

The role of technology in eLearning - conclusions from empirical study

Results & Conclusions from the
empirical study accomplished with the
Leonardo project **IMPACT**

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AIMS of the Empirical study:

- To identify new facts about European students' experiences and perceptions of the use of technology in higher education including personal benefits or failures, increased or deepened knowledge, behavioural changes that were affected by the use of ICT, or new opportunities to organize the personal learning process
- To determine attitudes towards the use of ICT **and** e-learning versus the use of traditional educational methods
- Opportunities offered by use of ICT in e-learning.

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Methodology: Principles and Approach

- Collect problems to be investigated from partner institutions
- Form a sub-committee of experts in data analysis in social sciences whose task was to:
 - Develop a conceptual model guiding the data analysis and
 - Devise a questionnaire based on the problems contributed in stage 1.
- Review, test and approve the questionnaire by all the project team
- Administer the questionnaire to the six target groups after translating it into the local language – if necessary.
- Assemble the responses acquired by each institution and perform suitable data analyses.

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Conceptual Model of the study

- **The task** of the study is to give the concerned audience an answer to the question: what's the ICT added value to the distance education. In fact, we should measure the impact of ICT on a specific Learning Environment in 6 different forms (organizations)

Our **hypothesis** is:

- A great deal of technology is used in the education of adults
- There is a widespread hope/dream/belief that this has a good impact on Distance learning environments
- This may be represented by **outcomes**:
- Through the use of ICT students develop an appropriate level of capability, become more engaged with their own learning, and achieve learning outcomes across the curriculum at a higher level.
- ICT is used to support pedagogical practices that provide learning environments that are more Learner-centred, Knowledge-centred, Assessment-centred, and Work-oriented.

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Questionnaire Design

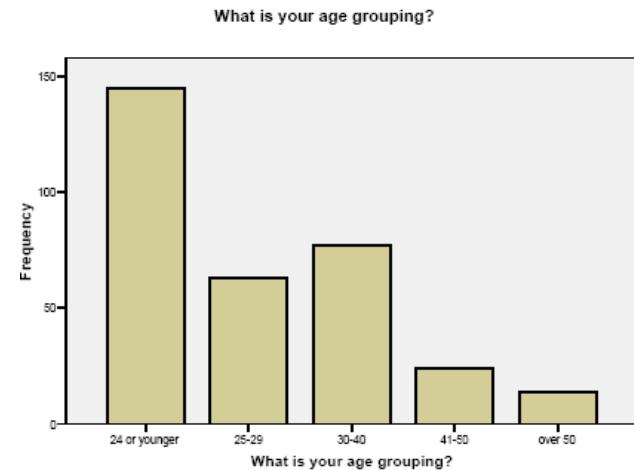
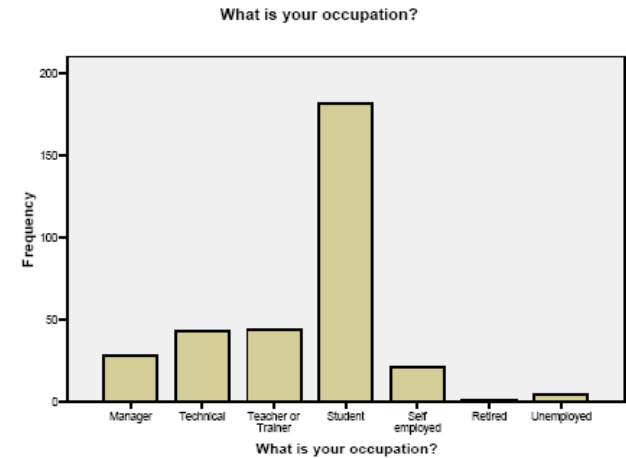
The questionnaire was designed to consist of three sections:

- Personal information including social indicators like gender, age, profession.
- Questions related to the impact of ICT on learning in general
- Questions related to the impact of ICT on learning in e-learning

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Analysis of collected information

- The profile of the respondents
 - Personal Background*
 - Age*



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Analysis of collected information

- The profile of the respondents

-Gender

-Educational Background

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	152	47,1	47,1	47,1
	Female	171	52,9	52,9	100,0
	Total	323	100,0	100,0	

