Proceedings of the 12th Annual Conference on Higher Education in Sri Lanka

Quality Assurance in Higher Education for Effective Learning

Jointly Organised By

Staff Development Centre (SDC), University of Wayamba
and
Sri Lanka Association for Improving Higher Education Effectiveness (SLAIHEE)

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Sri Lanka Association for Improving Higher Education Effectiveness (SLAIHEE)

Conference Theme

"Quality Assurance in Higher Education for Effective Learning"

Friday 17th June 2016

8.30 am to 2.00 pm

Wayamba University of Sri Lanka

SDC – SLAIHEE Conference 2016

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12th SDC - SLAIHEE Conference
On
"Quality Assurance in Higher Education for Effective Learning"

Friday 17th June 2016, 8.30am to 2.00pm
Wayamba University Student Centre, Wayamba University of Sri Lanka
(the documents / materials of this conference are available at www.slaihee.org)

WELCOME TO THE CONFERENCE

The first SDC – SLAIHEE Joint Annual Conference was held in 2005 with the theme "Teaching to put students first". Since then, this conference has become an eagerly awaited event in the annual calendar, probably because it is the only forum that brings together academics from all Departments of all Universities and Degree-awarding Institutes, in both the state and private sector of Sri Lanka. The conference is the only forum to showcase original research in the field of Higher Education that encompasses all disciplines and spans generic interests. Abstracts for presentation in past conferences have included such varied topics as student ethics, problem-based learning, learning styles, peer evaluation, weblogs, learning management systems, feedback, English language and attitudes. It, therefore, crosses boundaries between disciplines and specialities, finding common ground in issues of facilitating learning in higher education.

While SLAIHEE conducts activities throughout the year with the aim of improving higher education effectiveness, the highlight is undoubtedly the annual conference. This year, too, the conference will be of great interest to academics as a number of interesting papers featuring a variety of innovations such as emotional intelligence and teaching proficiency, electives, learning styles of students, listening and searching to foster active learning, human centred design and e-learning will be presented. Abstracts have been submitted by academics from universities throughout Sri Lanka and have been peer reviewed by two reviewers prior to acceptance.

This twelfth SDC – SLAIHEE conference 2016 is being organized jointly by the SDC of the Wayamba University of Sri Lanka and SLAIHEE. The SDC of WUSL has been an innovator in training university and other staff in Sri Lanka. A group of academics formed SLAIHEE as an independent national organization committed to facilitate improvement of life skills, performance capabilities and attitudes of university students and staff.

The theme of this year's conference is "Quality Assurance in Higher Education for Effective Learning" *(for previous conference themes and proceedings, please visit www.slaihee.org).*

The Keynote Speaker at the conference will be Professor Narada Warnasuriya who is the Senior Professor of Paediatrics at the Sir John Kotelawala Defence University (KDU). He is also the Emeritus Professor of Paediatrics at the University of Sri Jayawardenepura (USJP). He was formerly the Senior Professor of Paediatrics, Dean, Faculty of Medical Sciences and Vice Chancellor at the USJP. Prof Warnasuriya was the Team Leader of the panel of authors who prepared the Manual for Institutional Review of Sri Lankan Universities.

His keynote speech on "Quality Assurance in Higher Education for Effective Learning" will be of great value to junior and middle level academics, as the Ministry of Higher Education is placing great stress on implementing and measuring QA at universities to ensure measurable quality higher education.

The conference is of particular interest to all those with a concern and commitment to the quality and fate of Higher Education in Sri Lanka, including;

- lecturers, managers and administrators in Higher Education
- educational and staff developers
- policy makers
- academic staff

We hope you have an extremely enjoyable experience that will motivate all of us to enhance the quality and usefulness of the higher education experience.

From SDC WUSL and SLAIHEE – a big thank you for your participation, to the presenters and to Prof Narada Warnasuriya for his Keynote speech, Prof S J B A Jayasekara, Vice Chancellor, Wayamba University of Sri Lanka and all the special invitees. The reviewers are thanked for their speedy and efficient reviews.

The Conference Organising Committee;

Dr Enoka Corea – University of Colombo
Mr Ajith Jayaweera – Wayamba University of Sri Lanka
Dr T Sivakumar – University of Moratuwa
Dr Iroja Caldera - University of Colombo
Ms Shrinika Weerakoon - University of Colombo
Dr Prasanna Ratnaweera – Open University of Sri Lanka
Dr Rapti de Silva – University of Moratuwa
Mr Hasith Kandaudahewa - University of Colombo

Cover page design - Biman Darshana Hettiarachchi, University of Moratuwa

Programme

8.30 am – Registration

Session 1

09.00 – 09.05am - **Welcome** by Dr Enoka Corea
President SLAIHEE

9.05 – 09.50am - **Keynote Address** by Prof Narada Warnasuriya
Team Leader, Manual for Institutional Review of Sri Lankan Universities

09.50 – 10.00am - **Address** by Guest of Honour, Prof SJBA Jayasekara
Vice Chancellor, Wayamba University of Sri Lanka

10.00 – 10.10am - **Vote of Thanks** by DrAjith Jayaweera
Director, SDC, Wayamba University of Sri Lanka

10.15 – 10.45am - **Tea**

Session 2

11.00am - Presentation & discussion of peer-reviewed papers
– **Parallel Sessions** A & B

12.40pm - for non-members: ***Lunch***

12.40pm - for members: **Annual General Meeting** of SLAIHEE
(Auditorium of the Faculty of Applied Sciences)
followed by lunch

SDC – SLAIHEE Conference, June 17th 2016 – Session Timetable

Venue	Hall A	Hall B
Chairpersons	*Dr T Sivakumar* *Prof SUKEkaratne*	*Dr Prasanna Ratnaweera* *Mr Dhanesh Liyanage*
Time	**Abstract #, Title and Author(s)**	**Abstract #, Title and Author(s)**
11.00 – 11.20am	**A 1** **How Assessment-linked Constructive Alignment can be used to Enhance Quality Assurance in Higher Education by Increased Study Success** S Weerakoon, Staff Development Centre, University of Colombo	**B 1** **Modifying teaching activities to ensure quality standards in an English degree programme** S Abayasekara D Mendis University of Colombo
11.20 – 11.40am	**A2** **A Method of Listening and Searching to Improve Student Understanding in Small Groups Lectures** HM Akila Jayasanka, ICT Center, Wayamba University of Sri Lanka DMTD Dissanayake, Department of Business Management, Wayamba University of Sri Lanka	**B 2** **Going Human Centered: Facilitating Creative Problem Solving Skills with 'Human Centered Design' (HCD) and 'Design Thinking' Approaches** G Beligatamulla, A Andree Department of Integrated Design, Faculty of Architecture, University of Moratuwa
11.40 – 12.00am	**A 3** **Preliminary study on Emotional Intelligence and Teaching Proficiency with special reference to the University Lecturers in Western Province of Sri Lanka** S Pathiratne, Faculty of Computing, ESOFT Metro Campus, Sri Lanka PABH Amarathunga, Faculty of Business Studies and Finance, Wayamba University, Sri Lanka	**B 3** **Enhancing student skills through student centred learning in large group teaching** HIU Caldera Department of Plant Sciences, Faculty of Science, University of Colombo

12.00 – 12.20pm	**A 4** **Students' Response to the Introduction of an Elective to the Medical Curriculum of a Private Medical School** R Susiriwardana V Perera N de Silva S Goonewardena Faculty of Medicine, South Asian Institute of Technology and Medicine (SAITM), Malabe	**B 4** **Improving English Language Skills of Adult Learners Using Technology in Classroom: A Language Course in English through E Learning** WMC Fernando KBVBR Gunathilaka BPA Jayaweera English Language Teaching Unit, Makandura, Department of Avian Sciences, Wayamba University of Sri Lanka
12.20 – 12.40pm	**A 5** **Evaluation of Different Learning Styles of 2nd Year Medical Undergraduates of the Faculty of Medicine, University of Colombo** E Corea WAMP Jayasiri AGS Nimesha Department of Microbiology, Faculty of Medicine, University of Colombo	**B 5** **Sensory Modality Preferences of Food Science Undergraduates and Influence of Gender, Academic Performance and Academic Level** T U S Peiris M Piratheeban Biostatistics Unit, Faculty of Livestock, Fisheries and Nutrition
12.40 – 2.00pm	**SLAIHEE AGM** and **LUNCH**	

Reviewers of papers;

Prof SUK Ekaratne, University of Colombo

Prof GIC Gunawardene, Open University of Sri Lanka

Dr Enoka Corea, University of Colombo

Prof Nelun de Silva, SAITM

Ms Shrinika Weerakoon, University of Colombo

Dr Rapti de Silva, University of Moratuwa

Mr Ajith Jayaweera, Wayamba University of Sri Lanka

Mr Dhanesh Liyanage, Wayamba University of Sri Lanka

Dr Prasanna Ratnaweera, Open University of Sri Lanka

Dr T Sivakumar, University of Moratuwa

Dr Iroja Caldera, University of Colombo

Ms Sajeewani Somarathna, University of Colombo

Prof Shironika Karunanayake, Open University of Sri Lanka

Paper submission and peer-review process: papers that appear in this Book of Abstracts are 'Extended Abstracts' and are in the form of 'full papers', made up of sections comprised of an Introduction, Methodology, Results, Discussion and Conclusions, References. Each paper has been accepted and printed after having undergone a thorough and rigorous peer-review process. An Extended Abstract had first been submitted together with a self-assessment Scoring Sheet. Each 'Extended Abstract' then underwent a double-refereeing process by two independent reviewers who provided referee reports and supportive feedback to be sent to authors justifying acceptance, improvement or rejection of each submission. A third referee was used whenever the first two referees were in disagreement. The "Papers Committee" met to discuss the reports of both referees and to approve sending the combined feedback to authors to accept, reject or to do modifications, if any, to the extended abstracts as recommended by both referees to meet the 'quality standards'. Authors had the option of not making the changes if they were able to justify why the referee-recommended modifications were not acceptable. Abstracts that were rejected, or not received by the deadline with the recommended modifications, have not been 'accepted' and do not appear in this Book of Abstracts.

All referees and presenters have, in this way, collaboratively contributed to enhance the quality of Higher Education in our motherland. Even where papers were not accepted, we hope the detailed feedback given would help authors to improve their subsequent writing and submissions.

My conference schedule;

Time	Hall (A or B)	Title	Author(s)
11.00 - 11.20 am			
11.20 – 11.40 am			
11.40 – 12.00 pm			
12.00 – 12.20 pm			
12.20 – 12.40 pm			
12.40 – 2.00 pm	**Lunch** & time-management plans		
	While having lunch, I will 'do':		
	Over any spare time, I will 'do':		

How Assessment-linked Constructive Alignment can be used to Enhance Quality Assurance in Higher Education by Increased Study Success

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1. Introduction

In degree programmes with semester-based examinations, undergraduates usually aim to pass all their chosen/allocated subjects within the allocated semesters. By doing so, they ensure degree completion within the stipulated time and display an ability to manage a 'smooth workload' distribution across the semesters. Such completion within a reasonable or stipulated time period ('time-to-degree') reflects 'study success' (Vossensteyn *et al*, 2015), assuring quality in Higher Education (HE) graduates with regard to self-management skills for 'study success'. However, when students decide to defer their studies and prolong their 'time-to-degree', this 'study success' quality suffers. If deferment decisions arise from curriculum delivery factors (i.e., assessment related information, linked to Constructive Alignment), and if they are modifiable without detriment to course quality, policy changes can lower deferment numbers, to restore and assure this HE quality.

