean	2.12	3.10	2.75	2.87	2.57	2.68	2.50	2.74
			SD	.67	.22	.47	.48	.61	.51	.42	.44
Reject	Male	34	Mean	2.19	3.35	3.04	3.02	2.74	2.88	2.38	2.84
			SD	.74	.50	.46	.56	.66	.60	.52	.60
	Female	13	Mean	1.65	3.20	2.97	2.82	2.29	2.38	2.38	2.54
			SD	.38	.34	.48	.46	.84	.72	.55	.80

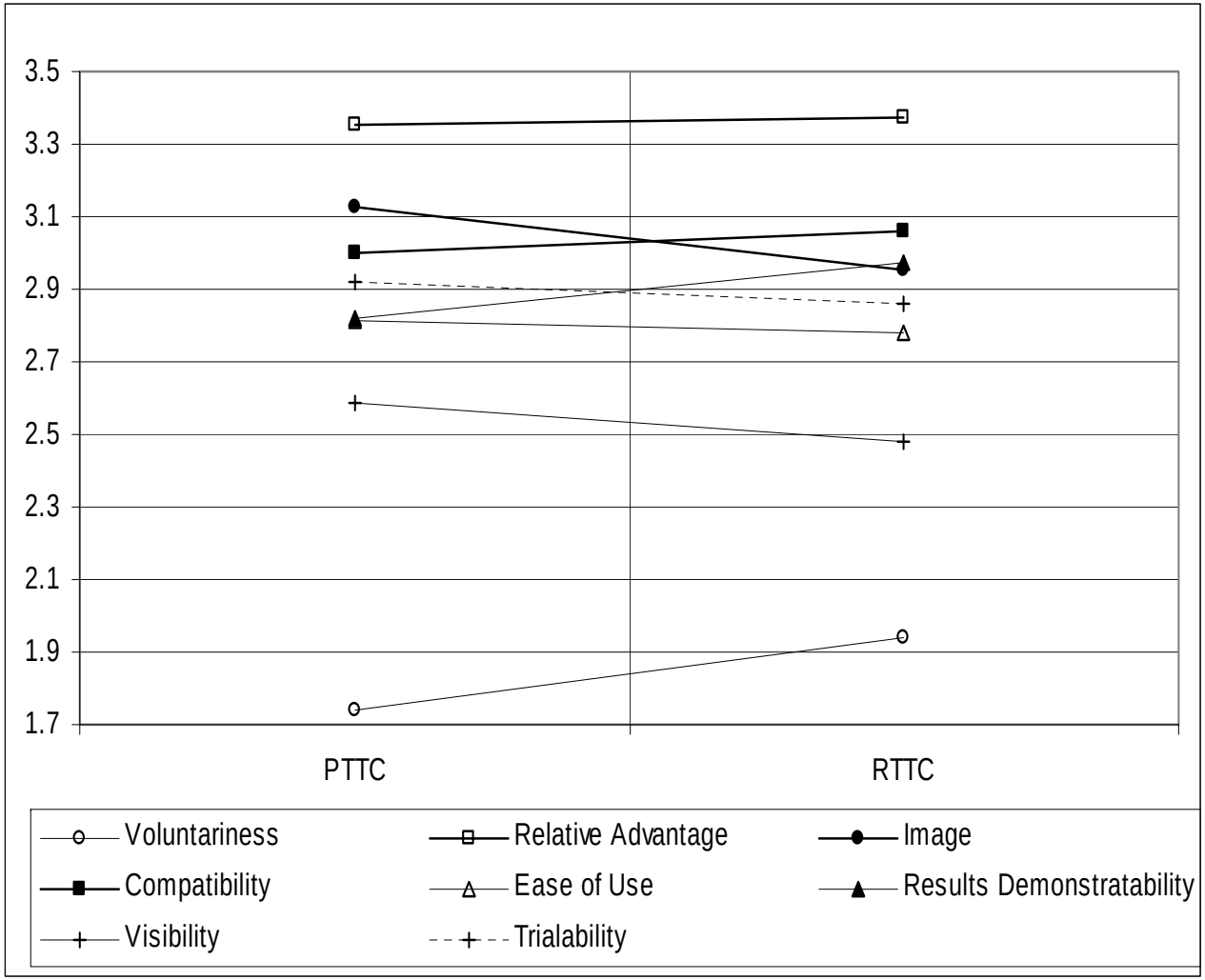
Appendix L: Graph of Means of PCIs Compared by Gender and Decision Category



Appendix M. Means of PCIs Compared by Type of TTC

Type of TTC	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
PTTC	244	Mean	1.74	3.35	3.13	3.00	2.81	2.82	2.59	2.92
		SD	.58	.46	.52	.57	.66	.64	.51	.56
RTTC	107	Mean	1.94	3.37	2.95	3.06	2.78	2.97	2.48	2.86
		SD	.69	.44	.58	.51	.62	.47	.43	.50