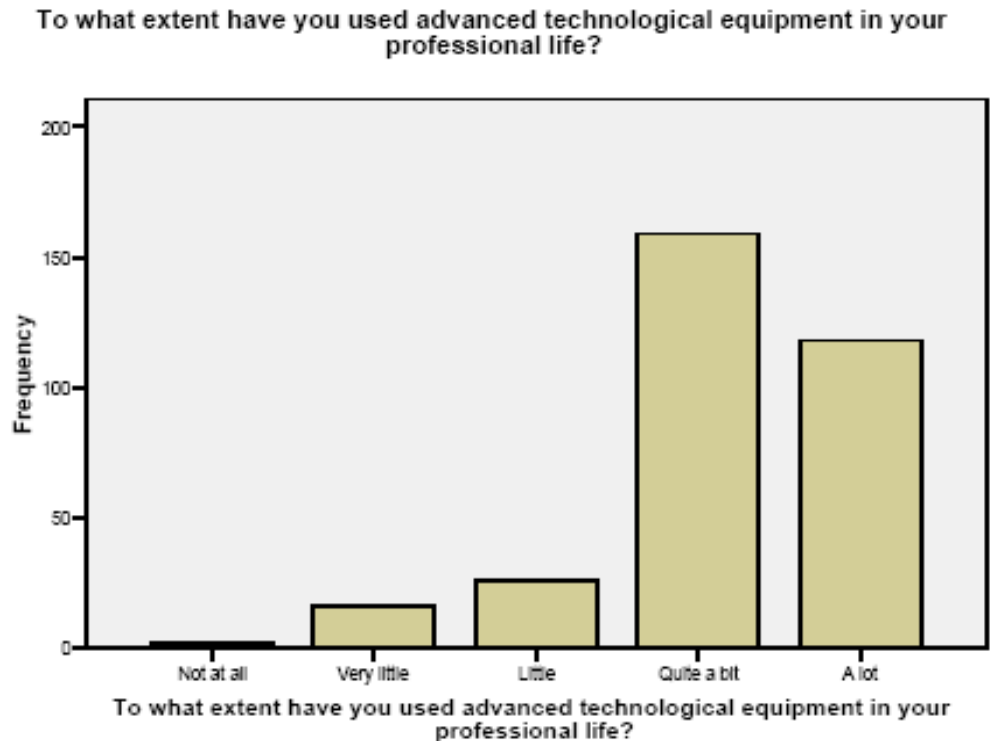
What is your level of education?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school matriculation	159	49,2	51,1	51,1
	Three years or less of post-secondary education	55	17,0	17,7	68,8
	Four or more years of post-secondary education	97	30,0	31,2	100,0
	Total	311	96,3	100,0	
Missing	0	12	3,7		
	Total	323	100,0		

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Analysis of Collected information

- The profile of the respondents
 - *Experience with advanced technology*



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Analysis of Collected information

- The profile of the respondents

- *The Impact of ICT on Learning in General*

Thanks to technology, the problems of access to learning for students with disabilities have been resolved

