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LEARNERS' SKILLS AND USAGE OF SOFTWARE APPLICATIONS AND ICT TOOLS IN OUM

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OBJECTIVE OF PRESENTATION

- To present the findings of a study on OUM learners' skills and usage of software applications and ICT tools, and
- To provide recommendations for enhancing OUM learners' skills and usage of software applications and ICT tools.

BACKGROUND OF STUDY

- On average, OUM spends 15% of its annual budget (OPEX and CAPEX) on ICT-related departments (ICT Services, CIDT and Digital Library)
- These high expenditures are intended to provide the highest quality ICT infrastructure to deliver its academic programmes effectively and efficiently
- An excellent ICT infrastructure will encourage learners to use ICT and to enhance their ICT skills and usage in learning and working
- ***Questions: What are the ICT skills and usage levels of learners? What is the attitude of learners towards ICT?***
- The answers to the above questions will provide invaluable feedback on the effectiveness of ICT infrastructure in assisting learners in learning.

RESEARCH QUESTIONS

1. Are OUM learners equipped with skills of using software applications (word processing, emails, presentation manager & digital library) to help them in their study?
2. Are there any differences in learners' skills of using software applications among new and established learners?
3. Are the four ICT tools (website, online forum, MyLMS & academic support) fully utilized by learners?
4. Are there any differences in the usage of ICT tools among new and established learners?
5. Do learners prefer e-learning, traditional methods of learning or both in OUM?

METHODOLOGY

- Survey instrument was adapted from the questionnaires used in the SPOT-PLUS Project, 2004 conducted by the Directorate General for Education and Culture of the European Commission (ECEC) in 2004.
(<http://www.spotplus.odl.org/questionnaire>).
- Sample size: 482 OUM learners in three states (Kelantan, Pahang & Sabah)
- Survey was carried out in September 2007 Semester

PROFILE OF RESPONDENTS

Chart 1: Learners by Gender (n=482)

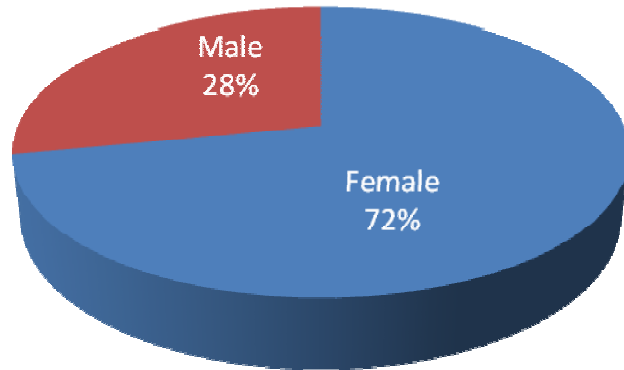


Chart 2: Learners by State Learning Centres (n=482)

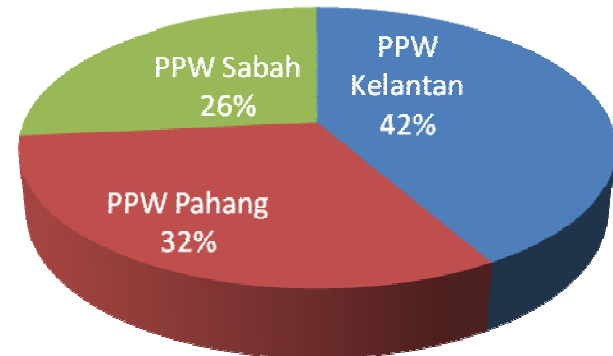


Chart 3: Learners by Age Group (n=482)