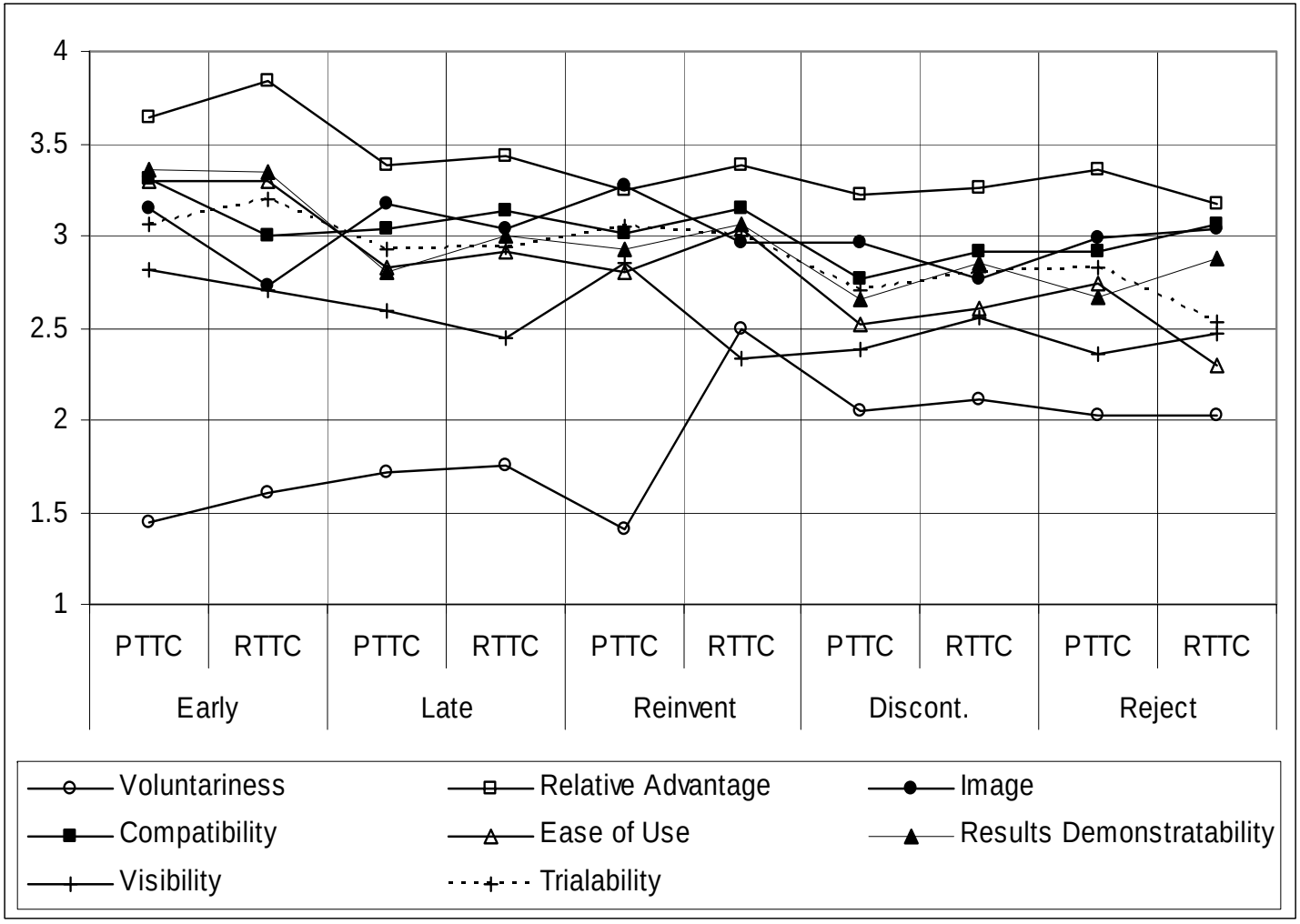
Appendix N. Graph of Means of PCIs Compared by Type of TTC



Appendix O. Means of PCIs Compared by Type of TTC and Decision Category

Decision Category	Type of TTC	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
Early	PTTC	16	Mean	1.44	3.64	3.15	3.31	3.30	3.36	2.81	3.06
			SD	.36	.41	.49	.39	.55	.47	.44	.51
	RTTC	5	Mean	1.60	3.84	2.73	3.00	3.30	3.35	2.70	3.20
			SD	.82	.22	.60	.74	.69	.52	.67	.57
Late	PTTC	130	Mean	1.72	3.38	3.17	3.04	2.83	2.80	2.59	2.93
			SD	.55	.45	.54	.56	.61	.66	.47	.47
	RTTC	51	Mean	1.75	3.43	3.04	3.13	2.91	3.00	2.45	2.94
			SD	.52	.44	.61	.52	.55	.42	.38	.33
Reinvent	PTTC	37	Mean	1.41	3.25	3.27	3.01	2.80	2.92	2.85	3.05
			SD	.44	.57	.63	.62	.69	.66	.60	.85
	RTTC	9	Mean	2.50	3.38	2.96	3.15	3.04	3.06	2.33	3.00
			SD	.79	.23	.48	.67	.56	.37	.43	.35
Discontinuance	PTTC	28	Mean	2.05	3.22	2.96	2.76	2.52	2.66	2.38	2.70
			SD	.31	.36	.29	.56	.73	.47	.42	.39
	RTTC	27	Mean	2.11	3.26	2.77	2.91	2.61	2.85	2.56	2.80
			SD	.86	.37	.51	.40	.46	.41	.40	.47
Reject	PTTC	33	Mean	2.03	3.36	2.99	2.91	2.74	2.67	2.36	2.83
			SD	.77	.41	.38	.56	.65	.64	.50	.55
	RTTC	15	Mean	2.03	3.17	3.04	3.06	2.30	2.88	2.47	2.53
			SD	.52	.57	.63	.47	.82	.70	.58	.85