Using a humanities degree programme of a Sri Lankan university as an example, this study examined the use of the assessment component of the Constructive Alignment model and student deferment decisions that led to lengthened 'time-to-degree'. Having analysed causal factors and reasons leading to lengthened 'time-to-degree', recommendations are made on how modified assessment strategies linked to using the Constructive Alignment could reduce deferment numbers and thereby ameliorate this loss in HE quality.

2. Methodology

In this paper, the degree programme is referred to as *X degree programme* and the academic department which offers that X degree programme is referred to as *Department Z*. This paper collected data on the reasons students of this department chose to defer assessments on getting to know the mid-semester assessment method they had to face in certain elective subjects in the X degree programme during the second half of the semester. Data were collected from academics and undergraduates involved in the X degree programme. There were 8 academics attached to Department Z including contract academics. The sample consisted of five academics (63%) who were available during the data collection period. The student sample consisted of 35 students spanning across all 4 years.

The Mixed Method was adopted in this study, because mixed method strengthens data collection and data analysis (Bryman, 2008). Morgan's (1998) priority and sequence criteria were considered and accordingly, qualitative data gained priority in this study. Both quantitative and qualitative data were collected from students and staff through a short survey questionnaire and interviews. The questionnaire, which also included open-ended questions, was administered and collected at the beginning of a common lecture where students of all four years attended. Semi-structured, in depth interviews were used to collect data from academics and a student who volunteered information. Interviews lasted an hour and some interviews were conducted over the telephone. All interviews were conducted by the researcher and respondents were requested to explain what students gave as reasons to defer courses and their assessments during the second half of the semester. Academics were also asked to explain their own mid-semester assessment

methods and the reasons for their respective selections. All respondents were requested to explain the 'learning experience' of the students in the university, with special focus on mid-semester assessment. The qualitative data were analysed through primary coding. The quantitative data collected for the study were analysed using percentages.

Due to ethical considerations, students who had deferred assessments were neither targeted nor identified when collecting data. The survey questionnaire did not have direct questions on or relating to deferment, for the same reason.

3. Results

The questionnaire had a 50% response because it was deployed at the beginning of the common lecture and since students came late (n=35), they could not participate. The assessment policy of the faculty, to which the Department Z affiliated, was that students' performances should be assessed at the middle and at the end of each semester, with 40% and 60% of marks allocated, respectively. The findings revealed that the practice of the academics in the department was to select one of three assessment methods for mid-semester assessments, i.e., written test, assignment and presentations. Written tests carried several questions requiring short answers or one or two questions that required essay-type answers. Assignment was a long essay with word count not strictly adhered to. The third mid-semester assessment was an oral presentation that required utilising slide presentations.

Students reading for Degree X usually came to know of the mid-semester assessment method only in the middle of semester, as this was when the lecturers decided which method/s to utilise as mid-semester assessment in their subjects. By this mid-semester time, students had already selected and followed the subjects and if the assessment method was not liked, students decided to defer the examination as they could no longer choose another subject.

The academics in this department selected mid-semester assessment methods depending on "the 'nature' of the subject", assessment methods used in the past, skills they want developed in students, assessment methods they felt comfortable with. Further, encouraging students "to learn beyond what was discussed in class", facilitating "independent learning by students" were also identified as reasons in selecting a method of mid-semester assessment. Even though these reasons can be considered valid contextually, students would be unaware of the nature of such reasons underpinning assessments, since Intended Learning Outcomes (ILOs) was not a factor considered in selecting a method to assess. The department has ILOs only at programme level and the staff opinion was that these were designed for the purpose of the department website, though however these were the only ILO indicators that students could view. When requested to justify why a particular mid-semester assessment method was selected, a recurring justification by academics was "this is how we have always assessed in this subject". "To save time" was another frequent reason, particularly in selecting presentations, because compared to written assignments which require several days to mark, presentations would be marked while students make their presentations. Group presentation is adopted if the class size is twenty or more. Again "to save time", as the number of presentations are less when presented as groups. The practice is to grant 10 minutes for each presentation regardless of whether the presentation is made by a group or by an individual. Plagiarism and free riding were identified by some academics as reasons that discouraged them from selecting presentations as an assessment

method. The academic who claimed that presentation was selected to facilitate developing "research skills" could not justify that selection. Thus, the decisions made by the academics in selecting assessment methods were not informed by a systematic process, including practices from the literature, relevant to the course outcomes. The interviewed academics could not name any other assessment method that they could have used as a mid-semester assessment method.

The department had a marking scheme designed to assess presentations that lecturers could use if they wanted and to adapt it in ways they thought appropriate. The students had been shown that marking scheme but only by some lecturers. According to the academics, student presentations are independently marked by two examiners using a marking scheme and the average mark is awarded to the student. However, the academics thought the students did not have confidence in the way they get assessed in presentations, which was also confirmed by the student-interviewee. This student stated that the student perception was that a better likelihood existed in being assessed fairly in written tests and assignments, compared to presentations.

Presentation was identified by academics as the only reason for some students to defer certain elective subjects in the second half of the semester. As stated above, it was in the middle of the semester the students came to know which assessment method they get for a subject and by then the period to register for new subjects in that semester had been past. The students who did not feel sufficiently confident to make presentations found a temporary solution in deferring the assessment on grounds that they would complete the subject next year. The hope was that, in the following year, they could get registered for an elective subject that may not have presentations or if the deferred subject was a compulsory core subject then it could be taught by another lecturer who would not use presentations as the mid-semester assessment. According to interviewees, the lack of confidence of students in presentation as an assessment method was not entirely because the students did not have presentation skills or due to fear of public speaking. It was mainly because the students were not confident about certain lecturers' skill in assessing presentations and students thinking presentations could not be assessed fairly, even when a marking scheme was used. The students were not given feedback after any of the mid-semester assessment methods.

Students identified that presentations were used as an assessment method for reasons such as to manage time, for convenience, to develop public speaking skills, personality and knowledge. One student stated that presentations can develop skills only sometimes but failed to identify any specific skill. All other students (97%) thought presentations improved skills. Some of the skills students identified as skills that presentations developed were ability to do public speaking, overcoming fear of public speaking, presentation skills, time management, ability to synthesize, ability to convince others, ability to share knowledge. They also identified confidence building, memorising, improving attitudes, engaging in learning also as "skills developed" through presentations. Academics held an opposing view and claimed that when preparing for presentations as well as in making presentations students do not manage time well, do not prioritise and synthesise, do not build an argument to convince the audience and do not show confidence. The academics stated that students make presentations only for marks.

4. Discussion and Conclusion

According to adult learning principles, for adults such as these undergraduates, to learn effectively, they need to see the relevance and importance of what they learn, including assessment. The students did not know the relevance and importance of mid-semester assessment methods, particularly presentations, as the academics had not communicated why presentations are used in assessment, such as by conveying and explaining ILOs to students. That "assessment drives learning" (*e.g.*, Biggs) had been noticed by the academics also, as reflected in their comment that students do presentations only for marks. Plagiarising and free riding commonly occur when presentations are done only for marks. The academics had failed to derive the benefit of that 'drive for learning', which they could have done, for example through Constructive Alignment (*sensu* Biggs, 1999). In using Constructive Alignment in course design, ILOs and assessments can be used to "communicate high expectations", which is one of the seven principles for good practice in undergraduate education (Chickering & Gamson, 1987). The other six principles for good practice in undergraduate education such as "staff-student contacts", "prompt feedback", were also not present in the X degree programme. In addition to conveying the importance and relevance of presentations, students need to be made confident about how they get assessed to prevent them from deferring a subject. To establish credibility of assessment, including presentations, assessment should be made transparent such as by using analytic rubrics, instead of a marking scheme with holistic rubric which X degree undergraduates had already questioned. The analytic rubric should be shared with the students at the start of the semester, giving them sufficient time to develop skills needed for their mid-semester assessment.

Thus, students deferring certain subjects in the middle of a semester could be reduced by Constructive Alignment use, such as by lecturers sharing ILOs, assessment methods, analytic rubrics, the relevance and importance of presentations, alternative learning / assessment methods and by giving prompt feedback. To do so, lecturers need to identify how assessment can be used to enhance student learning and HE skills, through Constructive Alignment.

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A Method of Listening and Searching to Improve Student Understanding in Small Groups Lectures

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1. Introduction

A role of a university student must be completely different from a pupil in a secondary education program. An undergraduate is a self-learner and must be a skillful sole to find new knowledge. Even though the knowledge is highly available in todays' information society, most of the students limit themselves only to the specific content provided by the lecturer. As a result of that students tend only to memorizing content or applying rehearsed formulae, without addressing actual process-skills as needed in professional practice (Schön, 1983). Further in the current system we experience that students are not instructed or empowered to enhance self-directed learning skills and to be a lifelong learner. To improve higher cognitive skills like analysis, evaluation, critical thinking and interpretation, the undergraduates must be guided through effective learning methods like student centered learning and problem based learning. To provide constructive learning experience to the students, they must be lead to search knowledge relative to the subject area which shapes their current understanding level.

Heavy theoretical content covered in most of the lectures conducted in universities discourage students in participating and make them sleep while listening to the lecturer. As a result of that most of the students find it difficult to acquire a good knowledge about subject theories and it reduces their innovative thinking; unfortunately, most of the undergraduates are not using internet as a resource to fill the gap in that understanding level.

With the emerging development of technology, laptops, tabs and smart phones have become devices which are highly available among young generation. According to the statistics of Department of Census and Statistics, one out of every four households owns either a desktop or a laptop computer in Sri Lanka and almost all undergraduates are having laptops in 2015 (Census and Statistics, 2015). Internet is a resource that provides uncountable content of knowledge in various formats including text, images, sounds and videos (Mudasiru, 2006). Further each and every university in Sri Lanka has provided high speed internet connections and Wi-Fi facilities. Therefore, this paper proposed a method which encourages students to search subject content in the Internet while they are listening to the lecture and make them active learners to achieve more understanding regarding the subject content.

2. Methodology

The sample was taken from undergraduates in their third year because third year students have good understanding in university lecturing methods and possess skills on using internet. For the data collection period a computer laboratory was used as the lecture room to facilitate every student to use internet. The same content was covered for two separate classes which have 75 to 80 students. The lecturing methods that traditional method and proposed listening and searching method were swapped between two groups to justify the result and to make it a

more ethical data collection. To measure the student's opinion regarding the tested method of delivering lectures was taken via feedback forms.