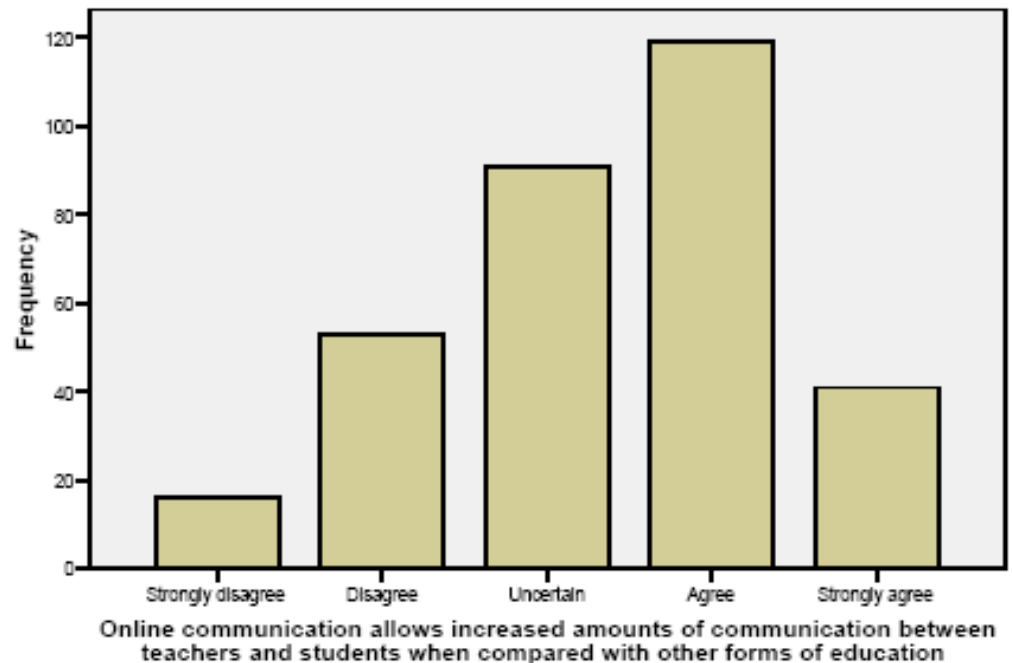
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	12	3,7	3,7	3,7
	Disagree	33	10,2	10,3	14,0
	Uncertain	106	32,8	33,0	47,0
	Agree	123	38,1	38,3	85,4
	Strongly agree	47	14,6	14,6	100,0
	Total	321	99,4	100,0	
Missing	0	2	,6		
	Total	323	100,0		

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Analysis of Collected information

- *Online Communication*

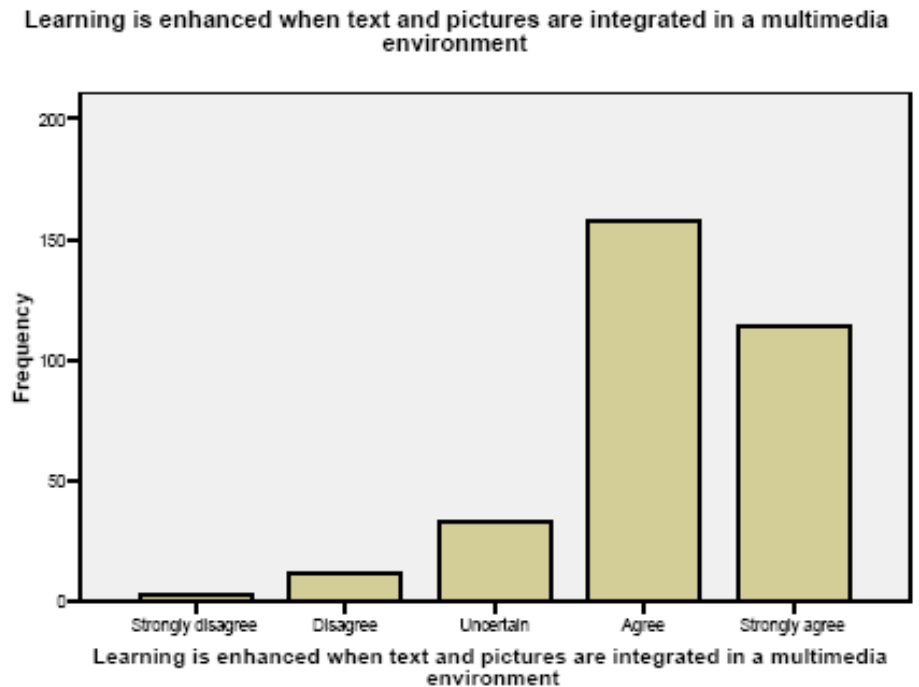
Online communication allows increased amounts of communication between teachers and students when compared with other forms of education



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Analysis of Collected information

- *Opportunities offered by use of ICT versus by use of traditional methods in learning in general*



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Analysis of Collected information

The Impact of ICT on Learning in E-learning

The integration of blended learning approaches in campus teaching has enhanced the effectiveness of learning

