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# Appendix-1 –Survey for the lecturers

**Analysis of the effectiveness of collaborative e-Learning in Sri Lankan university education**

*Dear Participant,*

*As part of my MBA, I have selected a research on analysing the effectiveness of collaborative e-learning in Sri Lankan university education. The research is conducted among the lecturers and assistant lecturers of the National universities of Sri Lanka.*

*You are kindly invited to participate in this research and your responses will be strictly confidential. Please note that the data from this research will be used only for academic purpose in an aggregate basis without individualizing. Therefore, your prompt and valuable support is highly appreciated.*

*If you have further clarifications, feel free to contact me on: ilhavanchi@gmail.com*

*Thanking you in advance,*

*Ilhavanchi Kanaganayagam,*
*MBA (IT) 2012 -University of Moratuwa*

**For the below questionnaire, collaborative e-learning in university education is defined as the learning using any electronic tools or any electronic resources by keeping the lecturer-student interaction and student-student interaction synchronously or asynchronously.**

**Along this questionnaire, the terms used will be denoted as follows:**
**CeL –Collaborative e-Learning**
**TCL –Traditional Classroom Lecturing**

**Section A**
All questions in this section are mandatory

1. **Please indicate your age** *
   ○ Below 25 years
   ○ 25-30 years
   ○ 30-35 years
   ○ 35-40 years
   ○ 40-45 years
   ○ 45-50 years
   ○ Above 50 years

2. **Please indicate your gender** *
   ○ Male
   ○ Female

3. **How long you practice e-learning in a collaborative way for the university lecturing?** *
   ○ Not using any sort of CeL
   ○ 0-2 year(s)

○ 2-4 years

○ 4-6 years

○ 6-8 years

○ 8-10 years

○ More than 10 years

**4. Please select current university** *Select the university where you started to practice CeL.

○ University of Moratuwa

○ University of Colombo

○ University of Peradeniya

○ University of Sri Jayewardenepura

○ University of Kelaniya

○ University of Jaffna

○ University of Ruhuna

○ Eastern University

○ South Eastern University

○ Rajarata University

○ Sabaragamuwa University

○ Uva Wellassa University

○ Wayamba University

○ University of the Visual & Performing Arts

○ Open University of Sri Lanka

○ Other: [        ]

**5. What is your university education level?** *

○ BSc graduate

○ PG Dip /MSc graduate

○ Doctorate (PhD)

○ Other: [        ]

**6. Please select the field you are lecturing** *

○ Engineering

○ Medicine

○ IT (Information Technology)

○ Physical Science

○ Management

○ Accounting

○ Arts

○ Other: [_____]

**7. For how many modules (subjects) you are using CeL in a Semester (or term)? ***

○ Not using CeL for any subject

○ 1 - 3 subject(s)

○ 4 – 6 subjects

○ 7 - 9 subjects

○ 10 - 12 subjects

○ More than 12 subjects

**8. How many hours per week in total you spend on e-Learning? ***

○ 0-5 hours

○ 5-10 hours

○ 10-15 hours

○ 15-20 hours

○ More than 20 hours

**9. Out of the time you spend on e-Learning, how much of time you are spending on CeL? ***

○ 0-20%

○ 20-40%

○ 40-60%

○ 60-80%

○ 80-100%

**10 (a). Please tick the production tools from the below checklist which you used in CeL. ***Production tools are used during the design and development phase of e-Learning.

☐ Presentation Tool (Power point, Slideshare, etc.)

☐ Simulation tool (Tool used to simulate the execution of a system represented by a given model)

☐ Content management system (a computer program that allows publishing, editing and modifying & maintaining content)

☐ Video editing tool

☐ Graphic tool

☐ Audio editing tool

☐ Animation tool

☐ Other: [____]

**10 (b). Please tick the learning tools from the below checklist which you used in CeL. *Learning tools are used during the delivery of the e-Learning.**

☐ Moodle

☐ Wiki (except the Wiki in Moodle)

☐ Weblog (except the Weblog / Journal in Moodle)

☐ Online sources (downloaded videos, notes, etc.)

☐ Online conferencing (Skype, Hangout, Online chats, etc.)

☐ Social Media (Facebook, Yahoo, YouTube, etc.)