In the preparation phase of the methodology, two separate lesson plans of three hours were created for each session. One is created according to the new method and the other one as a normal lecture. The proposed method in this paper is to instruct students to search subject content or the topic which is being discussed in the lecture by using internet at the same time. Further they were guided by the lecturer by giving searching key words and asking to refer multimedia content including figures, animations and videos. Throughout the lecture session students were empowered to construct new knowledge about the subject and make themselves aware about real world application of the subject. To measure the success level of the methods 10 mints quizzes were given after every session. The same structured question papers were given to all the students in both groups per one session. The testing process was continued for ten sessions in one semester and the average marks achieved by all participated students for each session were plotted in to a bar chart. Considering all ten sessions the percentage of students who are achieving marks more than fifty was calculated separately for two delivering methods.

3. Results

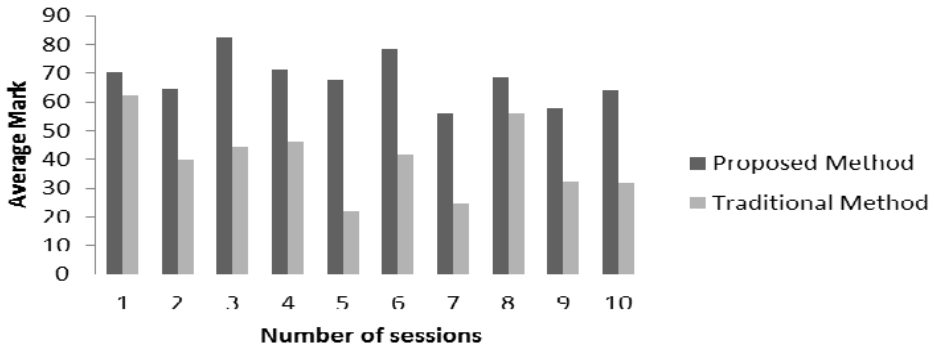

Figure 01: Average marks obtain for 10 sessions to proposed method and the traditional method. 75 to 80 students were participated for each session.

According to the results of each session, the marks achieved by the group involved with the proposed method were higher than those of the traditional method. The figure 01 shows that there are significant differences between averages obtained for the two methods in most of the sessions. By calculating average marks for all 10 sessions for each student, 82% of students had scored more than 50 by participating in the proposed method. In the traditional method only 53% of students could achieve marks more than 50. Standard deviation of the proposed method was 0.82 which is less than 1 and therefore it is significant which is compared to standard deviation value of 1.23 in the traditional method. This indicates the degree of influence is very high in the proposed method.

Even though the gaps between the average marks for both lecturing methods shown in figure 01 have significant differences, session 01 and 08 show closer values. That is because the understanding level of the students depends on both the delivering method and subject content. But it proves that in every session the proposed listening and searching method makes the content more understandable. Further it helps to keep listeners' interest towards the lecture and make them active while learning. According to the students' feedback, memorizing theoretical content have been easier for them in the proposed method.Searching

the subject content through internet while listening to the lecture lead them to discussions and the knowledge sharing at the same time.

4. Discussion and Conclusions

The lecturer must have vital role in this method because when the young students are allowed to use internet or other electronic devices such as phones, tabs, etc in the lecture, they tend to use them out of purpose to access social media, entertaining web content, and chatting. Every time the lecturer has to be aware of students' activities and keep them on the track. Asking questions, giving searching topics and walking around the lecture room while talking helps to make the method a success.

Empowering students to use internet to search subject content highly increase the understanding level and the interest on theoretical content of the subject. Student centered learning concept is completely applicable in this listening and searching method and the method is successful in delivering lectures to the undergraduates. This method is more effective for small group lectures because it requires a controlled environment to allow young students to use internet during a lecture.

References

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Preliminary study on Emotional Intelligence and Teaching Proficiency with special reference to the University Lecturers in Western Province of Sri Lanka

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1. Introduction

Excellence in Education and Educational organization is the need of the hour. The number of Lecturers produced at different level is gradually increasing to meet the demands of Education. The expectations of learners in Education can be fulfilled by the Teachers beyond large. The professors of American University, Myer J.D and Salovey P (1990), introduced and used the term Emotional Intelligence recently in order to enhance the overall development of the children in the society.

According to them, Emotional Intelligence is the research ability of sensing Emotions, linking them with thinking and understanding them in order to manage them together. The study of "Emotional Intelligence" shows promise in predicting educational competencies and positive life outcomes. It is argued that core factors describing teaching effectiveness can be submerged under the competencies comprising Emotional Intelligence.

"Teaching Proficiency" is defined as the effective performance of all observable teacher behaviors that bring about desired pupil outcomes". A competent teacher should possess qualities such as self-awareness building rapport, cooperative, motivating, empathetic and to keep balanced on distributive emotions besides the knowledge and the avid repertoire of teaching skills they possess in their subject. Hence the result of the study may be used to improve the teaching proficiency of lecturers by applying the appropriate strategies.

Three objectives have been determined for the present research as to study the relationship between emotional intelligence and teaching proficiency of university lecturers in Western province of Sri Lanka, to find out the whether there is a significant difference between the mean scores of emotional intelligence of lecturers in terms of their sex, subject, and type of the university and to find out whether there is a significant difference between the mean scores of teaching proficiency of lecturers in terms of their sex, subject, and type of the university.

2. Methodology

2.1Hypotheses

Three main hypotheses have been decided for the present research by assuming that there is no significant relationship between the mean scores of emotional intelligence and teaching proficiency of university lecturers, there is no significant difference between the mean scores of emotional intelligence of lecturers in terms of their sex, subject, and type of the university and there is no significant difference between the mean scores of teaching proficiency of lecturers in terms of their sex, subject, and type of the university.

2.2 Sample and Analysis of the study:

The investigators have chosen 60 lecturers from public and private universities in Western Province of Sri Lanka for the investigation using convenience sampling. Normative Survey method of research way employed to investigate the relationship and difference in various variable of the study.
Karl Pearson's product moment correlation Technique to study the relationship between the variables and differential analysis (t-Test) to find out the significant difference between the variable used as statistical analysis and SPSS 22 was used to analyze the data.

2.3 Research Tools:

The present study used two standardized questionnaires as the tools for data collection. Emotional Intelligence Scale developed by Goleman (1995) used which measures persons' ability to perceive, recognize, realize, tolerate and work with emotions using twenty one items. General Teaching Competency Scale developed by Passi & Lalita, (2011) also used for the present research which measures knowledge, attitudes, skills and proficiency of teachers in connection with teaching.

3. Results

Hypothesis: 1 There is no significant Relationship between the mean scores of Emotional Intelligence and Teaching Proficiency of University Lecturers.

Table 1. Findings of Hypothesis 1

Variables	N	Mean	S.D	D.f	Coefficient of correlation	Level of significance
Emotional Intelligence	60	43.73	4.62	118	0.62	Significant at 0.01 level
Teaching Proficiency	60	45.82	4.31			

Table 1 demonstrates that the calculated r– value (0.62) is greater than the table value at 0.01 level of significant and null hypothesis therefor rejected. So it is concluded that there is a significant relationship between the mean scores of Emotional Intelligence and Teaching Proficiency of University Lecturers.

Hypothesis: 2 - There is no significant difference between the mean scores of Emotional Intelligence of Lecturers in terms of their sex, subject, and type of the University.

Table 2. Findings of Hypothesis 2

Variable	Category	Subgroup	N	Mean	S.D	t- value	Level of significance
Emotional Intelligence	Sex	Male	35	41.71	4.64	0.26	Not significant at 0.05 level.
		Female	25	42.08	4.47		
	Subject	Arts	28	42.96	4.38	0.81	Not significant at 0.05 level.
		Science	32	42.01	4.76		
	Type of the University	Govt.	10	44.4	4.02	1.98	Not significant at 0.01 level
		Private.	50	41.6	4.34		

From the table 2, it is evident that the calculated t- value (0.2), (0.81) and (1.98) is less than the table value (1.96), (1.96) and (2.58) at (0.05), (0.05) and (0.01) level of significance. Therefore, null hypothesis is accepted. So it is concluded that there is no significant difference between the mean scores of Emotional Intelligence of Lecturers in terms of their sex, locality and type of the University.

Hypothesis: 3 There is no significant difference between the mean scores of teaching Proficiency of Lecturers in terms of their sex, subject, and type of the University.

Table 3. Findings of Hypothesis 3

Variable	Category	Subgroup	N	Mean	S.D	t-value	Level of significance
Teaching Proficiency	Sex	Male	35	43.38	4.41	1.56	Not significant at 0.05 level.
		Female	25	45.24	4.65		
	Subject	Arts	28	42.13	4.22	2.96	Significant at 0.01 level.
		Science	32	45.60	4.86		
	Type of the University	Govt.	10	43.72	4.73	0.65	Not significant at 0.05 level.
		Private	10	43.72	4.98		

From the table 3, it is evident that the calculated t- value (1.56), (0.65) is less than the table value 1.96 at 0.05 level of significance and the calculated value 2.96 is greater than the table value 2.58 at 0.01 level of significance. So it is concluded that there is no significant difference between the mean scores of Teaching Proficiency of Lecturers in terms of their sex, locality and type of the University.

Based on the analysis it was revealed that significant relationship exists between emotional intelligence and teaching proficiency of university lecturers. This means emotional intelligence and teaching proficiency are dependent on each other ,male and female lecturers do not differ significantly in their emotional intelligence and also subject, type of the university wise lecturers are not differing significantly in their emotional intelligence, there is no significant difference exists between the mean scores of teaching proficiency of lecturers belongs to sex and type of the university and a significant difference exists in the teaching proficiency of lecturers belongs to subject.

4. Discussion and Conclusion

Results depicted a significant and positive correlation between emotional intelligence and teaching proficiency showing interdependency between. It means emotional intelligence and teaching Proficiency correlated positively. Therefore, emotional intelligence and teaching proficiency is considered to be a driving factor which tremendously contributes for success in a person's life. Therefore, emotional intelligence will improve the teaching proficiency of university lecturers. Emotional changes inculcate skills among lecturers which directly help them in the profession of teaching. A higher degree of emotional changes is essential in order to help the present and future generations. It is recommended that organizing workshops and seminars for lecturers to deeply study about emotional intelligence as it is a valuable psychological concept which leads to effective teaching proficiency of lecturers.

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Students' Response to the Introduction of an Elective to the Medical Curriculum of a Private Medical School

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Introduction

State medical colleges in Sri Lanka have a 5 year curriculum which includes training in the basic sciences for the first 2 years followed by paraclinical and clinical exposure in the final 3 years. Given the constraints of an increasing spectrum of knowledge, varied student interests, and time limits on education in faculties, many medical schools now offer alternative pathways to improve their curricula which include behavioural and social sciences, early clinical exposure and elective courses that students can pursue based on their personal interests (Holmes et al., 2012). While a strong foundation in basic science and clinical medicine remains essential, the need for utilising educational time to train medical students in the domains of social sciences are increasingly recognized (Brass 2009). Electives can contribute to both the professional and personal development of medical students in specific areas of interest outside of the standard curriculum. (Stye et al., 2013) Preclinical medical student electives are prevalent at medical schools across the United States and have a significant impact on medical student education. (Agarawal et al., 2015). The bench mark statement of the UGC further emphasizes the need for student electives in the medical curriculum to enable students to pursue areas of interest other than those included in the medical curriculum. (Subject Benchmark statement-Medicine, UGC 2002). Though many of the state medical faculties have introduced elective programs to their curricula, there is a dearth of literature regarding the perceptions of students on introduction of electives program to their curricula. The Medical faculty of South Asian Institute of Technology and Medicine (SAITM) took a decision to introduce an elective to the curriculum as a constructive change so that students would be able to engage in a useful educational exercise related to healthcare outside the faculty.