Appendix P. Graph of Means of PCIs Compared by Type of TTC and Decision Category

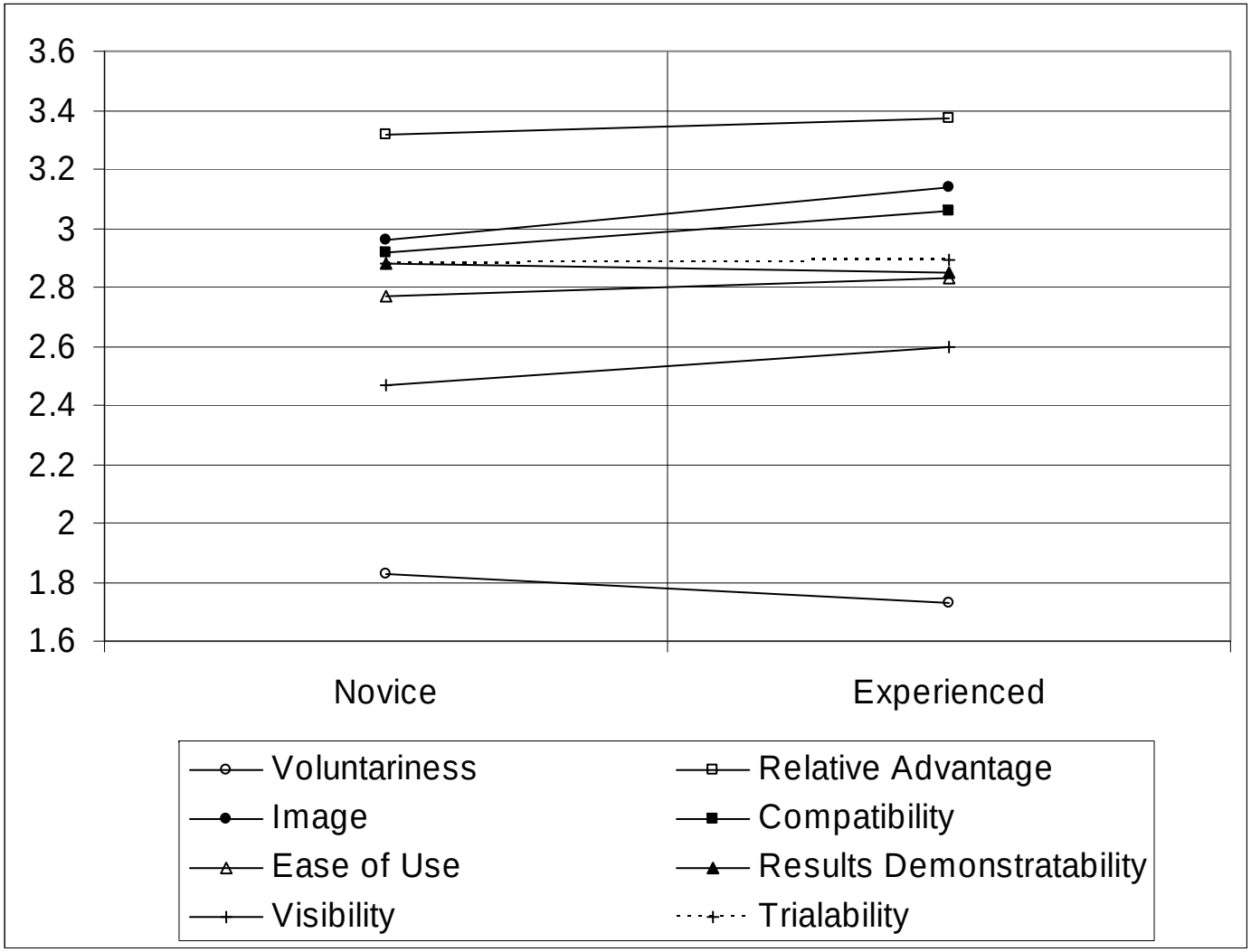


Appendix Q. Means of PCIs Compared by Experience

Experience Level	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
Novice*	117	Mean	1.83	3.32	2.96	2.92	2.77	2.88	2.47	2.88
		SD	.60	.41	.55	.55	.57	.52	.49	.52
Experienced**	225	Mean	1.73	3.37	3.14	3.06	2.83	2.85	2.60	2.89
		SD	.60	.45	.53	.55	.67	.64	.49	.55

*Defined as 1-10 years of teaching experience
**Defined as 11-39 years of teaching experience