☐ Virtual classroom

☐ Online whiteboard

☐ Other: [____]

**Section B**
All questions in this section are mandatory.

**Please rate your level of agreement with the below statements after you started CeL in your university education.**
**If the statement is highly agreeable, select 'Strongly Agree' option.**
**If the statement is not agreeable at all, select 'Strongly Disagree' option.**
**If you neither agree nor disagree, then select the 'No opinion' option. ***

| | Strongly Disagree | Disagree | No opinion | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Interaction with the students increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 2. Interaction with the other lecturers increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 3. Forming new contacts with lecturers & professionals outside the classroom increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 4. Awareness about different | ○ | ○ | ○ | ○ | ○ |

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| | Strongly Disagree | Disagree | No opinion | Agree | Strongly Agree |
|---|---|---|---|---|---|
| e-Learning tools increased in CeL than it was in TCL | | | | | |
| 5. Sharing the knowledge & learning materials with the students through e-learning tools increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 6. Usage of social media such as Facebook, YouTube, Google Hangout, etc. for academic purposes increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 7. Your motivation to lecturing has increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 8. The convenience (accessibility, usability) of the learning environment increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |

**Section C**

Please specify your answers to the following. Questions 1, 2 & 3 are mandatory. Question 4 is optional.

1. **Please mention any benefits you experienced on CeL compared to TCL, which is not covered in this questionnaire.** *

2. **Please mention the challenges you experienced on CeL compared to TCL.** *

3. **Please mention the improvements needed in the way, about how current Sri Lankan universities practicing CeL?** *

4. **Do you want to specify anything further about CeL in Sri Lankan universities?**

# Appendix-2 – Survey for the students

**Analysis of the effectiveness of collaborative e-Learning in Sri Lankan university education**

*Dear Participant,*

*As part of my MBA, I have selected a research on analysing the effectiveness of collaborative e-learning in Sri Lankan university education. The research is conducted among the undergraduate students and post-graduate students of the National universities of Sri Lanka.*

*You are kindly invited to participate in this research and your responses will be strictly confidential. Please note that the data from this research will be used only for academic purpose in an aggregate basis without individualizing. Therefore, your prompt and valuable support is highly appreciated.*

*If you have further clarifications, feel free to contact me on: ilhavanchi@gmail.com*

*Thanking you in advance,*

*Ilhavanchi Kanaganayagam,*
*MBA (IT) 2012 -University of Moratuwa*

**For the below questionnaire, collaborative e-learning in university education is defined as the learning using any electronic tools or any electronic resources by keeping the lecturer-student interaction and student-student interaction synchronously or asynchronously.**

**Along this questionnaire, the terms used will be denoted as follows:**
**CeL –Collaborative e-Learning**
**TCL –Traditional Classroom Lecturing**

**Section A**

All questions in this section are mandatory.

**1. Please indicate your age** *

○ Below 20 years

○ 20-25 years

○ 25-30 years

○ 30-35 years

○ 35-40 years

○ Above 40 years

**2. Please indicate your gender** *

○ Male

○ Female

**3. When did you start to use CeL?** *

○ Started in undergraduate 1st year

○ Started in undergraduate 2nd year

○ Started in undergraduate 3rd year

○ Started in undergraduate 4th year

○ Started in Post-gradate

○ Not yet started using

**4. Please select your university** (*If you are a post-graduate student, select the university where you started CeL. If not yet started CeL, select your current university).

○ University of Moratuwa

○ University of Colombo

○ University of Peradeniya

○ University of Sri Jayewardenepura

○ University of Kelaniya

○ University of Jaffna

○ University of Ruhuna

○ Eastern University

○ South Eastern University

○ Rajarata University

○ Sabaragamuwa University

○ Uva Wellassa University

○ Wayamba University

○ University of the Visual & Performing Arts

○ Open University of Sri Lanka

○ Other: ▢

**5. What is your current university education level? ***

○ Undergraduate student

○ PG Dip /MSc student

○ PhD Student

○ Other: ▢

**6. Please select your current field of study ***

○ Engineering

○ Medicine

○ IT (Information Technology)

○ Physical Science

○ Management

○ Accounting

○ Arts

○ Other: [            ]


**7. For how many modules (subjects) you are using CeL in a Semester (or term)?** *

○ Not using CeL for any subject

○ 1 - 3 subject(s)

○ 4 – 6 subjects

○ 7 - 9 subjects

○ 10 - 12 subjects

○ More than 12 subjects


**8. How many hours per week in total you spend on e-Learning?** *

○ 0-5 hours

○ 5-10 hours

○ 10-15 hours

○ 15-20 hours

○ More than 20 hours

**9. Out of the time you spend on e-Learning, how much of time you are spending on CeL?** *

○ 0-20%

○ 20-40%

○ 40-60%

○ 60-80%

○ 80-100%


**10 (a). Please tick the production tools from the below checklist which you used in CeL.** *Production tools are used during the design and development phase of e-Learning.

☐ Presentation Tool (Power point, Slideshare, etc.)

☐ Simulation tool (Tool used to simulate the execution of a system represented by a given model)

☐ Content management system (a computer program that allows publishing, editing and modifying & maintaining content)

☐ Video editing tool

☐ Graphic tool

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☐ Audio editing tool

☐ Animation tool

☐ Other: _____

**10 (b). Please tick the learning tools from the below checklist which you used in CeL.** *Learning tools are used during the delivery of the e-Learning.