The objectives of this study were to obtain feedback from the students of the 10th batch who participated in the electives program for the first time and utilise the feedback to improve the existing structure and format of elective program for subsequent batches.

Methodology

The elective program was introduced to the 10th batch of students in their fourth semester. The electives committee headed by the Dean, discussed with the students at length about the objectives of the program and how the students should approach this learning experience. They were given specific instructions that the learning experience should be conducted in a healthcare related institution outside the faculty and that they should not be involved in any way in management of patients in the institution they select. It was reiterated several times that this was not a substitute for their clinical training.

The students were given written instructions on the time frame, objectives of the program and the format of the report to be submitted on completion of the elective. Each student was also asked to fill a form to obtain information on the selected institution and to get the signature of the supervisor who will be in charge of the elective program. This form was to be submitted

to the Dean of the Faculty before commencement of the elective. Thereafter a letter of introduction was issued to each student signed by the Dean and the Registrar.

At the end of the elective program after submission of the reports, a questionnaire to obtain feedback was e mailed to the batch representative, to be circulated among all the students via e mail. The batch representative was asked to collect the e mails and send it to the electives committee in order to make the feedback anonymous.

Results

The elective program was evaluated by 67% of students (76/113). Majority (94%) of students believed that it was important to spend time on an elective in the medical curriculum and 86% believed it is a good use of time of the curriculum.

An overall average score of 4.26 out of 5 was given by the students on the degree to which the program objectives were met ('5'being the maximum score and'0' being the lowest score given for the achievements of the objectives).

A good score (4.5/5) was given for achieving objectives such as obtaining an overall idea about the organizational structure, functions of the institution and experiencing the day to day working of the institution. A score of less than average (4.02/5) was given for objectives such as, being able to explore an area of interest in depth, exposure to alternative and wider aspects of health care and broadening their perspectives on different aspect of healthcare in the country.

Table1. Students' grading on achieving objectives

	Objectives	**Average grade**
1	Explored an area of interest in depth	3.92
2	Were exposed to alternative and wider aspects of health care	3.89
3	broadened their perspectives on different aspect of healthcare in the country	3.89
4	Obtained an overall idea about the organizational structure and functions	4.46
5	experienced the day to day working of the institution	4.56
6	identified the strengths and weaknesses of the institution	4.14
7	communicated effectively with the inmates/ residents/patients/colleagues	4.17
8	observed the lifestyle of its inmates/ residents/patients	4.13

An average score of 4.5 out of 5 was given for support from the supervisor of the institution. More than 90% were very satisfied with the hospitality of the institution. Majority of students (90% and 86 %) stated that they had adequate information about what to expect in advance during elective and adequate support from SAITM respectively. There were mixed reactions regarding the workload, opportunities for self directed learning and report writing. Some (44%) students had faced difficulties or encountered problems during this period such as the negative image of SAITM in the community, lack of clinical knowledge, difficulty in finding appointments, lack of cooperation from staff, difficulty in adjusting to the weather and travel Most students had enjoyed communicating with staff, patients and inmates and getting to know the environment of the institution. Some of the activities they enjoyed most were

meeting new people, sharing feelings with inmates, improving knowledge, being able to understand importance of team work and field visits.

Many students felt the electives should be done after adequate clinical exposure to get the maximum benefit. Some of the suggestions to improve the elective program were to have a supervisor from SAITM, giving proper guidelines to write the report, allowing students do elective in groups and helping students to find attachments in different institutions.

Discussion and Conclusion

The curriculum change in the Faculty of introducing the elective program seems to have worked successfully when the feedback from the students was analysed. There were many helpful suggestions which the electives committee have paid heed to improve on the program for the next batch.

Based on the suggestion made by the students, 2-3 teachers have been assigned to a group of 20-24 students in the next batch due to commence their electives in June this year. This would support the students in their endeavour to do a good elective.

The suggestion made by some students to have the elective program after exposure to para clinical subjects will be considered in the future.

The elective programme enabled students to take charge of their learning by organising the elective program, achieving the objectives of the program, developing competencies in report writing thus encouraging self directed learning.

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Evaluation of Different Learning Styles of 2nd Year Medical Undergraduates of the Faculty of Medicine, University of Colombo

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1. Introduction

Confucius stated, in early 5th century BC, "Tell me, I will forget, show me, I will remember, involve me, I will understand (Gentry, 1990). As this quote denotes, for some students auditory input is valuable while some rely upon visual styles. And others learn best through kinesthetic means or use combinations of the above three. As nothing is fixed, one`s pattern of learning can change with time and experience (Samarakoon *et al.,* 2013).

Visual learners prefer to gain information in the form of pictures, graphs, flow charts and mind maps. Auditory learners abstract best from what they hear, and use methods such as listening to recordings, lectures and reading aloud. Read and write learners prefer to use lecture notes, textbooks, and other printed texts. Kinesthetic learners like to learn from real life experiences using multiple sensory modalities such as role playing, ward work, case discussions, etc. While some are unimodal learners, others use several learning styles in combination and are called multimodal learners (Lujan and DiCarlo, 2006).

Among the multifarious inventories available in the literature to assess learning style, the VARK questionnaire, which measures visual, aural, read/write and kinesthetic modalities is a feasible and validated one. This was developed in 1987 by Neil Fleming in Christchurch, New Zealand and was validated among 15,136 students in the United States (Leite *et al*, 2010). Not only does it help individuals to identify their own learning styles but it also provides guidance to maximize learning (Fleming and Baume, 2006).

Sri Lankan medical students have to adapt from the teacher-based learning style practiced at school to self-centered learning, a major challenge they have to face at the beginning of their undergraduate life (Samarakoon *et al*, 2013). If students are aware of their individual learning styles it would enhance effective learning. In addition, knowing students' preferred learning style will be helpful in developing better student oriented teaching materials in the medical curriculum (Hawk and Shah, 2007; Baykan and Naçar, 2007).

There is a scarcity of published data on learning styles among Sri Lankan medical students. A study assessing the progression of learning styles from undergraduate to postgraduate learning was conducted among Sri Lankan medical students but correlations between sex, academic performance and learning style were not assessed (Samarakoon *et al*, 2013).

Our study was performed to identify learning styles in2nd year medical students using the VARK questionnaire, and to determine any correlation between sex, academic performance and learning style. Academic performance was measured using the results of the Advanced Level (A-level) General Certificate of Education (GCE) examination, which is the entrance examination for Sri Lankan state universities, and the results of the Introductory Basic Sciences Stream (IBSS) examination which is held at the end of the first year of medical school.

We also assessed the level of satisfaction of the students regarding the different inputs used in immunology component of the Foundation Module.

2. Methodology

A pre-tested, self-administered VARK questionnaire was used to assess learning styles among consented 2nd year medical students of the Faculty of Medicine, University of Colombo. Ethics approval for the study was granted by the Ethics Review Committee of the Faculty of Medicine.

Using the VARK questionnaire, the style of learning was classified as unimodal or multimodal. Subcategories under unimodal learninginclude verbal, auditory, read/write and kinesthetic styles. Standard software (statistical package for social sciences- SPSS version 20.0) was used for data processing and analysis. The response rate was excellent with 183 out of 198 students returning the completed questionnaire.

3. Results

3.1 Descriptive statistics

Of the study population of 198 2nd yearmedical students, 183 participated in the study (response rate of 92.4%). Among them, 113(61.7%) were female. According to the IBSS results, 23(12.5%) obtained First Classes while 26 (14.1%) and 40(21.7%) obtained Second Class upper division and Second Class lower division honours respectively. The majority of the rest of the students, 61(33.2%),had passed the IBSS examination at the first attempt and only 33(17.9%) participants required further attempts.

3.2 Learning styles

Of the five learning styles, the majority (n=123, 66.8%) had a multimodal learning style. The rest, 61(33.2%), were unimodal learners, out of which the greatest number were aural learners (n=28, 15.2%) while 7 (3.8%) and 19(10.3%) were visual and kinesthetic learners respectively. The least used learning style was read/write which was only used by 6(3.3%) students.

The majority in each sex, 69.0% (n=78) of females and 64.2% (n=45) of males, were multimodal learners. Out of female students, 19(16.8%) were aural learners whereas from the males, 9 (12.8%) were aural learners. Female kinesthetic learners were 7.9% (n=9) compared to 14.2% (n=10) of male kinesthetic learners. There were 3.5% (n=4) of female and 4.2% (n=3) of male visual learners. Female and male read/write learners were 2.6% (n=3) and 4.2% (n=3) respectively. A Mann-Whitney U test conducted to evaluate whether there was asignificant correlation between learning styles and sex of participants did not reveal any correlation ($p>0.05$).

Analysis of variance (ANOVA) was conducted to compare learning styles and academic performance using results obtained at the IBSS examination and island rank at GCE/AL examination.This revealed no significant difference between results at the IBSS examination ($p=0.981$), island rank ($p=0.289$) and learning styles.

3.3 Level of satisfaction regarding different teaching inputs in the immunology lecture series

A clear majority were satisfied with the visual (n=155, 78.2%), aural (n=130, 65.8%) and read/write (n=163, 82.9%) inputs provided during the immunology lecture series but only 53.5% (n=106) were contented with the kinesthetic learning materials available.

4. Discussion and Conclusion

Using the VARK questionnaire, we determined the preferredlearning styles of 2nd year medical students. The clear majority were multimodal learners(66.8%) which was compatible with other studies done using the VARK questionnaire in Sri Lanka as well as in other countries including USA, Turkey and the West Indies (Samarakoon *et al.*, 2013; Lujan *et al.*, 2006; Leite *et al.*, 2010). Among unimodal learners, aural learners (46%) predominated, followed by kinesthetic learners (31.1%). A previous study done in Sri Lanka, showedreconcilable results,with predominant aural learners (Samarakoon *et al.*, 2013). However, studies done in other geographical locations, such as in USA among 250 medical students and in Turkey with a sample of 162 medical students, revealed different results, the majority being kinesthetic learners while onlya minor percentage were aural learners(Lujan and DiCarlo, 2006; Baykan and Naçar, 2007). Similar results were found in a study among 443 nursing students in Australia (D'Amore *et al.*, 2012). Dissimilarity of our students to other international students can be attributed to the teacher-based learning that is used as the mainstream teaching method during primary and secondary education.

Identifying the relationship between sexes and learning styles is an area of active research. In both the female (69.0%) and male (64.2%) subgroups in our study, the majority were multimodal learners. A study done among physiology students in Florida, USA, with a similar population of female and malerespondents also displayed a similar pattern of learning styles (Dobson, 2010).