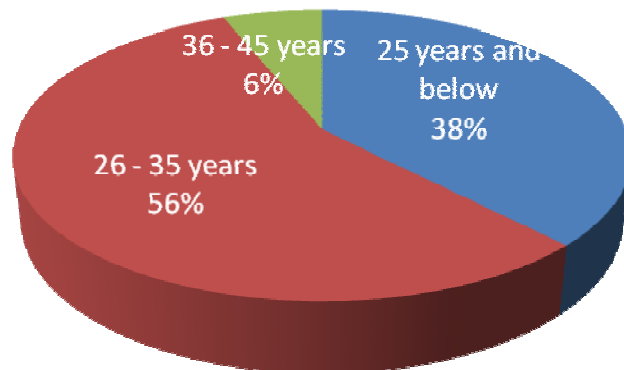
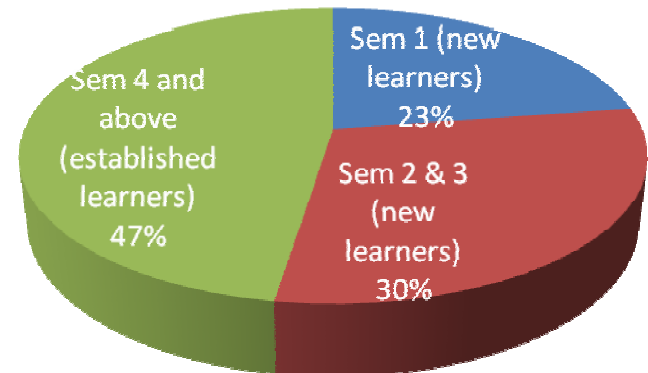


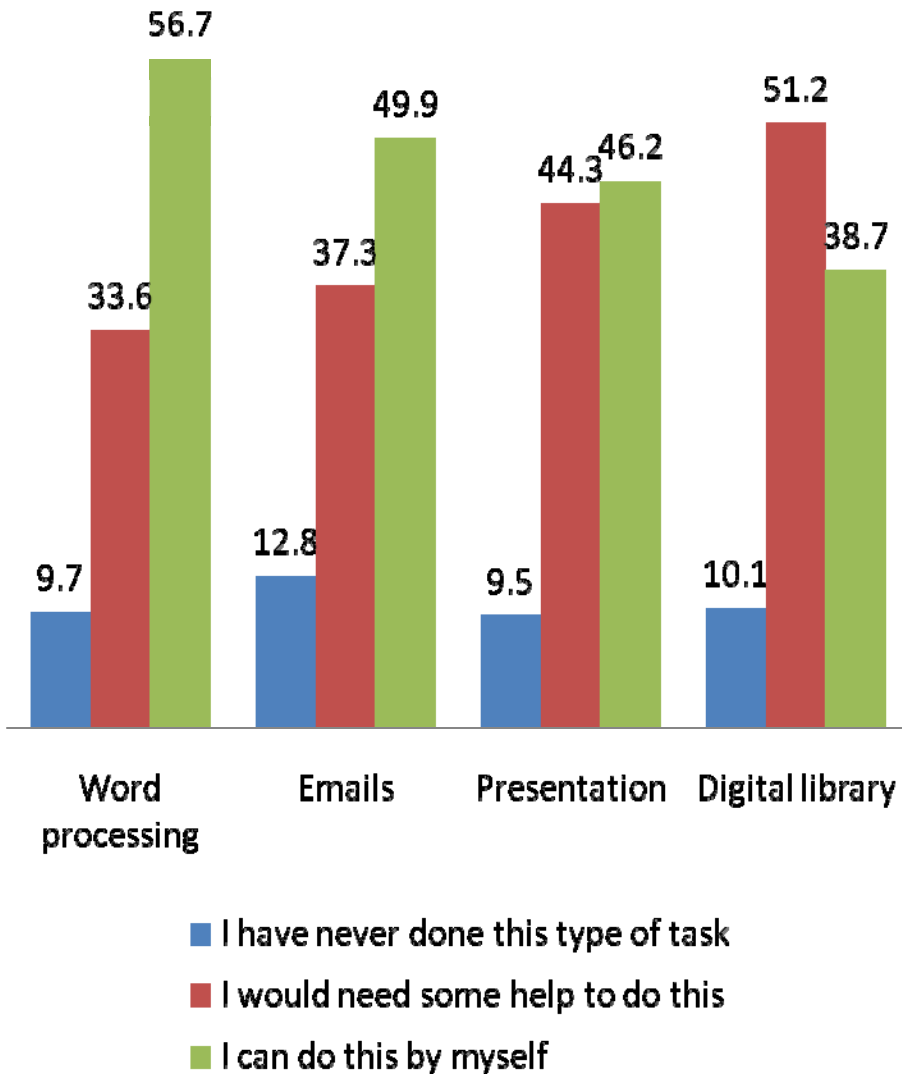
Chart 4: Learners by Current Semester (n=482)