☐ Moodle

☐ Wiki (except the Wiki in Moodle)

☐ Weblog (except the Weblog / Journal in Moodle)

☐ Online sources (downloaded videos, notes, etc.)

☐ Online conferencing (Skype, Hangout, Online chats, etc.)

☐ Social Media (Facebook, Yahoo, YouTube, etc.)

☐ Virtual classroom

☐ Online whiteboard

☐ Other: _____

**Section B**
All questions in this section are mandatory.

Please rate your level of agreement with the below statements after you started CeL in your university education.
**If the statement** is highly agreeable, select 'Strongly Agree' option.
**If the statement** is not agreeable at all, select 'Strongly Disagree' option.
**If you neither agree nor disagree, then select the 'No opinion' option.** *

| | Strongly Disagree | Disagree | No opinion | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Results increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 2. Self-study via freely-available internet resources increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 3. Writing skills improved in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 4. Reading skills improved in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 5. Speaking skills improved in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 6. Listening skills improved in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 7. Creative thinking skills | ○ | ○ | ○ | ○ | ○ |

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| | Strongly Disagree | Disagree | No opinion | Agree | Strongly Agree |
|---|---|---|---|---|---|
| improved in CeL than it was in TCL | | | | | |
| 8. Analysis skills improved in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 9. Problem solving skills improved in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 10. Quantitative reasoning skills improved in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 11. Interaction with the classmates increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 12. Interaction with the lecturers increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 13. Forming new contacts with lecturers, professionals & students outside the classroom increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 14. Awareness about different e-Learning tools increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 15. Sharing the knowledge & learning materials with the classmates through e-learning tools increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 16. Usage of social media such as Facebook, YouTube, Google Hangout, etc. for academic matters increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 17. Your motivation to study has increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |
| 18. The convenience (accessibility, usability) of the learning environment increased in CeL than it was in TCL | ○ | ○ | ○ | ○ | ○ |

**Section C**
Please specify your answers to the following. Questions 1, 2 & 3 are mandatory.

**1. What is your GPA (or Grade) for any semester you involved in TCL only?** *
If you do not know the GPA (or grade) or if you know only one subject's results, specify that

**2. What is your GPA (or Grade) for any semester you involved in CeL together with TCL?** *
If you started CeL from the 1st year onward (undergraduate or post-graduate), please specify.

**3. Do you think your grades improved due to the CeL practices?** *

**4. If you experienced an improvement in your grades, do you think there is the influence of any other factor than CeL?** If there is no improvement, please specify.