Among the unimodal learners in our study, the majority were aural learners followed by kinesthetic learners in both sexes. However, there were more males who were kinesthetic learners (40%) compared to females (25.7%) and less male learners who were aural learners (36%) compared to females (54.3%).However, there was no statistically significant association between sex and learning style. Most studies, including studies done among medical students in India and Turkey, also showed no influence of sex on learning style (Baykan and Naçar, 2007; Urval *et al.*, 2014). However, a study conducted in Michigan, USA, where the majority of females were unimodal learners while males were multimodal leaners, showed a significant relationship between sex and learning style (Wehrwein *et al*., 2007).

Results of our study showed that there was no significant difference in academic performance between students having different learning styles. Studies carried out in medical students in Pakistan and India also showed no association between learning style and academic performance (Urval *et al*., 2014; Chaudhary *et al*, 2015). However, a statistically significant difference in the mean values of grade point average (GPA) in relation to the students' learning style preference was seen in a study conducted among dental students in Saudi Arabia($p=0.019$). In that study, unimodal learners had lower GPA than multimodal learners (Al-Saud, 2013).

For the purpose of implementing results of the study to upgrade the immunology lecture series which is composed of lectures, tutorials and small group discussions, we gathered information on students' level of satisfaction through the second part of our questionnaire. As the majority of our student population comprise multimodal learners, lectures should use a blend of visual, auditory, reading/writing, and kinesthetic activities for teaching. A clear majority of students were satisfied regarding the visual (78.2%), aural (65.8%) and read/write (82.9%) learning inputs used in the module.However, only 53.5% were satisfied about the kinesthetic aids used. To expand the kinesthetic aids used in the module, we can incorporate

some real life-based scenario discussions, role playing, games or simulations. These activities will promote working in groups as well as increase motivation and enthusiasm.

In conclusion, the majority of students were multimodal learners, in both female and male subgroups. Preferred learning style was not influenced by sex and did not influence academic performance. Knowing the preferred learning styles of students can enable academic staff to enrich the learning experience. The majority of the students were contented with the various inputs provided during the immunology lecture series.

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Modifying teaching activities to ensure quality standards in an English degree programme[1]

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Introduction

The Foreword to the *Manual for Institutional Review of Universities and Higher Education Institutions* (HEIs) broadly defines Quality Assurance as "the means by which Universities and HEIs can guarantee with confidence that the quality of education provision and the standards of awards are being maintained and advanced" and observes that "producing a twenty first century graduate requires a shift towards Outcome Based Education (OBE) and student-centred learning (SCL)" in view of current employment market demands. While this argument is theoretically sound, to what extent can it be achieved in practice? For students following courses leading to a degree in English, we argue that, for such learning to take place, a baseline threshold of content (subject) knowledge as well as a high level of English language proficiency are necessary, as an integral part of the discipline lies in explorations of literature as well as the use of language.

The purpose of this paper is to present interventions taken to ensure quality at the foundational level of a degree programme once it was observed that a group of first year undergraduates enrolled in a 1st year poetry course lacked adequate training in the analysis of literature as well as the English language proficiency required to achieve the intended learning outcomes**.** Given that the degree programme adopts a ladder approach to learning, with higher level courses building on the introductory ones, first year courses are designed to give students a strong foundation from which they can develop into independent thinkers and learners. Interventions to the existing teaching-learning process therefore became a necessity to ensure that students could obtain this foundational knowledge and training.

Providing ancillary support for students identified either as disadvantaged or in some way lacking in a required competency (E.g.: English language proficiency) is not a new concept, and in some countries such initiatives have legal implications for schools, such as the No Child Left Behind Act (NCLB) which was signed into law in the United States in 2002. Arising out of a concern that the American education system was no longer internationally competitive, the NCLB Act holds States responsible for the academic progress of all students in relation to skills and proficiencies identified by Congress (Klein, 2015). In Sri Lanka it has long been recognized that university graduates, especially those in the Arts and Humanities, lack a competitive edge in the local job market, with low levels of soft skills and English language proficiency cited as major contributing factors. Universities therefore have a responsibility to ensure that enhancement of these skills is targeted in the teaching-learning process.

The broad research question of this study is how quality can be ensured in a programme of study if the required thresholds of content knowledge and language proficiency do not exist. We have observed that our student demographic is changing, and that for many students who enter the

[1] In order to keep the number of words in the title within manageable limits, "to accommodate student needs" has been left out as it is self-explanatory. The word "language" has been left out as the degree programme focuses on literature, not language teaching.

University to obtain a BA in English, English is not their dominant or first language. Ensuring quality and satisfactory learning outcomes therefore, has to include a shift towards accommodating and teaching students for whom English is a second language. Thus the interventions discussed in this paper draw from basic principles of Content and Language Integrated Learning (CLIL), a competence-based teaching approach which combines the learning of both content and a second language into a single educational experience (Mehisto, March and Frigols, 2008). CLIL practices were developed to be used in situations where a second language is used to learn or practice content in a particular subject or discipline (Met, 1998); such a pedagogical method is therefore particularly applicable to the situation described in this paper.

Methodology

The problem identified was studied by observing student performance in the classroom as well as taking into account the marks obtained for two continuous assessments which are a part of the Senate-approved total assessment of a course titled *Introduction to Poetry and Poetry Criticism*. An early observation was that student engagement in class discussions was very low. Responses to questions asked in class in order to gauge learning outcomes indicated that students were unable to go beyond the literal to the metaphorical meaning behind lines of poetry. For instance, in Emily Dickinson's poem "I felt a Funeral, in my Brain", the narrator says, "And then I heard them lift a Box/ And creak across my Soul"; when asked what these lines meant, one student responded that the word "soul" indicated a place.

The first graded assignment given comprised questions on two "unseen" poems: "England in 1819," and "Composed upon Westminster Bridge, September 3, 1802". The students were given one hour to answer the following two questions: 1). Compare and contrast the two poems, paying attention to theme, tone and technique. 2). Explain which of the two poems you like better, and why.

The following is a selective list of language errors and other problems identified in student answers to the above questions. It will be noticed that there are two areas needing improvement – proficiency in English (i.e., language proficiency) and the ability to analyse and interpret a poem sensitively and accurately.

1. Lack of appropriate vocabulary and ability to express ideas accurately and intelligibly
2. Inaccurate grammar – article usage, misuse of prepositions, incorrect use of tenses, etc.
3. Inaccurate spelling
4. Word invention
5. Vagueness of expression
6. Misinterpretation of the text and inability to differentiate between the literal and the metaphorical
7. Inability to move beyond surface description to in-depth analysis

The Departmental practice is to give all students feedback (oral and/or written) on their performance after every assignment. However, an additional intervention in the form of a Writing Workshop was deemed necessary for the student group described in this study. All 13 students enrolled in the introductory poetry course were advised to attend the workshop; however, only six did so regularly. In addition, four other 1st year students (not enrolled in the

poetry course) attended the workshop voluntarily. The workshop began halfway through the semester and was conducted for approximately two months, with meetings of 1-1.5 hours each week. The content and structure of the workshop was based on the results of a needs analysis conducted with the students after their engagement in class was observed to be low. The needs analysis was conducted by asking students to list, in writing, their goals for the workshop (See Results section for a comprehensive list).

The procedures followed are given below[3], with the numbers on the left referring to each week:

1 A lecturer met students individually, and specific strengths and weaknesses in their in-class assignments were identified.
2 The students were met as a group, and common errors were discussed. Each student was asked to provide a brief profile of her background regarding English proficiency / learning and the goal/s she hoped to achieve by attending the workshop (needs analysis). At this session students were also asked to write a short essay on the quote "Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid" - Albert Einstein.
3 The organization of an academic essay was discussed, beginning with the thesis statement and moving on to paragraphing, topic sentences, etc. Next, errors (both language and structure) found in the essay task were discussed. Students were then asked to form a thesis statement for Langston Hughes' poem "Dream Deferred" by the following class.
4 Students were asked to exchange their thesis statements with a partner and identify strengths and weaknesses (peer review). This was followed by a discussion to which all students contributed ideas on how their thesis statements could be improved.
5 In order to check learning outcomes, students were given the choice of writing either a new thesis statement on Hughes' poem, or a thesis statement on another poem - D. H. Lawrence's "Snake," - which they had already studied in their poetry course. Students were also instructed to write a 2-3 page paper on their chosen literary work, using guidelines to writing assignments discussed in the workshop, and to produce a working introduction and working conclusion of their papers at the next workshop.
6 Each student was asked to read out her introduction, conclusion and thesis statement. The lecturer then discussed the strengths and weaknesses of each piece, with the whole class participating in the discussion.
7 The students wrote a draft of their papers taking the suggested improvements into account, and exchanged it with a peer. They then filled in a peer review sheet.
8 In pre-assigned pairs, partners discussed each other's drafts with the peer review sheet as a guide. They then met with the lecturer individually, to discuss their drafts further. They were also given the option of submitting a revised draft for feedback.

[3] While the class met as a group, the lecturer gave them one hour a week during which they had the option of meeting her on a one-on-one basis.

Results

The needs analysis conducted prior to the workshop elicited the following goals from the group, showing that our concerns about student competence at the beginning of the semester were not unfounded.

Improve grammar and academic vocabulary	Write with clarity and specificity
Improve organisation	Write exactly what one means
Improve literary analytical skills	Write a thesis statement
Improve time management at exams	Learn to use quotations effectively

It was noticed that the engagement in class discussion of the students who regularly attended the workshop markedly increased after the experience of commenting on their peers' work. But the in-class engagement of those who did not attend regularly remained low**.** Moreover, many of the students successfully identified some key strengths and weaknesses in their partner's work. The students' evaluation of the workshop was also rewarding in that every student felt that their goals had been met, and had suggested that the workshop run for a longer period the following year. However, it was noted that the vocabulary they had used to answer one question on the evaluation form reinforced our assessment of their lack of comprehension, stemming from not knowing the meaning of even basic English words. Students were asked to comment on the "pace of the workshop"; the following are selected responses showing that they did not understand the question:

"I would have preferred if this started at the beginning of the semester"

"First we wrote a thesis statement, then introduction, conclusion, and then the full essay"

"It would be better if we had more pace"

Only one student showed definite comprehension of the question, but even her language was somewhat faulty ("not too fast *nor* slow"). While such responses show that there still remain issues in comprehension, grammar and vocabulary after the workshop, there was improvement in most of the students' overall ability to present thoughts logically in an academic essay. Furthermore, the students' final examination marks show that all six students who attended the workshop have passed the first-year poetry course, as indicated by marks in the shaded cells in the table below.

Assignment 1 (20%)	Assignment 2 (20%)	Final Exam (60%)	Total (100%)
13	08	24	45
12.5	09	34	55.5
07	07	26	40
09	11.5	33	53.5
09	09.5	22	40.5
12	10	27.5	49.5
10	09	21	40
09	09.5	35	53.5
07	08	38.5	53.5
13	10	36	59
11.5	07	18.5	37
11	09	39	59
12	10.5	32	54.5

Discussion and Conclusions

Our initial premise that a certain baseline threshold level of both content knowledge and language proficiency is helpful in outcome-based education and student-centred learning is supported by the results of the Writing Workshop, which was introduced as an innovative 'best practice' to address the identified problem. It was also proved that increasing opportunities for peer learning and review in the classroom has a positive impact on both student confidence and learning outcomes. As requested by this pilot group of 1st year students, it is hoped that best practices such as this Writing Workshop can be included in the teaching process as a means of enhancing and maintaining quality.