RESEARCH QUESTION #1

Are OUM learners equipped with skills of using software applications (word processing, emails, presentation manager & digital library) to help them in their study?

Chart 1: Percent of Learners Using Software Applications (Skills)



- Between 38.7% and 56.7% of learners could use the four software applications without help
- In Spot-Plus Project (2004), the corresponding figures are over 80% for word-processing and e-mail and 76% and 44% for on-line digital library and presentation manager.
- This shows that OUM learners' ability in using ICT was lower in 3 applications.
- Between 9.5% and 12.8% of learners have never used any of the software applications suggesting that the number of ICT illiterate among OUM learners is still significant, despite our blended learning model with a relatively high emphasis on ICT.

Table 1: Software Skills Index

(*Skills index indicates the number of software applications which learners are skilled in using. The maximum value of skills index is 4 for this study)

Current Semester	n	Restrictive user (can do by myself)	Permissive user (need some help)
		Skills index*	
Sem 1 (new learners)	109	1.6	1.7
Sem 4 and above (established learners)	228	2.0	1.6
Total	482	1.9	1.6

- A learner could use 1.9 software applications without help, and 1.6 software applications with some help. Efforts should be made to transform permissive users into restrictive users.
- Based on the Tracer Study (CSM;MOHE, 2008), 80.4% of graduates were able to use ICT applications to carry out their job tasks.
- It appears that there is a large gap of skills between graduates and undergraduates in the context of using ICT.

**Table 2: Percentage of Restrictive Users
(can do without help)**

Item	No. of software applications used without help					
	None	One	Two	Three	Four	Total
Number of learners	128	83	91	80	100	482
<i>Percentage of learners</i>	<i>26.6</i>	<i>17.2</i>	<i>18.9</i>	<i>16.6</i>	<i>20.7</i>	<i>100.0</i>

- Only one-fifth (20.7%) of learners could use all the 4 software applications, and 16.6% to 18.9% could use 1 to 3 applications without help
- More than a quarter of learners (26.6%) did not know how to use any of the 4 software applications
- The above suggest the need to upgrade software skills of learners.

Research Question #2

Are there any differences in learners' skills of using software applications among new and established learners?