Appendix R. Graph of Means of PCIs Compared by Experience



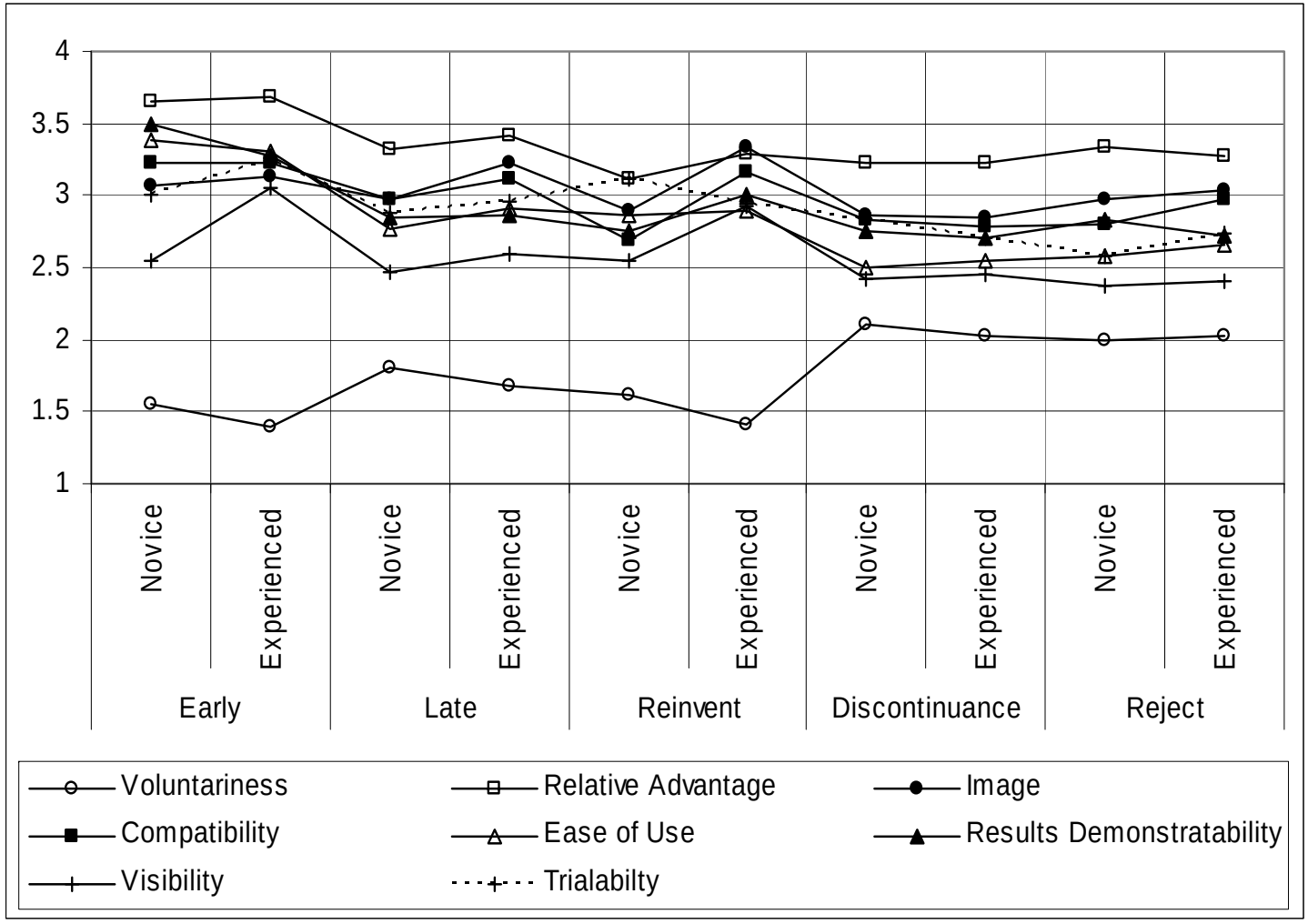
Appendix S. Means of PCIs Compared by Type of TTC and Decision Category

Decision Category	Years Experience[ab]	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
Early	Novice	10	Mean	1.55	3.66	3.07	3.23	3.38	3.50	2.55	3.00
			SD	.64	.40	.41	.61	.70	.50	.50	.37
	Experience	10	Mean	1.40	3.68	3.13	3.23	3.30	3.28	3.05	3.25
			SD	.32	.38	.57	.42	.39	.42	.37	.54
Late	Novice	63	Mean	1.81	3.32	2.98	2.97	2.77	2.85	2.47	2.88
			SD	.56	.44	.57	.47	.48	.44	.50	.45
	Experienced	114	Mean	1.68	3.42	3.22	3.11	2.91	2.86	2.59	2.95
			SD	.52	.44	.56	.59	.64	.69	.42	.43
Reinvent	Novice	13	Mean	1.62	3.11	2.90	2.69	2.87	2.75	2.54	3.12
			SD	.55	.25	.70	.66	.53	.60	.56	.58
	Experienced	27	Mean	1.41	3.29	3.33	3.17	2.89	3.01	2.93	2.94
			SD	.44	.61	.53	.51	.66	.65	.62	.90
Discontin-uance	Novice	18	Mean	2.11	3.23	2.87	2.83	2.50	2.75	2.42	2.83
			SD	.70	.37	.46	.46	.58	.39	.35	.51
	Experienced	33	Mean	2.03	3.23	2.84	2.79	2.54	2.71	2.45	2.70
			SD	.54	.37	.41	.51	.63	.48	.44	.35
Reject	Novice	13	Mean	2.00	3.34	2.97	2.80	2.58	2.83	2.38	2.58
			SD	.50	.36	.60	.74	.64	.67	.62	.70
	Experienced	31	Mean	2.03	3.27	3.04	2.98	2.66	2.72	2.40	2.74
			SD	.81	.37	.42	.44	.78	.59	.52	.66