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Going Human Centered: Facilitating Creative Problem Solving Skills with 'Human Centered Design' (HCD) and 'Design Thinking' Approaches

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1. Introduction

Present day, being technologically advanced and globally competitive, the world seeks individuals who would think differently with a set of creative skills to make things convenient to the user than were in before. In the global arena where everything is interconnected, students need to develop novel ways to compete in order to think critically, and solve comprehensive problems in a creative manner by incorporating human-centered considerations (Shute & Becker, 2010).

Somehow, most of the present day designs are not much convenient as they were designed to be for the end user. One could observe the many instances where the end user being frustrated and stressed out when even trying to complete a simple task (Abras, Maloney-Krichmar, & Preece, 2004). Isn't there a way to design objects that are more intuitive convenient and user-friendly for the end user? This begs the question, how and in which ways could an individual solve a problem creatively by aiding human-centered considerations during the design process? This paper thus delves inside 'Design Thinking' approaches to facilitate creative solutions to complex problems with Human Centered Design (HCD).

Multiple models of design thinking have emerged over the years, based on widely different ways of viewing design situations and using theories and models from design methodology, psychology, education, etc. Three types of thinking in design can be identified; Convention Based Design Thinking, Situation Based Design Thinking, Strategy Based Design Thinking (Lawson & Dorst, 2009). IDEO also has their own interpretation of 'Design Thinking' which combines together the desirability and convenience of a product in a humanly perspective. In which case the designer always puts the users at the very center of what they practice daily, which they refer to it as HCD. It is a creative approach to problem solving which begins with the user and ends with an innovative solution which caters to the users need (IDEO, 2012). However, design thinking depends on the creatives capability to take into account in tandem the human necessities and novel ways of living well, available resources, constrains and possibilities of a task or trade. The integration of these three causes demands the designer to be analytical, emphatic, rational, emotional, methodical and intuitive, oriented by means of plans and constraints, however spontaneous (Pombo & Tschimmel, 2005).

This brings up to the point where today's students are required to pursue 'Design Thinking' approaches in order to enable their creative thinking and logical reasoning skills, to solve complex, challenging problems and eventually produce better user-entered designs. In order to develop such skills and to enhance creativity, one option for educators is to facilitate 'Design Thinking' approaches in studios. Despite design thinking is an integral part of the fields of design and engineering; it can also instill a positive impact on modern day education since it helps to bring about the creative within each individual by engaging them in the process of problem solving. Since in an academic frame-work, students should be obliged to creative thinking, logical reasoning, and problem solving (Rotherham & Willingham, 2009).

It is imperative that the students who hold the future be prepared with a focus of creativity, innovation, critical thinking and problem solving. Much of today's education frame works hinder the possibilities of a student's ability to think creatively by forcing them to fill blanks of a standardized written exam. These kind of academic systems blunt a student's imagination and logical reasoning. Hypothetically, design thinking would rather be a strong alternative for this one-way-stream mundane education system and it would prompt the inner ability of students, to think differently and efficacious in its manner. This challenges students to solve complex problems that by all means have various viable solutions, by encouraging the students' ability to act as change agents.

According to Biggs and Tang (2007, p. 145), "the job of a teacher is thus not to help students 'be' creative, but to help [or facilitate] them create works, products, outputs, that are founded in the discipline or area and that add to it in an original way". In design pedagogy, Problem-based learning (PBL) and Outcome-based Learning (OBL) are extensively used. Consequently, in this study, in the project given to students, the outcome is itself an open-ended process, the product not being pre-determined at all. "When discussing TLAs for creativity, teachers are not assessing how creative people are, but the creative work that students produce" (Biggs & Tang, 2007, p. 228). Subsequently, this study investigates the research question of "How might we facilitate students in creative problem solving skill?"

2. Methodology

In order to implement this facilitation process into a real life scenario a 'design project' was extended to the level-3 undergraduates in the Product Design discipline of the Department of Integrated Design, Faculty of Architecture, University of Moratuwa. Sixteen students were engaged in the project and students were asked to identify the issues of the current available vegetable/fruit packaging which are being used for safe transportation and why it is not being implemented by the local farmers for their betterment. The problem could have been the packaging not being Human Centered. The framework for the project was to identify the issues with the Initial Mode of Transportation (IMT) and current packaging system and why the farmers/users are reluctant to utilize it in their practice, through which students learn the key components of the design thinking process (Empathize, Define, Ideate, Prototype, Test) and the design thinking mindsets that demarcates the attempt to learning.

Firstly the students were demonstrated on what 'Design thinking' is and how they should eventually design Human/user centered designs. Then they were taken to the field. Due to the time limitations students conducted field surveys in Nuwara-Eliya, Dambulla and in their home villages. The students were divided into several groups to cover the sites effectively by interviewing the farmers and other food related officials. Then students were facilitated to follow the "Design Thinking' process and 'Design a 'product solution'/ 'packaging system' for crops (fruits and vegetables) transport for farmers considering the Human Centered design considerations". This whole process and the end products were finally evaluated in a critique by several professional designers, lecturers and some experts in the field.

Consequently, in this research, feedback from students, peers and examiners were used to assess the process. Even in the field visits there was another lecturer involved as a 'faculty observer'. Creativity needs both the 'convergent' and 'divergent' thinking ability (Biggs & Tang, 2007; IDEO, 2012). So the assessment was also arranged accordingly. Some of the measurements of the creative problem solving skill were observed, such as; generating alternatives, values of the solution (aesthetic appeal, originality, usefulness, self-expression),

appropriateness (Biggs & Tang, 2007), capacity for generating ideas, capacity to explore and discover, and openness to possibilities (Jackson, Oliver, Shaw, & Wisdom, 2006).

As a facilitator for creative problem solving skill, some of the strategic approaches were vehemently used. Questioning for students to come up with answers rather than telling what to do; Challenge learners; Facilitate to enabling individuals to contribute and collaborate; Encouraging thinking outside the box; Making multi-disciplinary links (engineering, marketing, natural science, etc.); Giving students permission to be creative; Equip students with skills for both divergent and convergent thinking (such as brainstorming, mind mapping, design selection, etc.); and Participation in storytelling were the selected main strategies. (Biggs & Tang, 2007; Jackson, Oliver, Shaw, & Wisdom, 2006; Lawson & Dorst, 2009; IDEO, 2012)

3. Results

Design as exploring, was a whole new experience for the students who were trained for the traditional academic framework. As excited as they could be the students embraced various possibilities of the design thinking process. They observed and comprehended the situation while adapting to the discourse of logical reasoning and ideation in all possible ways through adhering to the process as they brainstormed and listed out the possible issues and motives of the extended task. This allowed the students to explore as they begun to understand that problem solving is an essential component of learning, which encouraged the students to not to just jump into immediate solutions; instead, the focus was on reasoning all aspects of problems through various sources and iterations. Students actively participated personally in a meaningful manner; they were given the task to voice their opinions individually, and experienced the challenge of risk-taking as they engaged in the process. Sharing thoughts with their peers and reasoning out gave the opportunity to solve problems as a team. Students seemed to be more empathetic and worked as a team with a focused goal.

For starters the students observed the end-user, examining meticulously for creative possibilities. Their goal was to understand the user they are designing for. The students tried to identify pain points, patterns, lifestyles, behaviors and the areas where the farmers find it difficult in transporting freshly harvest vegetables. All the information was taken by interviewing the farmers individually (see Figure 1). Subsequently the students put their selves in to the farmers' situation so they can see what the farmers experience is, and get to know what they really feel.

Figure 2: students were learning in the field and collecting data (Research and empathy stage)

Figure 1: students were discussing the findings (Empathy and ideation stage)

The students experienced the farmers situation by working with them together to understand what the farmers really feel i.e. they were involved in packing the vegetables into plastic crates and gunny bags. They also transported the crates and the bags up to the trucks from the

fields. Students interviewed the retailers and other vendors at the market to comprehend their view on the existing issue as well.

The next phase was the ideation phase where the students started brainstorming ideas with their group members based on what they gathered through observations, interviews, and experiences. The idea was to write as many ideas they could on sticky note papers and stick it on the wall so all could see (see Figure 2). With the right focus on the needs and desires of the user the ideas eventually turned in to the right direction with right solutions. The next phase was rapid prototyping where the students managed to create a prototype of the solution which they intend to provide, and then they tested it with the end users for feedback. After receiving feedback from the end users the students then used that information to fuel the changes in their designs and fine tune it to better suit the users' needs. This way the designs turn out to be more user friendly, ergonomical and Human Centered. There were many exceptional designs as well as a few threshold level ones. The feedbacks of the students were positive on using the said processes, where they have mentioned the importance of projects as such in a monotonous academic system.

4. Discussion and Conclusions

With this facilitation for creative problem solving skills with HCD and design thinking, the students were able to design products for a specific function considering ergonomically and the technical aspects in order to make it user friendly and human centered. Accordingly with an over-all observation, all the participated students were equipped with creative problem solving skill up to a threshold level in the design discipline. This study suggested a sequence, starting with a foundation of solid knowledge on 'design thinking' and HCD, using it open and generating new possibilities, in a SOLO-type progression from relational to extended-abstract. So a recommendation can be made to other disciplines to use the 'design thinking' process to facilitate students to develop their creative problem solving skill.

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Enhancing student skills through student centred learning in large group teaching

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1. Introduction

Student centred learning (SCL) is an approach where the students influence the content, activities, materials and pace of learning (Collins and O'Brien, cited by Froyd and Simpson, 2010). According to Attard (2010) two important parameters of SCL are innovative teaching and the use of learning outcomes. Innovative teaching methods are geared towards enhancing critical thinking in students and include methods such as team learning and problem based learning. The long term goal in SCL is to develop students' capacity for self-directed, lifelong learning (Stein, 2015).

In a previous study the researcher explored developing student centred learning in a small group of 12 students (Caldera, 2015). The present study seeks to extend this work to a larger group of students while focusing on developing their skills. It is generally felt that universities need to equip their graduates with deep intellectual capabilities and a set of practical skills in order to hone their employability (Archer and Davison, 2008) and skills which have been reported to enhance employability of university graduates (Kaliannan and Chandran, 2012) were chosen in this study.

The modifications were made to the practical component for the Biostatistics course, a 2 credit mandatory course for all second year biological science students. In the past the practical sessions were mostly based around the students solving problems on paper on statistical principles ranging from probability to hypothesis testing. The researcher was keen to make the students more active in the class in acquiring both knowledge and skills while making them aware of why these changes were made. The change envisioned for the course was twofold. Firstly, to enhance the learning experience of students by developing innovative learning activities to facilitate SCL. Secondly to develop key 'soft' and 'hard' skills in them through the course while making it more attractive to the students.