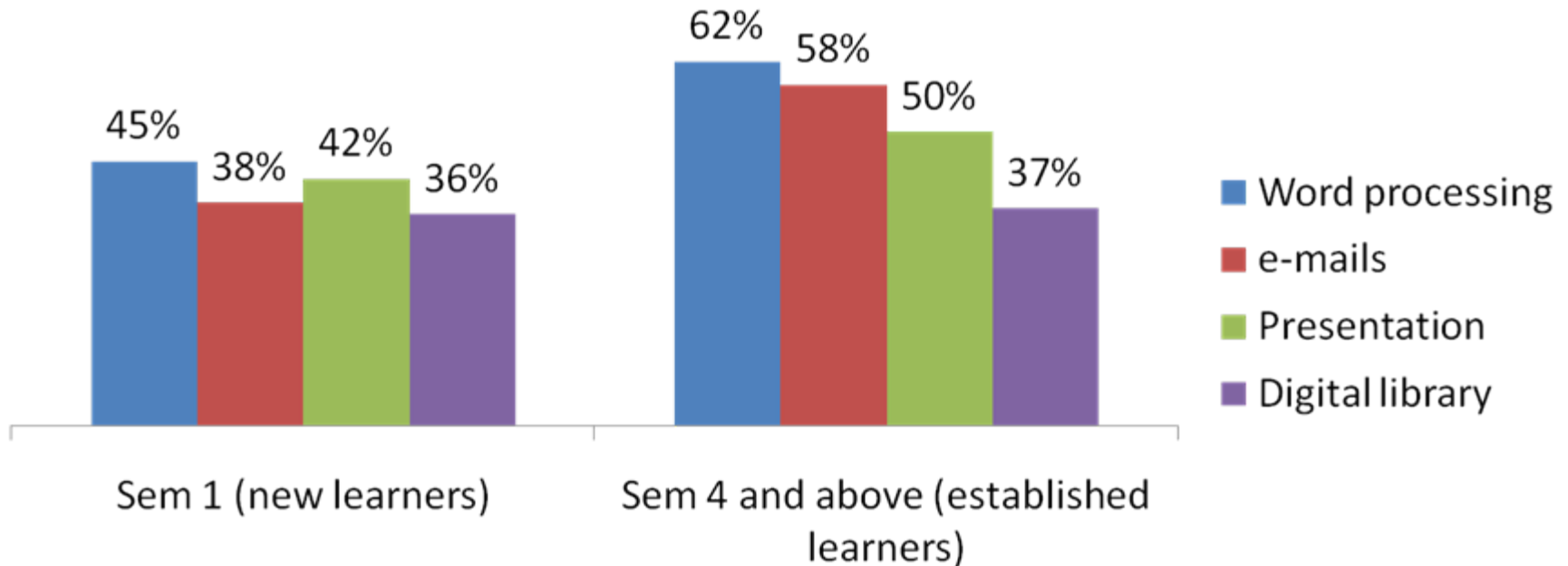
Table 3: Software Skills Index by Cohort

(*Skills index indicates the number of software applications which learners are skilled. The maximum value of the skill index is 4 for this study).

Current Semester	Sample n	Restrictive user (can do by myself)	Difference
		Skills index*	
Sem 1 (new learners)	109	1.6	-
Sem 4 and above (established learners)	228	2.0	0.4

- The figures reported in this table do not reflect a longitudinal measure of a single cohort but a study of three distinct cohorts of learners at semester 1 and semester 4 and above.
- Learners have already acquired some basic software skills in semester 1, as they could use 1.6 software applications.
- There are only marginal differences between the software skills levels of new and established learners.

Chart 2: Percentage of Restrictive Users (*can do by myself*) for Four Applications