a. Novice defined as 1-10 years of teaching experience

b. Experienced defined as 11-39 years of teaching experience

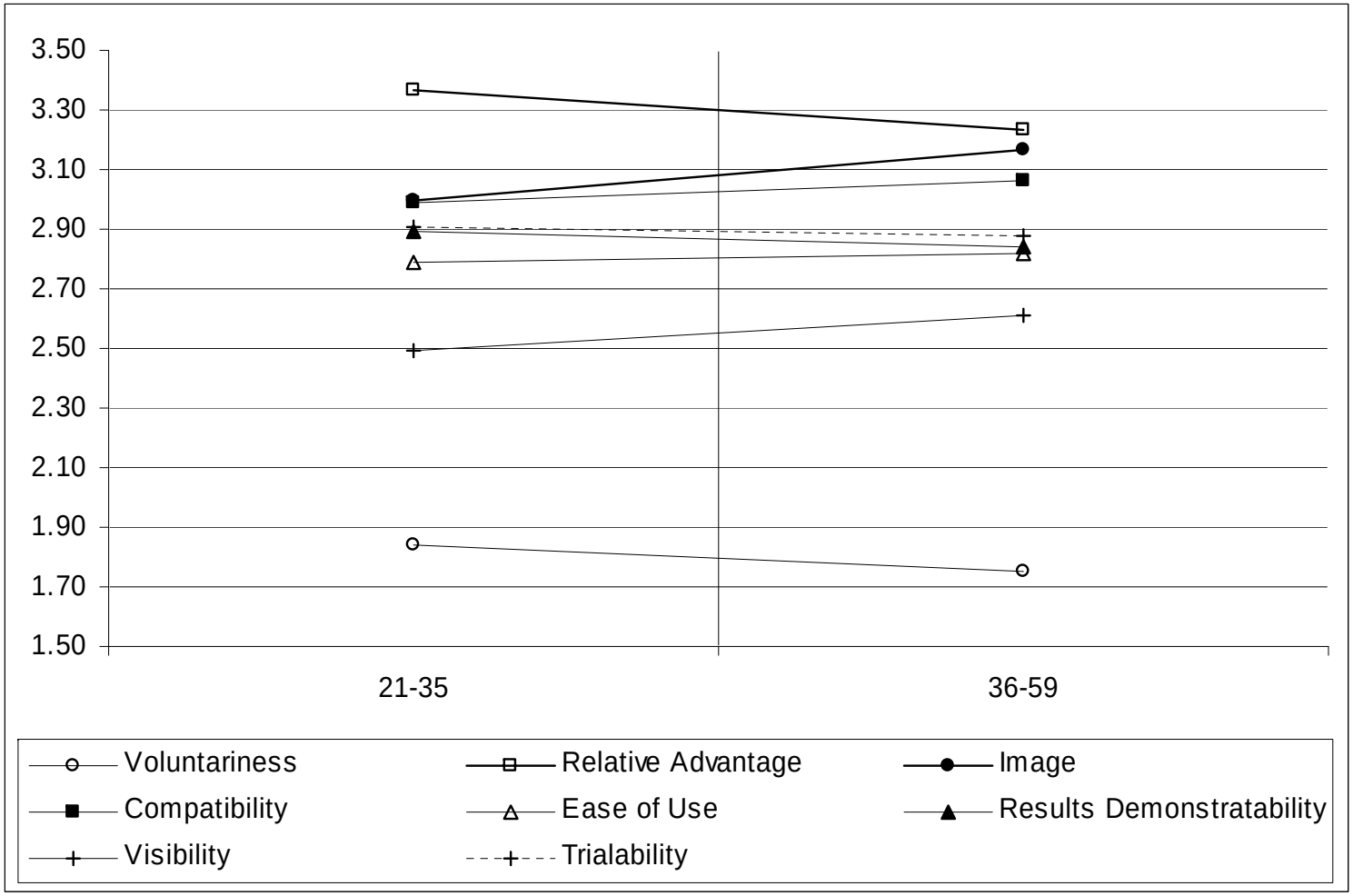
Appendix T. Graph of Means of PCIs Compared by Type of TTC and Decision Category