**5. Please mention any benefits you experienced on CeL compared to TCL, which is not covered in this questionnaire.**

**6. Please mention the challenges you experienced on CeL compared to TCL.**

**7. Please mention the improvements needed in the way, about how current Sri Lankan universities practicing CeL?**

**8. Do you want to specify anything further about CeL in Sri Lankan universities?**

# Appendix-3 – T Distribution Critical Values Table

| | One Tailed Significance level: | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 0.1 | 0.05 | 0.025 | 0.005 | 0.0025 | 0.0005 | 0.00025 | 0.00005 |
| | Two Tailed Significance level: | | | | | | | |
| df: | 0.2 | 0.1 | 0.05 | 0.01 | 0.005 | 0.001 | 0.0005 | 0.0001 |
| 2 | 1.89 | 2.92 | 4.3 | 9.92 | 14.09 | 31.6 | 44.7 | 100.14 |
| 3 | 1.64 | 2.35 | 3.18 | 5.84 | 7.45 | 12.92 | 16.33 | 28.01 |
| 4 | 1.53 | 2.13 | 2.78 | 4.6 | 5.6 | 8.61 | 10.31 | 15.53 |
| 5 | 1.48 | 2.02 | 2.57 | 4.03 | 4.77 | 6.87 | 7.98 | 11.18 |
| 6 | 1.44 | 1.94 | 2.45 | 3.71 | 4.32 | 5.96 | 6.79 | 9.08 |
| 7 | 1.41 | 1.89 | 2.36 | 3.5 | 4.03 | 5.41 | 6.08 | 7.89 |
| 8 | 1.4 | 1.86 | 2.31 | 3.36 | 3.83 | 5.04 | 5.62 | 7.12 |
| 9 | 1.38 | 1.83 | 2.26 | 3.25 | 3.69 | 4.78 | 5.29 | 6.59 |
| 10 | 1.37 | 1.81 | 2.23 | 3.17 | 3.58 | 4.59 | 5.05 | 6.21 |
| 11 | 1.36 | 1.8 | 2.2 | 3.11 | 3.5 | 4.44 | 4.86 | 5.92 |
| 12 | 1.36 | 1.78 | 2.18 | 3.05 | 3.43 | 4.32 | 4.72 | 5.7 |
| 13 | 1.35 | 1.77 | 2.16 | 3.01 | 3.37 | 4.22 | 4.6 | 5.51 |
| 14 | 1.35 | 1.76 | 2.14 | 2.98 | 3.33 | 4.14 | 4.5 | 5.36 |
| 15 | 1.34 | 1.75 | 2.13 | 2.95 | 3.29 | 4.07 | 4.42 | 5.24 |
| 16 | 1.34 | 1.75 | 2.12 | 2.92 | 3.25 | 4.01 | 4.35 | 5.13 |
| 17 | 1.33 | 1.74 | 2.11 | 2.9 | 3.22 | 3.97 | 4.29 | 5.04 |
| 18 | 1.33 | 1.73 | 2.1 | 2.88 | 3.2 | 3.92 | 4.23 | 4.97 |
| 19 | 1.33 | 1.73 | 2.09 | 2.86 | 3.17 | 3.88 | 4.19 | 4.9 |
| 20 | 1.33 | 1.72 | 2.09 | 2.85 | 3.15 | 3.85 | 4.15 | 4.84 |
| 21 | 1.32 | 1.72 | 2.08 | 2.83 | 3.14 | 3.82 | 4.11 | 4.78 |
| 22 | 1.32 | 1.72 | 2.07 | 2.82 | 3.12 | 3.79 | 4.08 | 4.74 |
| 23 | 1.32 | 1.71 | 2.07 | 2.81 | 3.1 | 3.77 | 4.05 | 4.69 |
| 24 | 1.32 | 1.71 | 2.06 | 2.8 | 3.09 | 3.75 | 4.02 | 4.65 |
| 25 | 1.32 | 1.71 | 2.06 | 2.79 | 3.08 | 3.73 | 4 | 4.62 |
| 26 | 1.31 | 1.71 | 2.06 | 2.78 | 3.07 | 3.71 | 3.97 | 4.59 |
| 27 | 1.31 | 1.7 | 2.05 | 2.77 | 3.06 | 3.69 | 3.95 | 4.56 |
| 28 | 1.31 | 1.7 | 2.05 | 2.76 | 3.05 | 3.67 | 3.93 | 4.53 |
| 29 | 1.31 | 1.7 | 2.05 | 2.76 | 3.04 | 3.66 | 3.92 | 4.51 |
| 30 | 1.31 | 1.7 | 2.04 | 2.75 | 3.03 | 3.65 | 3.9 | 4.48 |
| 35 | 1.31 | 1.69 | 2.03 | 2.72 | 3 | 3.59 | 3.84 | 4.39 |
| 40 | 1.3 | 1.68 | 2.02 | 2.7 | 2.97 | 3.55 | 3.79 | 4.32 |
| 45 | 1.3 | 1.68 | 2.01 | 2.69 | 2.95 | 3.52 | 3.75 | 4.27 |
| 50 | 1.3 | 1.68 | 2.01 | 2.68 | 2.94 | 3.5 | 3.72 | 4.23 |
| 55 | 1.3 | 1.67 | 2 | 2.67 | 2.92 | 3.48 | 3.7 | 4.2 |
| 60 | 1.3 | 1.67 | 2 | 2.66 | 2.91 | 3.46 | 3.68 | 4.17 |
| 65 | 1.29 | 1.67 | 2 | 2.65 | 2.91 | 3.45 | 3.66 | 4.15 |
| 70 | 1.29 | 1.67 | 1.99 | 2.65 | 2.9 | 3.43 | 3.65 | 4.13 |
| 75 | 1.29 | 1.67 | 1.99 | 2.64 | 2.89 | 3.42 | 3.64 | 4.11 |
| 80 | 1.29 | 1.66 | 1.99 | 2.64 | 2.89 | 3.42 | 3.63 | 4.1 |
| 85 | 1.29 | 1.66 | 1.99 | 2.63 | 2.88 | 3.41 | 3.62 | 4.08 |
| 90 | 1.29 | 1.66 | 1.99 | 2.63 | 2.88 | 3.4 | 3.61 | 4.07 |
| 95 | 1.29 | 1.66 | 1.99 | 2.63 | 2.87 | 3.4 | 3.6 | 4.06 |
| 100 | 1.29 | 1.66 | 1.98 | 2.63 | 2.87 | 3.39 | 3.6 | 4.05 |
| 200 | 1.29 | 1.65 | 1.97 | 2.6 | 2.84 | 3.34 | 3.54 | 3.97 |
| 500 | 1.28 | 1.65 | 1.96 | 2.59 | 2.82 | 3.31 | 3.5 | 3.92 |
| 1000 | 1.28 | 1.65 | 1.96 | 2.58 | 2.81 | 3.3 | 3.49 | 3.91 |
| Infinity | 1.28 | 1.64 | 1.96 | 2.58 | 2.81 | 3.29 | 3.48 | 3.89 |