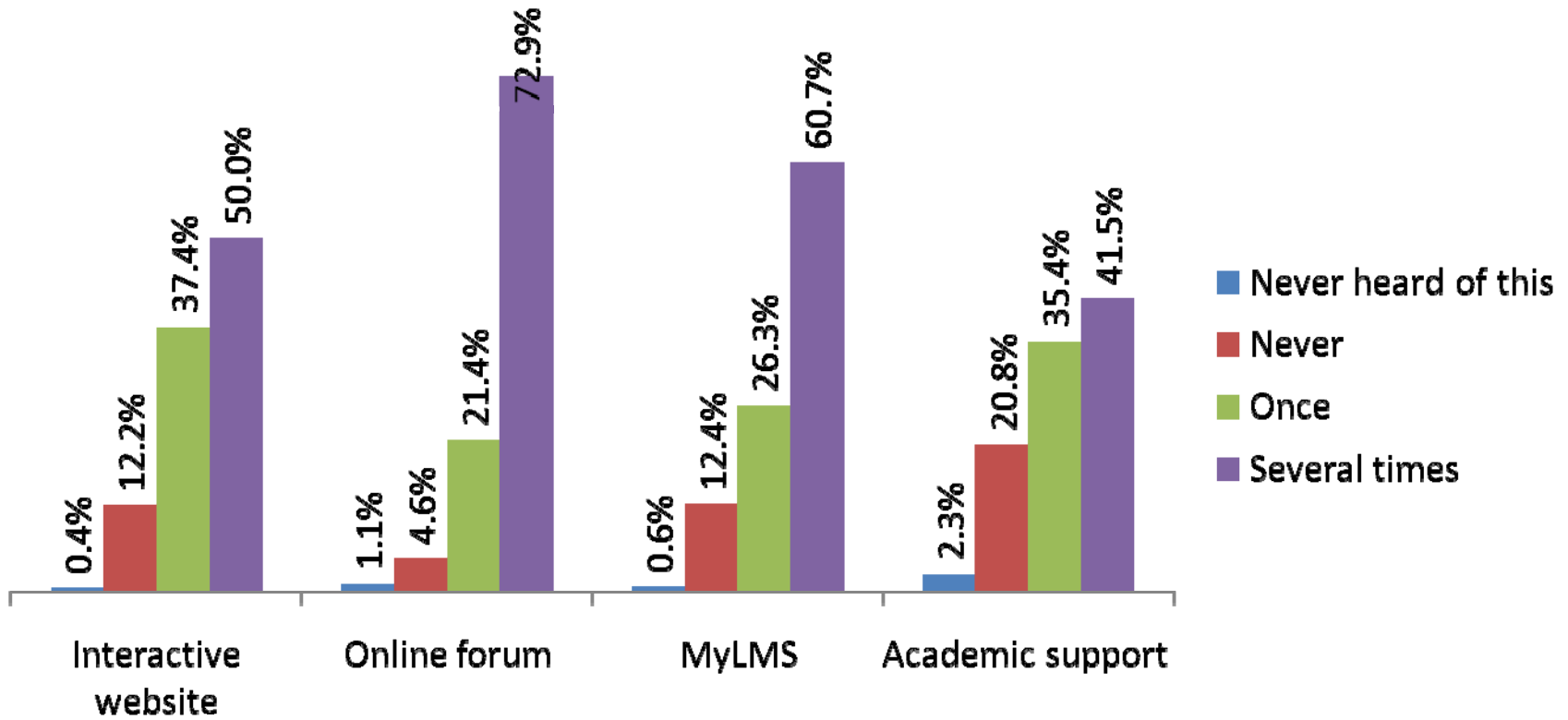


- Percentage of restrictive users in semester 1 ranges between 36% (digital library) and 45% (word processing).
- These figures are higher for learners in the latter semesters (i.e. 37% for digital library and 62% for word processing for established learners).

RESEARCH QUESTION #3

Are the four ICT tools (website, online forum, MyLMS & academic support) fully utilized by learners?

Chart 3: Usage of ICT Tools



- The percentage of OUM learners using the ICT tools several times ranged from 41.5% (academic support by emails) to 72.9% (online forum).
- OUM learners' usage of ICT tools is higher than that of European learners in 3 of tools except for academic support.
- This is not unexpected since OUM learners are in an ODL institution while European learners are in the conventional universities.

Table 4: Percentage of Learners Using the Four ICT Tools

Current Semester	Number of ICT tools used					
	None	One	Two	Three	Four	Total
No. of Learners	81	84	79	124	114	482
% of Learners	16.8	17.4	16.4	25.7	23.7	100

- This table provides another empirical evidence that the ICT tools were not fully utilized by learners at OUM.
- Less than a quarter (23.7%) of learners used all the four ICT tools and 16.4% to 25.7% of them used 1 to 3 ICT tools.
- 16.8% of learners did not use any of the four ICT tools at all.

RESEARCH QUESTION #4

Are there any differences in the usage of ICT tools among new and established learners?

Table 5: ICT Usage Index

(*ICT usage index = indicates the number of ICT tools used frequently (several times). The maximum value of usage index is 4 for this study).

Current Semester	Sample n	Frequent users	Change
		Usage index*	
Sem 1 (new learners)	109	1.8	-
Sem 4 and above (established learners)	229	2.4	0.6
Total	482	2.2	-

- The figures reported in this table do not reflect a longitudinal measure of a single cohort but a study of two distinct groups of learners at semester 1 and semester 4 and above.
- The usage of ICT tools differs only marginally between the two groups of learners.

RESEARCH QUESTION #5

Do learners prefer e-learning, traditional methods of learning or both in OUM?