Appendix U. Means of PCIs Compared by Two Age Categories

Age Group	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
21-35	175	Mean	1.84	3.37	3.00	2.99	2.79	2.89	2.49	2.91
		SD	.66	.45	.55	.54	.59	.56	.48	.49
36-59	161	Mean	1.75	3.23	3.17	3.06	2.82	2.84	2.61	2.88
		SD	.58	.45	.53	.57	.69	.66	.51	.61

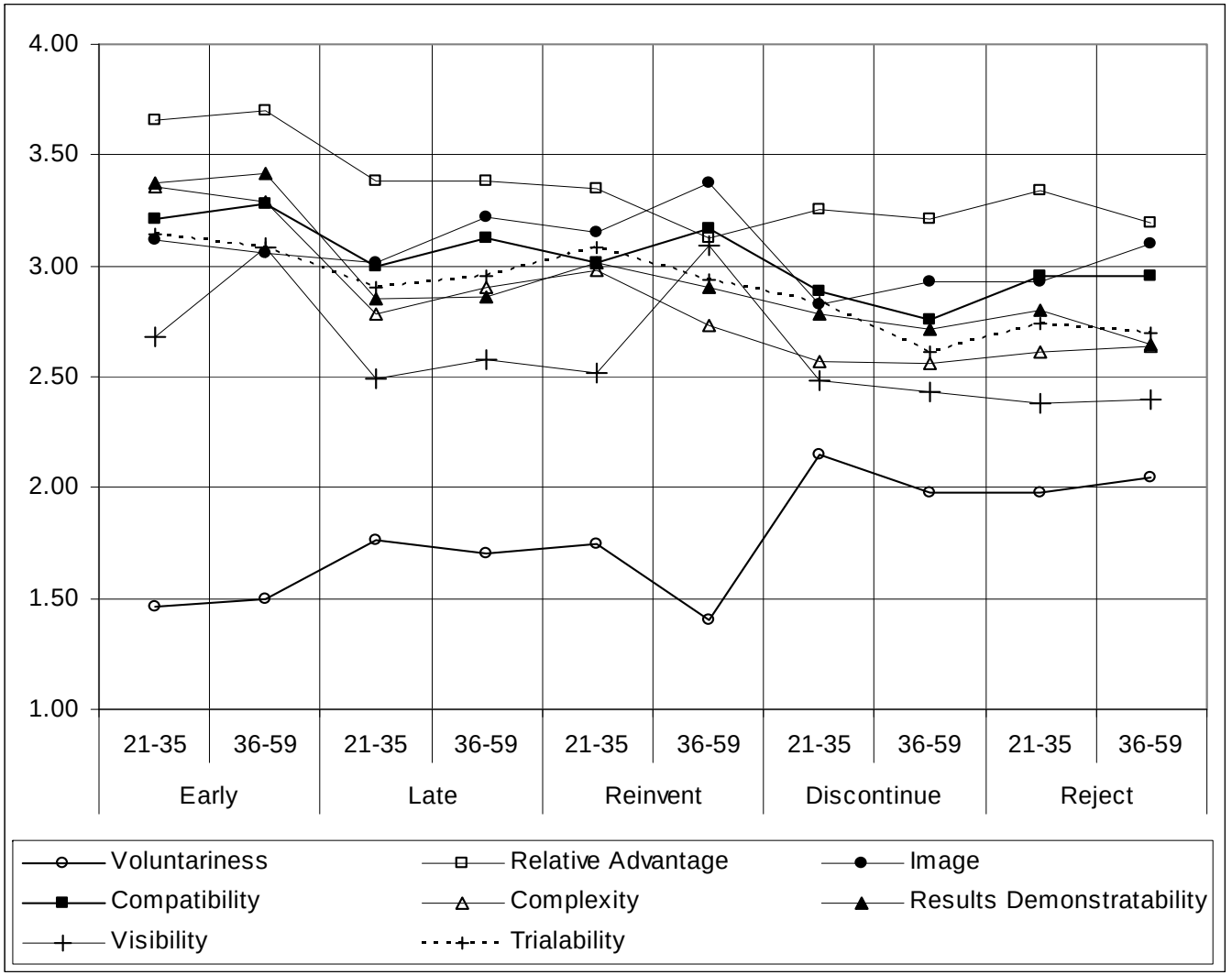
Appendix V. Graph of Means of PCIs Compared by Two Age Categories