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly disagree	4	1,2	1,2	1,2
Disagree	12	3,7	3,7	5,0
Uncertain	100	31,0	31,2	36,1
Agree	151	46,7	47,0	83,2
Strongly agree	54	16,7	16,8	100,0
Total	321	99,4	100,0	
Missing 0	2	,6		
Total	323	100,0		

The use of the WWW is an obstacle to learning

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly agree	8	2,5	2,5	2,5
Agree	18	5,6	5,6	8,1
Uncertain	43	13,3	13,4	21,4
Disagree	126	39,0	39,1	60,6
Strongly disagree	127	39,3	39,4	100,0
Total	322	99,7	100,0	
Missing 0	1	,3		
Total	323	100,0		

Those who study online have difficulty in organising their learning.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly agree	18	5,6	5,7	5,7
Agree	54	16,7	17,1	22,9
Uncertain	112	34,7	35,6	58,4
Disagree	100	31,0	31,7	90,2
Strongly disagree	31	9,6	9,8	100,0
Total	315	97,5	100,0	
Missing 0	8	2,5		
Total	323	100,0		

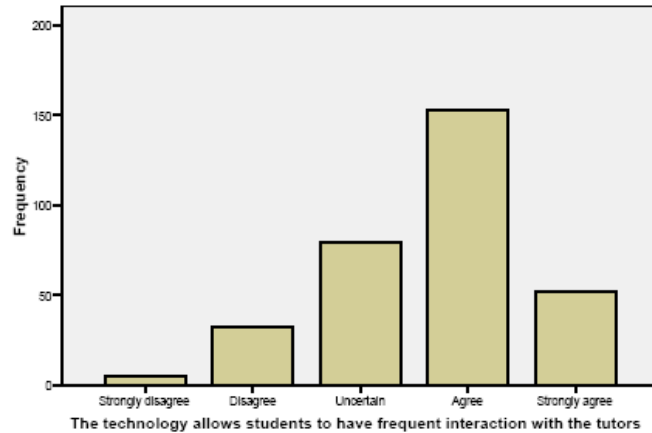
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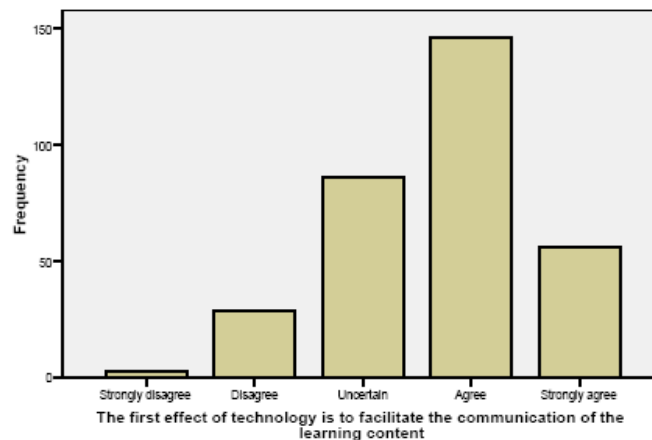
The Impact of ICT on Learning in E-learning

Opportunities offered by use of ICT versus by use of traditional methods in e-learning

The technology allows students to have frequent interaction with the tutors



The first effect of technology is to facilitate the communication of the learning content



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Analysis of Collected information

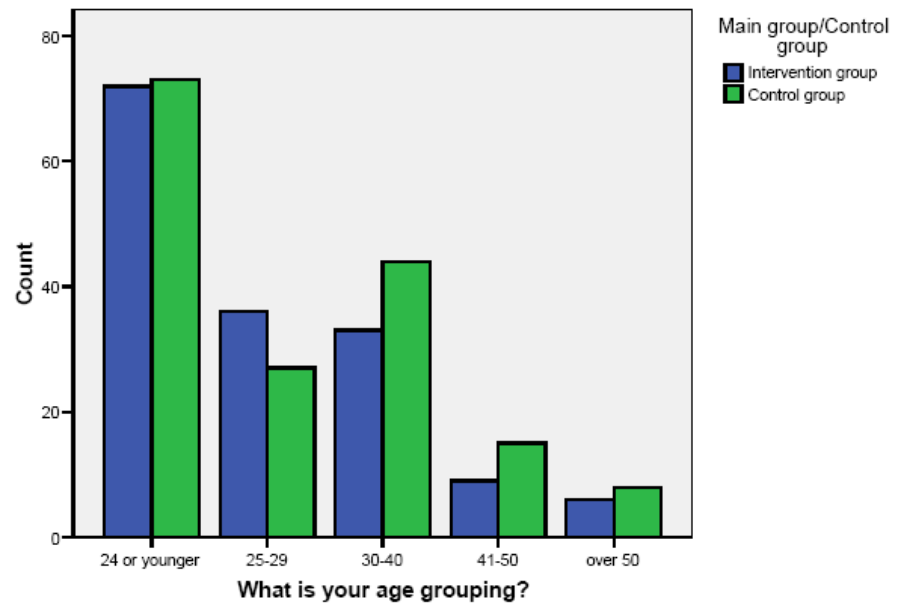
Variance between Intervention and Control Group