Table 6: Perceptions of Learners Towards Use of ICT and Traditional Method in Learning (Mean Score out of 4)

Current Semester	Sample n	Positive towards ICT	Positive towards TM
Total	477	3.13	2.93

- Learners were positive towards use of ICT and TM for learning.

SUMMARY OF FINDINGS

Research Questions	Findings
1. Are OUM learners equipped with skills in using software applications (word processing, emails, presentation manager & digital library) to help them in their study?	No, because the software skills level for OUM learners is low as indicated by the restrictive skills index of 1.9.
2. Are there any differences in learners' skills in using software applications between new and established learners?	Yes, but the difference is marginal.
3. Are the four ICT tools (<i>website, online forum, MyLMS & academic support</i>) fully utilized by learners?	They were not fully utilized by OUM learners, as indicated by the usage index of 2.2 out of 4 for frequent users.

SUMMARY OF FINDINGS

Research Questions	Findings
4. Are there any differences in the usage of ICT tools between new and established learners?	Yes, but the difference is marginal.
5. Do learners prefer learning using ICT or traditional method?	Yes, they prefer learning using ICT, but they also have a positive view of the use of traditional method of learning.

CONCLUSION & RECOMMENDATIONS

1. The study indicates that OUM learners prefer the use of ICT in learning and this augurs well with the high investment in ICT.
2. However, our learners are rated low in ICT skills and usage levels, regardless of semester of study, implying that efforts to integrate ICT in learning have not been quite effective.
3. This calls for a more *holistic* effort in enhancing ICT skills and usage in teaching and learning.
4. *ICT Skills and Usage Indices* used in this study can be adopted as a KPI to measure the success of the above effort.

THANK YOU

APPENDICES

Appendix 2

Table 2-1: Positive attitude of learners towards e-learning

Statement	N	Mean
I think that ICT can improve my learning	468	3.46
I think audio and video material can improve my learning	471	3.31
I would like to share information and ideas with people who have similar interests	469	3.29
I want to be able to ask questions to experts and relevant people, no matter where they are	451	3.24
ICT allows for effective sharing of experiences	469	3.23
I would like to discuss topics with people from different backgrounds	465	3.18
I would like to study with a computer, even if it is complicated	463	3.12
I like to work with a computer in small groups	461	3.07
Learning with ICT requires highly developed study skills	468	3.07
I would like to cooperate on a learning task with people from different centres	458	3.04
I prefer to choose the specific topics to study within a course	459	3.03
Learning via the Internet alone is acceptable to me	458	2.91
I prefer to learn on my own	468	2.75

Table 2-2: Positive attitude of learners towards traditional learning methods

Statement	N	Mean
Good access to a tutor requires face to face contact	465	3.39
I prefer reading from a printed text	461	3.16
In general, learning with ICT is very time-consuming	454	3.15
Computer-based teaching/learning is lacking in 'human' interaction, since there is no face to face contact	458	2.97
I prefer to study with traditional face-to-face tutorials	469	2.96
I like being taught in a classroom setting	465	2.94
Quality information is hard to find on the web (www)	458	2.82
If studying with a computer turned out to be too complex, I would like to return to traditional education methods	463	2.76
I think that in online courses, small-group learning may become disorganized	438	2.75

Table 2-3: Opportunity of ICT Use (mean score out of 4)

Current Semester	Sample n	Contacts	Access	Outcome
Sem 1 (new learners)	109	3.30	3.20	3.19
Sem 2 & 3 (new learners)	141	3.22	3.08	3.19
Sem 4 and above (established learners)	227	3.09	3.10	3.12
Total	477	3.18	3.12	3.16

Table 2-4: ICT Use for Contacts & Information Exchange

	N	Mean
Enabling students to contact lecturers/tutors/staffs for advice on academic questions and problems	454	3.35
Allowing graduates easier access to lifelong learning	454	3.24
Making it easier for students to study abroad	448	3.23
Widening the range of sources of information and knowledge available to students	454	3.21
Providing more effective and/or frequent feedback to students on their learning progress	453	3.20
Enabling more effective and systematic feed-back from students on quality of learning and teaching	454	3.19
Enabling students to find out about higher education institutions before deciding to study	452	3.16
Enabling students to take courses and modules via the Internet	457	3.11
Enabling students to collaborate on academic work with other students from all over the country	454	3.10