Appendix W. Means of PCI Compared by Two Age Categories and Decision Category

Decision Category	Age Group	N	Mean SD	Voluntariness	Relative Advantage	Image	Compatibility	Ease of Use	Results Demonstratability	Visibility	Trialability
Early	21-35	14	Mean	1.46	3.66	3.12	3.22	3.36	3.38	2.68	3.14
			SD	.57	.39	.41	.53	.62	.48	.50	.53
	36-59	6	Mean	1.50	3.70	3.06	3.28	3.29	3.42	3.08	3.08
			SD	.32	.39	.68	.49	.40	.47	.38	.49
Late	21-35	79	Mean	1.77	3.38	3.02	3.00	2.78	2.85	2.49	2.90
			SD	.59	.46	.56	.51	.54	.51	.49	.42
	36-59	97	Mean	1.70	3.38	3.22	3.13	2.90	2.86	2.58	2.95
			SD	.50	.43	.56	.58	.63	.68	.41	.46
Reinvent	21-35	24	Mean	1.75	3.35	3.15	3.01	2.98	3.01	2.52	3.08
			SD	.83	.41	.65	.69	.53	.61	.50	.55
	36-59	16	Mean	1.41	3.13	3.37	3.17	2.73	2.91	3.09	2.94
			SD	.46	.66	.56	.55	.72	.74	.69	1.12
Discontinuance	21-35	33	Mean	2.15	3.25	2.83	2.88	2.57	2.78	2.48	2.83
			SD	.63	.37	.44	.44	.53	.36	.34	.43
	36-59	22	Mean	1.98	3.21	2.93	2.76	2.56	2.72	2.43	2.61
			SD	.65	.36	.40	.56	.72	.57	.52	.41
Reject	21-35	25	Mean	1.98	3.34	2.93	2.95	2.61	2.80	2.38	2.74
			SD	.60	.53	.54	.60	.62	.77	.58	.60
	36-59	20	Mean	2.05	3.19	3.10	2.95	2.64	2.65	2.40	2.70
			SD	.83	.32	.39	.46	.89	.56	.50	.80

Appendix X. Graph of Means of PCI Compared by Two Age Categories and Decision Category



Appendix Y. Rationale for Age and Experience Divisions

Age was explored three ways: (1) using two categories, 21-35 years and 36-59 years; (2) using three categories, 1-31 years, 32-45 years; and 46-59 years; and (3) using four categories, 21-29 years, 30-39 years, 40-49 years, and 50-59 years. Using two categories was determined to be the best option since this division of ages did little to change the overall pattern compared to using either three or four divisions. Using two divisions however increased the number of teacher trainers in each age division.

Experience of teacher trainers was explored three ways by using: (1) six divisions being 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-30 years, and 31-40 years; (2) three divisions being 1-10 years, 11-20 years, and 21-30 years; and (3) two divisions being 1-10 years and 11-39 years. Using two divisions of experience did little to change the overall pattern of the output compared to six or four divisions and was chosen for the present analyses.

Appendix Z. ANOVA Results of All PCI Variables

Voluntariness

Source	Type III Sum of Squares	df	*F*	*p*	Partial Eta Squared
Intercept	367.429	1	1166.900	<.001	.791
Type of TTC	.447	1	1.419	.235	.005
Gender	1.057	1	3.358	.068	.011
Experience	.906	1	2.877	.091	.009
Age	.179	1	.567	.452	.002
Decision Category	7.428	4	5.898	<.001	.071
Type of TTC x Decision Category	1.705	4	1.354	.250	.017
Error	96.982	308			

Relative Advantage

Source	Type III Sum of Squares	df	*F*	*p*	Partial Eta Squared
Intercept	1287.811	1	7113.568	<.001	.958
Type of TTC	.527	1	2.913	.089	.009
Gender	.548	1	3.030	.083	.010
Experience	1.691	1	9.339	.002	.029
Age	1.486	1	8.206	.004	.026
Decision Category	3.234	4	4.466	.002	.055
Type of TTC x Decision Category	.200	4	.276	.893	.004
Error	55.759	308			

Image

Source	Type III Sum of Squares	df	*F*	*p*	Partial Eta Squared
Intercept	1026.830	1	3682.392	<.001	.923
Type of TTC	2.381	1	8.538	.004	.027
Gender	.105	1	.375	.541	.001
Experience	.317	1	1.136	.287	.004
Age	.546	1	1.958	.163	.006
Decision Category	2.380	4	2.134	.076	.027
Type of TTC x Decision Category	2.381	4	2.135	.076	.027
Error	85.885	308			

Compatibility

Source	Type III Sum of Squares	df	*F*	*p*	Partial Eta Squared
Intercept	1020.495	1	3546.431	<.001	.920
Type of TTC	.001	1	.002	.966	.000
Gender	.002	1	.008	.928	.000
Experience	1.840	1	6.395	.012	.020
Age	.057	1	.198	.657	.001
Decision Category	3.765	4	3.271	.012	.041
Type of TTC x Decision Category	1.308	4	1.136	.340	.015
Error	88.628	308			

Ease of Use

Source	Type III Sum of Squares	df	*F*	*p*	Partial Eta Squared
Intercept	891.887	1	2403.672	<.001	.886
Type of TTC	.615	1	1.656	.199	.005
Gender	.683	1	1.840	.176	.006
Experience	.087	1	.234	.629	.001
Age	.017	1	.046	.831	.000
Decision Category	10.694	4	7.205	<.001	.086
Type of TTC x Decision Category	4.455	4	3.001	.019	.038
Error	114.284	308			

Result Demonstratability

Source	Type III Sum of Squares	df	*F*	*p*	Partial Eta Squared
Intercept	969.240	1	2909.043	<.001	.904
Type of TTC	.126	1	.378	.539	.001
Gender	.771	1	2.313	.129	.007
Experience	.175	1	.525	.469	.002
Age	.182	1	.545	.461	.002
Decision Category	4.941	4	3.708	.006	.046
Type of TTC x Decision Category	.523	4	.392	.814	.005
Error	102.620	308			