Personal Background

Count

		Main group/Control group		Total
		Intervention group	Control group	
What is your occupation?	Manager	12	16	28
	Technical	20	23	43
	Teacher or Trainer	33	11	44
	Student	78	104	182
	Self employed	11	10	21
	Retired	1	0	1
	Unemployed	1	3	4
Total		156	167	323

Bar Chart



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Analysis of Collected information Variance between Intervention and Control Group

Crosstab

Count

		Main group/Control group		Total
		Intervention group	Control group	
To what extent have you used advanced technological equipment in your professional life?	Not at all	1	1	2
	Very little	8	8	16
	Little	15	11	26
	Quite a bit	78	81	159
	A lot	54	64	118
Total		156	165	321

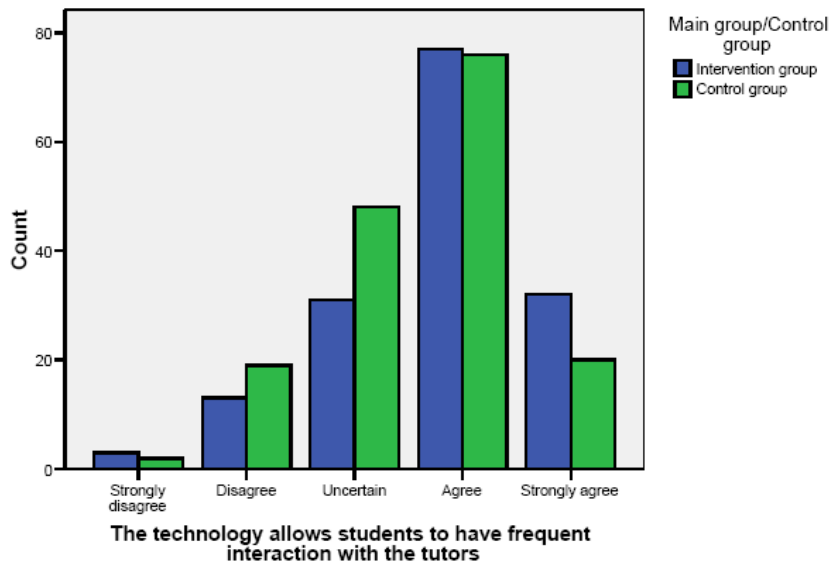
Count

		Main group/Control group		Total
		Intervention group	Control group	
Have you had to change your way of working because of technological developments?	No	48	52	100
	Yes. Once	15	27	42
	Yes, more than once	93	86	179
Total		156	165	321