2. Methodology

The student number each year is around 150-170 students for the Biostatistics course and they are divided in to three laboratory classes for the practical sessions which are conducted for 10 weeks. The activities were introduced to give the students greater responsibility for their learning as well as allowing them to 'do' and discover certain principles on their own. While modifications were made throughout the course, several specific activities that were conducted along with the existing practical activities are highlighted in the present study. These included:

Practical 1 - A group poster presentation on a statistical principle (of their choice) they had learnt in the lectures

Practical 3 and 4 - Games played by each group to understand a particular statistical principle. For instance a hoop shooting game where students were physically shooting hoops in the laboratory to understand and simulate binomial probability

Practical 5 – Generating data for analysis – for example calculating the body mass index (BMI) of group members to be used for generating histograms and data analysis etc.

Practical 10 – Problem based learning – a 'real world' problem given to each group along with plant material (a test and control set of Rice plants). The students had to obtain the data from the live plants and then attempted the question using the principles they had studied in the past 9 weeks.

The rationale for including the above activities in the normal practical class was explained to the students.

3. Results

The poster presentation in the very first practical was successful as students showed their creative side both designing the poster as well as the situations they thought up to bring out diverse statistical concepts of their choice such as 'sample' or 'skewed distributions'. The first practical session ended on a very positive note due to this activity with the students keen to come to the next practical session. Overall the students were pleased with the activities throughout the practical sessions as shown in their feedback. On a scale of 1-5 (with 5 being 'strongly agree' and 1 being 'strongly disagree') the following scores were obtained from the student feedback (Table 1).

Table 1. Student feedback obtained at the final practical session

	Feedback form statement	Score
1.	I have gained a good understanding of concepts and principles in the field	4.38
2.	I have learnt to apply principles of this field in new situations	4.21
3.	I have become more interested in this subject area	4.28
4.	I have been encouraged to ask questions	3.96
5.	I enjoyed the practical work	4.38
6.	I have been motivated to work hard	4.31
7.	The activities helped me to understand concepts	4.37
8.	The activities were interesting	4.79
9.	The activities given to students were well explained	4.30
10.	Sufficient guidance was given to carry out the group activities	4.40
11.	Learning objects have been made clear	4.24
12.	A class environment conducive to learning has been maintained by the lecturer.	4.42

Number of feedback forms analysed – 96

The feedback form also included a section where students chose skills that they felt that they gained from each of the new activities (intellectual skills [A], Teamwork and leadership skills [B], communication skills [C], planning and organizational skills [D] and analytical and

decision making skills [E]. They were free to tick more than one and the results are given in Table 2.

Table 2. Student perception on the skills that they gained from each activity (n= percentage of ticks given for skills: calculated for each activity)

Activity	**(A)**	**(B)**	**(C)**	**(D)**	**(E)**
1.Poster preparation	13	29	21	24	13
2. Presentation of statistical principle	15	24	27	19	14
3. Odd man out game - practical 03	21	24	22	13	20
4. Hoop shooting game – practical 04	24	32	13	09	22
5. Generating data - Calculating BMI -	24	19	21	11	25
6. Problem based question – practical 10	23	17	15	16	30

When the student performance at the examination was compared with the pass rate of the previous year's batch a similar pass rate was seen (98.2% in 2014 and 97.93 in 2015).

4. Discussion and Conclusions

The students were overall happy with the SCL activities as shown by their feedback in Table 1, with a majority of them finding the activities interesting as shown by a score of 4.79. Earlier studies have also shown that students felt there was more respect for them in this approach, that it was more interesting and that it boosted their confidence (Lea et al, cited in O'Neill and McMahon, 2005).

However, it was seen that most felt that they were not encouraged to ask questions in the class (the lowest score obtained, i.e. 3.96 in Table 1). This is an area the researcher needs to improve as students should feel comfortable to clarify any doubts. As most students do not respond to the generic 'Have you got any questions' phrase at the end of an explanation it may be favorable to ask them to initially write down the questions they may have. In later practical sessions the students could be encouraged to ask the questions if any when the lecturer visits the groups and towards the end of the course they may then feel more comfortable in clarifying any issues.

The SCL activities introduced to the practical classes included physical activities such as 'hoop shooting' and others which meant that they were no longer passive learners in any sense sitting on their laboratory stools for three hours. The SCL approach emphasizes learner activity rather than passivity and the learner bears responsibility for his/her learning.

For the most part the activities had to be completed together as a group in order to grasp certain statistical principles such as binomial distribution. When looking at student perception of skills gained (Table 2) it is clearly seen that teamwork and leadership skills scored high for some of the activities such as the introduced games. It is interesting to note that the ability to work in a team is one of the most sought after skills in new graduates (Archer and Davison, 2008).

The examination results did not show an improvement in the student performance in comparison to the previous year. However it should be noted that the examination was a summative assessment which also did not focus on whether students developed specific skills, especially the soft skills. Furthermore, while changes were made in the practical sessions, no major changes were in fact made in the assessment method. This is an area where further improvement is required and could benefit from the use of formative assessment methods where the students themselves could then identify their learning gaps and areas to further develop (O'Neill and McMahon, 2005).

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Improving English Language Skills of Adult Learners Using Technology in Classroom: A Language Course in English through E Learning

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Introduction

Language instructors who teach English as a second language are always interested in finding methods and means to make the students read, write, and speak English fluently through building confidence. The teachers of English embark on various methods of teaching relying on different approaches in teaching and learning strategies. These approaches and methods have now given way to eclectic method of language learning (Richards and Rodgers, 2001), accumulating all methods of teaching and learning, as the learners are viewed as autonomous learners (Little, D. 1991). The learner has his own purpose of learning, has his preferred type of learning, and he would like to learn at his own pace. E learning is one method that would empower the learner to achieve his goal.

The main objective of this research is to find how an English course using e learning technology has improved the language skills, learner autonomy and attitudes of participants. The participants in the English through e learning course were adults; employees and school leavers over 18 years of age. In 2013, 18 students (eight males and 10 females, 14 employed and 4 not yet employed) followed the course. In 2015, 30 students (10 males and 20 females, four employed and 26 not yet employed) followed the course. Both groups were trained on language skills, provided with knowledge on language structure and were given the opportunity to interact with the Language Management System on Moodle platform.

To introduce new ways of teaching and learning, the teacher and the student both need to change their traditional perception on how a language is learned (Gardener and Miller 2005). To start a course in English the ELTU teachers were trained by the British Council Sri Lanka and the equipment and the software was received from the Information Communication Agency in Sri Lanka (ICTA). Rosenberg provides more meanings to the letter E in the e learning technology. They are experience, extended, and expanded learning technology (Rosenberg, J.M. 2001).

Methodology

In order to determine how an English course using e learning technology has improved the skills, attitudes and learner autonomy, the (ELTU), Makandura observed the participants in the English through e learning course. The first batch and the latest batch of students were observed from the English through e Learning course conducted by the ELTU, using the computer section of the unit to deliver online material. The first set of students comprised of 78% employed adults and 22% young school leavers. The second set of students comprised of 87% school leavers who have just finished their Advanced Level examination and 13% employed adults. Both groups were given 37% of allocated learning hours to interact with lessons on Learning Management System. Their interaction with the LMS was constantly

monitored, at the same time their progress and the attitude towards learning were evaluated. The focus was on three major areas; Learner autonomy, attitude towards learning, and language skill improvement. Learners were given a pre-test to find their language ability at the beginning of the course and a need analysis was done to determine their language needs. Through informal conversations and interviews their attitude towards learning English was further established. Questions were designed to find whether the course materials were useful and related to their experiences, whether the learning material were challenging, and to know whether they know why they are learning certain lessons. The perception of the instructors and the students both were regarded in writing this paper, thus giving more facets to explain the case. Learner traits in adult learning context were considered and the language Instructor (teacher) was viewed as a facilitator. The feedback from the students was collected at the end of the course. The data analysis was done through qualitative case study method using SPSS statistical package.

Results

Final course test results compared with the pre-test results show that the majority of the students from both groups have achieved higher results at the course final test. As evident through the data from the feedback questionnaire (Table 1), learners have used technology as a tool for learning. They were motivated to learn, and their reflection on English language learning was remarkably positive.

	Results				
Autonomy, perception of the participants	1	2	3	4	5
I used the LMS to learn English at my free time	2	7	22	28	41
I learnt vocabulary and grammar structures needed to use in my work/studies	0	0	2	30	68
The lessons were challenging	0	0	4	20	76
I like learning English using computers	0	0	2	13	85
This course was different from my previous language learning experiences	0	0	0	13	87
I recommend this course to other learners	0	0	0	2	98
Now I understand English better when I listen / read	0	0	0	26	74
Now I can write and speak confidently	0	0	0	37	63

Table1: Students' feedback through the questionnaire

(Values are given in percentages of students answered on a Likert scale; 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree).

As can be seen from the table and the graph (Table 1 & Figure 1), all most all students said that they would recommend this course to other learners (98%). Majority of students strongly admitted that this course was different from other language learning experiences (87%), and 85% totally agreed that they liked to learn English using computers. 76% of students strongly agreed that the lessons were challenging. More or less the same numbers of students (74% and 72%) strongly agreed that they had improved their language skills while 68% strongly agree that they had learnt language related to their work and study. Interestingly, only 41% of the participants strongly agreed that they had accessed the LMS at their free time.

Questions for the teachers	Results				
	1	2	3	4	5
I think that instructions in the LMS have made English language learning more fun for students					100%
Teaching through e learning has been helpful when I gave instructions to my students					100%
I see that students show enthusiasm in the session with computers			50%	50%	
I think that changes to the content on the LMS should be varied from course to course					100%
I am confident that students are able to assess their own language skills in English				50%	50%

Table 2: a part from the teachers' feedback questionnaire on the learning context

(Values are given in percentages of teachers answered on a Likert scale; 1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4=agree, 5=strongly agree).

This was the first instance that the teachers experienced teaching using the LMS. As can be seen from the answers to the questionnaire, it is evident that the teachers were vigilant in preparing instructional material and they were also observing the learners. Observations through the teachers' perspective showed that the learners were more autonomous in the case of young school leavers than the adult learners who were employed with busy schedules. Older learners were ready to take what was on the offer but the young learners demanded what should be included in the course. Young learners were eager to work with the computers yet their interest diminished with time. Older learners were reluctant to use the computers; however, their interest grew with time. Both groups of students were motivated throughout the course. Their attendance in class was high and participation was active. Comparison between the pre-test and course final test marks showed a definite improvement in the knowledge of language structure and language skills of the participants. (Figure 1)

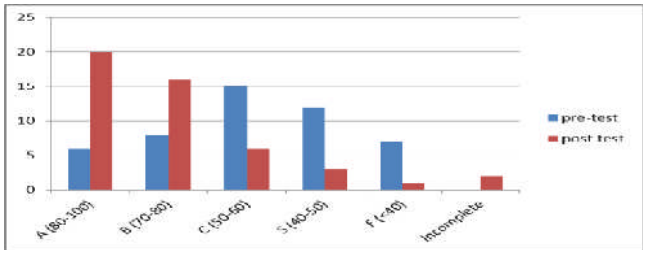

Figure 1: Comparison between the pre-test and course final test marks.