Visibility

Source	Type III Sum of Squares	df	*F*	*p*	Partial Eta Squared
Intercept	765.398	1	3450.866	<.001	.918
Type of TTC	.157	1	.708	.401	.002
Gender	.798	1	3.597	.059	.012
Experience	.413	1	1.862	.173	.006
Age	.109	1	.492	.484	.002
Decision Category	2.229	4	2.512	.042	.032
Type of TTC x Decision Category	1.788	4	2.015	.092	.026
Error	68.314	308			

Trialability

Source	Type III Sum of Squares	df	*F*	*p*.	Partial Eta Squared
Intercept	935.191	1	3341.254	<.001	.916
Type of TTC	.268	1	.958	.329	.003
Gender	.239	1	.854	.356	.003
Experience	.158	1	.563	.453	.002
Age	.245	1	.875	.350	.003
Decision Category	4.521	4	4.038	.003	.050
Type of TTC x Decision Category	2.014	4	1.798	.129	.023
Error	86.207	308			

Appendix AA. Comments of PCIs as Noted by Teacher Trainers

PCI	Comments
Voluntariness	• Teacher trainers were required to attend the ICT course • Master teacher trainers were selected by their respective TTCs • No incentives to use ICT in their job • No pressure to use the ICT skills
Relative Advantage	• Can develop interesting lesson plans • Data management • Compute student scores, rank students • Produce: reports, tables, lesson plans, teaching materials, minutes of speeches • Can save documents and easily retrieve the documents later • Can work faster • Develop learning resources • Convenient for accounting assignment • Conduct own research • Visual presentation to foster student motivation • Communicate with others via email • Increase quality of work • Find out about the world through email and Internet • Can earn more money from the skill • Prepare paper for bachelor's degree • Prepare educational video for parents
Ease of Use	• Use Word, Excel, PowerPoint, Photoshop, Internet, and email • Create: tables, lesson plans, student grade reports, student register, letters • Save documents • Data management • Typing • Develop learning contents • Research information • Language makes use difficult
Compatibility	• Create: tables, lesson plans, student grade reports, student register, letters • Develop interesting lessons • Work faster • Easily create, find, and correct documents • Create a student-centered teaching methodology • Computer aids teaching • Use for administrative purposes • Prepare paper for bachelor's degree • Prepare learning contents

Visibility	• See teachers creating lesson plans • Do not see computers in TTC • See teachers printing documents (especially at end of month when student reports are due) • Ask others for help
Image	• Create website for others to use • Talk with outside experts via email • Help peers use ICT skills • Share ICT skills with student; students in awe • Earn more money • Become more formally educated
Trialability	• Computer accessibility • Spend own money to practice at Internet cafés • Practice ICT skills • Duration of ICT training too short • Forget ICT skills due to lack of practice • Practiced prior to and after ICT training • Lack of time to practice
Results Demonstratability	• Produce: tables, lesson plans, reports, student grades, annual reports, teaching materials, learning games, PowerPoint presentations, student reports • Type texts and letters • Create pictures • Obtain college degree • Results by subject areas • More engaged students

Appendix BB. Comments of Challenges Noted by Teacher Trainers

Challenge	Comments
Repair	• Cannot troubleshoot or fix broken computers • When give broken computer to MOEYS, they do not get returned • Hardware problems • Computers are old and break down often • Shortage of funds to repair computers • Have to resort to using a computer technician thus costing money • Computers do not work properly
Language Barriers	• Limited English skills • Difficulty due to first language of Khmer • Technical terms do not exist in the dictionaries • Cannot understand dialogue boxes
Lack of Electricity	• No constant / reliable source of electricity • Lack of adequate power • No generator • Battery used for computers is small • No power at TTC • Price of electricity is high
Lack of Computers	• No / few computers for teacher trainers to use • Computers are locked up due to security issues • No computer room • No computers at home • Lack of computer equipment • Very slow computers • Computers are not reliable • New computers used only by principal • No LCDs or other presentation devices
Lack of Internet	• No Internet to use email • Trainers have to spend their own money at Internet cafés • No connectivity • Computers room not connected to Internet
Pedagogy	• Cannot integrate ICTs in teaching
Ease of Use As Challenge	• Difficult to troubleshoot / repair broken computers • Do not know how to use the Internet or email • Software issues: cannot edit pictures, use Word, Excel, PowerPoint, Photoshop • Forgot how to use software • Difficult to type in Khmer / English • Limited ability to integrate ICT in subject area • Often accidentally delete documents

	• Hard to understand technical terms • Cannot conceptualize purpose of ICTs
Trialability as Challenge	• Shortage of computers constrain practice • Must spend own money to practice outside of TTC • Not enough computers to meet demand • Training too short • Fail to practice skills daily thus forget ICT skills • No personal computer to practice • Not enough time to practice • Do not use skills daily or even monthly • Too busy to practice • Only have 2 hours per week to use computers
Relative Advantage as Challenge	• Very time intensive • Slow pace of work on the computer • Costly to repair • Loose documents • Cannot locate needed resources