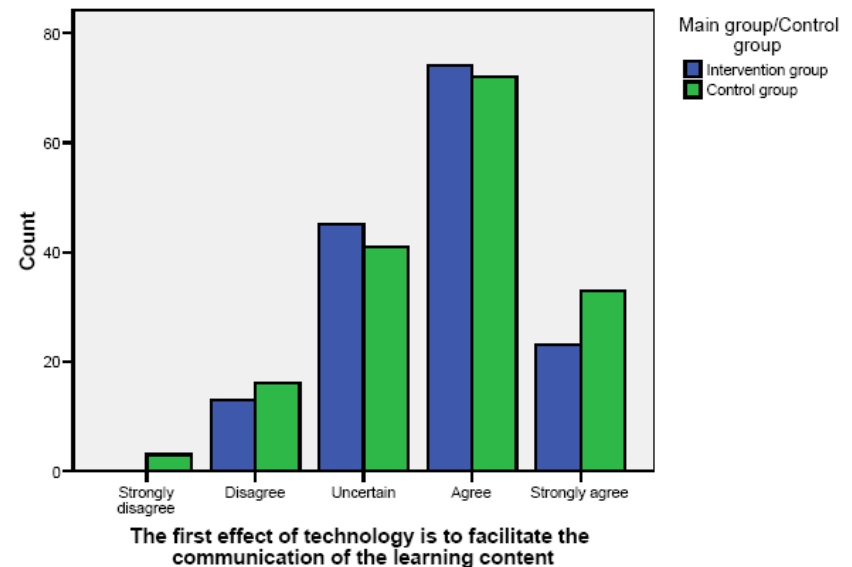
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Analysis of Collected information Variance between Intervention and Control Group

Bar Chart



Bar Chart



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- most respondents (more than 80%) *frequently use advanced technological equipment in their professional life;*
- a large percentage of respondents (more than 68%) have experienced that they *needed to change their way of working because of technological advances;*
- 53% of the sample believes that *the problems of access to learning for students with disabilities have been resolved thanks to technology*, as opposed to only a small portion (around 14%) that disagrees.
- nearly 56% disagree with the claim that *contacts between students and teachers can have the same intensity in the education as in face-to-face education*, but only around 23% agree with it.
- nearly half of the sample agrees that *online communication allows increased amounts of communication between teachers and students when compared with other forms of education*, while around 20% disagree with this statement;
- nearly 58% disagree with the negative statement that *only optimistic people think that the impact of technology on learning is beneficial* and only around 16% agree;

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- a large portion of samples (nearly 83%) agrees based on personal study experiences that the impact of technology on learning is valuable for their personal study.
- more than half of the population agrees that information and communication technology has usually been used to encourage us to be active participants in learning with only a small portion (around 13%) disagreeing;
- more than 55% agree that ICT has been used to support the development of higher level thinking skills such as synthesis and problem solving, while only around 10% disagree with this;
- again more than 63% agree that ICT has been used to support more individualized learning programs tailored to our own individual needs, around 12% disagree;
- a majority of respondents (around 85%) agree that learning is enhanced when text and pictures are integrated in a multimedia environment;
- around 75% agree that educational games motivate learners and contribute to developing skills such as teamwork;

The role of technology in eLearning - Summative Conclusions

- 1.The profile of our responders shows that we obtained a good representation of age (88,2% to 40 years, actively working people), gender (half male, half female) and personal background (if we have in mind, that we investigate the role of ICT for educational purposes and students could be actively working people), of the population engaged in e-learning activities.
- 2.Presented results show that responders in our sample held a fairly positive view of the different advantages that ICT can bring to learning and education. However, this positive view of ICT was accompanied by a rather positive attitude towards learning with traditional education methods and one which questioned the value of ICT in education. A closer inspection of the answers on the individual questions reveals that the responders were especially interested in the use of ICT for purposes of information exchange, such as 'to communicate with the tutor' and 'to share information and ideas with people from the team'. If ICT is to be used in an educational context, our responders specifically expressed doubts about the quality of the human interaction when there is no face-to-face contact.
- 3.Analysis of the results show that the responders attached importance to all the opportunities that ICT offered, though the 'facilitating contact and information exchange' received most support.
- 4.The responders think it important to use ICT in order to 'develop employability skills such as teamwork, problem solving, self-learning capability, presentation skills, etc.'. They attribute the same importance to use of ICT in order to 'develop a more collaborative approach to learning'.
- 5.In general, attaching importance to above categories of opportunities was positively related to a 'positive perception of the different advantages ICT can bring to learning and education' and negatively related to 'negative attitude towards learning with ICT'. This implies that the responders with a more positive attitude towards the use of ICT in education attached more importance to the different opportunities ICT can offer in these two issues. In contrast, the responders with a more negative perception of ICT, and who adhered more to traditional methods, agreed less with these two categories of opportunities offered here.

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Thank you