Table 2-5: ICT Use for Access to Higher Education

	N	Mean
Enabling students from developing countries to access higher education more easily	450	3.18
Enabling students with physical disabilities to access higher education more easily	443	3.12
Enabling students from remote geographical regions to access higher education more easily	443	3.11
Enabling students from less-favoured social backgrounds to access higher education more easily	446	3.08

Table 2-6: ICT use for changing learning outcome

	N	Mean
Developing employability skills such as teamwork, problem-solving, self-learning capability, presentation skills, etc	451	3.28
Developing a more collaborative and less individual approach to learning	453	3.13
Mobilising students to participate in university activities within local communities	450	3.12
Developing a more autonomous and learner-centred approach in university teaching	447	3.10

Questionnaire

Question B1: Please indicate your ability to use the following programs to carry out the types of tasks shown (*mark one option per program*)

1: I can do this by myself 2: I would need some help to do this; 3: I have never done this type of task

Word processor, e.g. to create a well formatted CV

Email program, e.g. to send an attached document or image

Presentation manager, e.g. to create a power point slides

Digital Library, e.g. to search for books and specific publication

Question B2: Please indicate how often you use the following (*mark one option per program*)

1: Several times; 2: Once; 3: Never; 4: Never heard of this

Multimedia learning materials

Online discussion forum

Video-conferencing

Students' portal

Questionnaire

Question B3: Please cross (X) the relevant circle to indicate your level of agreement for the following:

1: I totally agree; 2: I mostly agree; 3: I mostly disagree; 4: I totally disagree; 5: I do not know

- I want to be able to ask questions to experts and relevant people, no matter where they are
- In general, learning with ICT is very time-consuming
- Good access to a tutor requires face to face contact
- I would like to discuss topics with people from different backgrounds
- I prefer reading from a printed text
- I think that ICT can improve my learning
- Quality information is hard to find on the web (www)
- I would like to study with a computer, even if it is complicated
- If a task becomes too difficult, I am likely to drop it
- I would like to share information and ideas with people who have similar interests
- I think audio and video material can improve my learning
- I think that In online courses, small-group learning may become disorganized
- ICT allows for effective sharing of experiences
- I prefer to study with traditional face-to-face tutorials
- If studying with a computer turned out to be too complex, I would like to return to traditional education methods
- I would like to cooperate on a learning task with people from different centres
- I prefer to choose the specific topics to study within a course
- Learning via the Internet alone is acceptable to me
- I like being taught in a classroom setting
- Computer-based teaching/learning is lacking in 'human' interaction, since there is no face to face contact

Questionnaire

Question B4: Below is a list of opportunities that might be enhanced by ICT. Please indicate how important you think each of these is (mark one option per program)

1: Very Important 2: Important; 3: Not very important; 4: No important at all; 5: I do not know

1. Enabling students to take courses and modules via the Internet
2. Enabling students to find out about higher education institutions before deciding to study
3. Enabling students to collaborate on academic work with other students from all over the country
4. Enabling students to contact lecturers/tutors/staffs for advice on academic questions and problems
5. Making it easier for students to study abroad
6. Enabling students with physical disabilities to access higher education more easily
7. Enabling students from less-favoured social backgrounds to access higher education more easily
8. Enabling students from remote geographical regions to access higher education more easily
9. Enabling students from developing countries to access higher education more easily
10. Developing employability skills such as teamwork, problem-solving, self-learning capability, presentation skills, etc
11. Developing a more autonomous and learner-centred approach in university teaching
12. Developing a more collaborative and less individual approach to learning
13. Enabling more effective and systematic feed-back from students on quality of learning and teaching
14. Widening the range of sources of information and knowledge available to students
15. Mobilizing students to participate in university activities within local communities
16. Allowing graduates easier access to lifelong learning
17. Providing more effective and/or frequent feedback to students on their learning progress