According to the grades obtained (Figure 1) by the students in their pre-test and the final test in the course, the number of students who obtained A grades (marks 80-100) increased from 6 to 20. Whereas there were 7 students failed in the pre-test only one student got F (< 40 marks) in the final test. There were two students who did not complete the course. Their grades are given as "incomplete".

Discussion and Conclusions

This study shows that using technology in classroom i.e. using e learning as a method of instruction is successful with adult language learners. It gives the learners experience by enhancing learner autonomy. It extends their perception by increasing confidence, and expands their knowledge from what they know to what they should know by learning the structure and improve overall language ability through improving language skills. Learners of English in this course were enthusiastic about using computers to access learning material and they extended their willingness to recommend the course to others. This is evident in the fact that the student number being increased. Learners were requested to state their needs at the beginning of the course and they had the opportunity to suggest the sections of grammar and vocabulary that should be taught. They have accessed the LMS outside the class and they found the lessons challenging. The learners did not enjoy full autonomy owing to the course design, yet the course was more learner centred. The point that the lowest percentage of students has fully agreed is that they accessed the LMS outside the class. The reason can be attributed to the fact that some students were employed with busy schedules. Students have improved their language skills according to the course final test yet they are skeptical of their language ability. The instructors in this course were observers and facilitators (James, P. 2001) and they were delighted in witnessing the transformation taking place in students with regard to language acquisition. In conclusion, a language course using technology can be strongly recommended for adult learners including undergraduates to improve English language skills.

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Sensory Modality Preferences of Food Science Undergraduates and Influence of Gender, Academic Performance and Academic Level

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1. Introduction

Instructors must identify the characteristics of their learners, as the knowledge of the learner and his/her characteristics is one of the important factors in effective teaching (Gudmundsdottir and Shulman, 1987). However, understanding of learner and his/her characteristics is still an underutilized approach to improving classroom instructions. Similarly, the utilization of this knowledge in a formal way to enhance the teaching process or learning environment such as in the 3P model has been almost absent until recently (Urval et al., 2014). One can understand the learner and his/her characteristics by assessing learning style preferences. However, the field of learning styles is complex and it has identified over 70 different learning style models (Coffield et al., 2004 as cited in Slater, et al., 2007). While there are several tools, the commonly used method was the assessment of sensory modality by which students prefer to take new information (Urval et al., 2014). Among the inventories in the category of instructional preferences, commonly used one is the Visual, Aural, Read – Write and Kinesthetic (VARK) questionnaire developed by Neil Fleming in New Zealand (Al-Saud, 2013). It is a simple, freely available and easy to administrate questionnaire (Urval et al., 2014).

Though, several studies have been conducted to investigate learning style preferences (Nuzhat, et al., 2011; Peyman, et al., 2014; Al-Saud, 2013 & Urval et al., 2014), most of these investigations have been focused on medical students. However, it is of prime importance of assessing learning style preferences of students in other disciplines also particularly due to the higher demand and concern of incorporating much more student centered teaching and learning activities into the curriculums. Furthermore, there have been investigations in literature of the influence factors like gender and academic performances on learning style preferences (Urval et al., 2014; Dobson, 2010; Ramirez, 2011; Al-Saud, 2013). However, very little information is available on trends in learning preferences with the consequent academic years. Therefore, the aim of this study was to explore patterns of learning style preferences with gender, performance and academic year of undergraduates in the Faculty of Livestock Fisheries and Nutrition in Wayamba University of Sri Lanka.

2. Methodology

This study was performed at the Faculty of Livestock, Fisheries and Nutrition of Wayamba University of Sri Lanka in February 2016. Total of 284 students from both degree programs were recruited for the study. Among them 77 were 1st year students, 89 were 2nd year students and 118 were 3rd year students. Out of the total, 188 were female students and 96 were male students. Among the total study sample, 198 students were following B.Sc. in Food Science and Nutrition degree and 86 students were following B.Sc. in Food Production and Technology Management degree program.

VARK questionnaire developed by Fleming was administered at the beginning of the semester to determine their preferred mode(s) of learning. 96% of students completed the questionnaire. Respondents were permitted to omit a question or to choose two or more options if appropriate in order to investigate unimodal and multimodal preferences.

Questionnaires were evaluated based on the instructions given by VARK official website www.vark-learn.com. Help from VARK official team was obtained to classify each participant according to his / her learning styles. A Kruskall – Wallis test was performed to determine whether an association existed between learning styles and grade point average of students. A ^{2} test was performed to determine whether there was an association between gender and learning style. Excel 2013 was used to enter and organize the data and Minitab 17 was used for statistical analysis.

3. Results

Of the study group, 52% of students preferred multi-modal (Table 1). Out of multi-modal group, 96% preferred all four sensory modalities and 4% are bi-model preferences. Of the students who preferred single-modal, aural (40%) was most preferred style followed by visual (28%), kinesthetic (25%) and read-write (7%).

Table 1: Number & percentage of students who prefer singular, bi and quad sensory modalities in gender, academic year and overall basis.

	Gender	V	A	R	K	bi	quad	total
Overall	F	23(12.2*)	35(18.6)	4(2.1)	22(11.7)	6(3.2)	98(52.1)	188
	M	15(15.6)	19(19.8)	5(5.2)	12(12.5)	1(1)	44(45.8)	96
		38(13.3)	54(19.0)	9(3.2)	34(11.9)	7(2.5)	142(50)	284
1st year	F	13(25)	6(11.5)	2(3.8)	4(7.7)	3(5.7)	24(46.2)	52
	M	7(28)	4(16)	1(4)	1(4)	**	12(48)	25
		20(26)	10(13)	3(3.9)	5(6.5)	3(3.9)	36(46.7)	77
2nd year	F	4(7.7)	13(25)		7(13.5)		28 (53.8)	52
	M	7(18.9)	8(21.6)	3(8.1)	3(8.1)	1(2.7)	15(40.5)	37
		11(12.4)	21(23.6)	3(3.4)	10(11.2)	1(1.1)	43(48.3)	89
3rd year	F	6(7.1)	16(19.0)	2(2.4)	11(13.1)	3(3.6)	46(54.8)	84
	M	1(2.9)	7(20.6)	1(2.9)	8(23.5)		17(50)	34
		7(5.9)	23(19.5)	3(2.5)	19(16.1)	3(2.5)	63(53.4)	118

*within parenthesis are the respective percentages **blank cells represent the zero values

The ^{2} test results showed that there were no gender differences in selection of learning styles ( ). Of the students who preferred uni-model learning style (V, A, R or K), male students preferred more visual modality than female students (16% and 12% respectively). However, there is no percentage difference for A and K modalities between groups. There is 8% difference in male and female students in selecting multi-model styles (46% and 52% respectively).

Students who preferred quad-model for receiving information are 47%, 48% and 53% respectively in 1st, 2nd and 3rd year. There was no significant association of uni-, bi-, tri- and quad-model with academic year ( ). However, significant association of different singular models with academic year was observed ( ). Majority of 1st year students preferred visual sensory modality for information gathering (26%), whereas majority of 2nd year students prefer aural sensory modality as the preferred learning style (24%). And the percentage of students who prefer kinesthetic sensory modality is considerably higher in 3rd year students (16%). With the academic year, there were not much changes in percentage of quad model preferences for both male and female students. When comparing singular sensory modality preferences in first year students visual and aural preferences are slightly high in male students (A – 28 & 25%, V – 16 & 11%) and kinesthetic preferences are high in female students (8% & 4%). In second year students, same trend persist for visual preferences as in the first year students. In second year students, visual preferences are high in male students (19% & 8%) and, aural and kinesthetic preferences are high in female students (A – 25 &

22%, K – 13 & 8%). When comparing singular sensory modality preferences in third year students, read-write and visual preferences are very low in both groups. Aural preferences are approximately similar in both groups. However, kinesthetic preferences are much high in male students compared to female students.

Visual sensory modality preferences of 1st year female group (25%) is much higher compared to 2nd (8%) and 3rd (7%) year female students. Same trend was observed in male students too. When consider the aural and kinesthetic preferences, both first year male and female students recorded lowest percentage compared to 2nd and 3rd academic years. A preference for read-write sensory modality is very low in both female and male students in all academic years. Results show that there is no difference in multi-model or singular sensory modality preference in two degree programs (*P=0.249*). However, aural sensory modality preference is higher in FSN (21%) than FPTM (13%) and kinesthetic sensory modality preference is higher in FPTM (18%) than the FSN (10%). There were very less percentage of students who preferred only read/write sensory modality for their learning (3% in both programs). There were no significant relationship between learning style selection and academic performance ($P = 0.181$).

4. Discussion and Conclusion

The study results revealed that majority of the study group has preferred a multi-sensory modality (52%) as the way of perceiving knowledge than singular learning preferences. Results are in agreement with the other studies done for medical students (72.6% (Nuzhat, et al., 2011), 58% (Peyman, et al., 2014), 59% (Al-Saud, 2013), 68.9% (Ramirez, 2011) & 64% (Urval et al., 2014)). Thus, the study results help to overcome the predisposition of many academics to treat all students in similar way. Peyman, et al. (2014) suggest by citing other researches that active learning strategies over traditional lecture format are more reasonable for multi-model style preferences, as they consider different characteristics of learners through ratiocination and making problem solving improvements, as well as through development of decision making skills. Discussions in class, collaborative learning skills, role plays, simulation of models and games are active strategies that can be utilized in large classes. In our study only 48% of participants preferred singular learning styles. Out of this least percentage has been recorded for reading/writing preferences (7%). These students prefer accessing information through printed words. Reason for least percentage may be due to the fact that the involvement of students in new technology. Nuzhat, et al. (2011) has mentioned that the science and engineering students are more kinesthetic; however, according to the study results, enhancing visual and aural TL methods is also equally important.

According to our study, there was no potential difference in gender for students to have preferred multi or singular sensory modalities and majority of them are multimodal. As suggested by Slater, et al. (2007), in the gender sense all physically unimpaired students are multimodal, using all their sensors to take in information at any given time. Study results are in agreement with Slater, et al. (2007) and Urval, et al. (2014). However, some studies indicated that there was a significant relationship in sensory preferences and gender (Wehrwein, et al., 2014 & Dobson, 2010). Therefore, no generalized conclusion can be drawn for the influence of gender on preferred learning style.

According to Dobson (2010), there was a significant relationship between perceived sensory modality preferences and course scores. But in our study results revealed no significant relationship ($P = 0.181$) between academic performance and learning style preferences. However, they have compared the course performance (graduate vs. undergraduate) and our

study compared the grade point average (GPA). Our results are however, in agreement with Slater, et al. (2007) which has confirmed a non significant correlation between academic performance of students and their preferred VARK style. In this study they have used self reported marks obtained in various examinations as the performance indicator. According to Ramirez (2011), no significant difference has been found among different sensory modalities with MCQ scores. Similar to the influence of sex, no generalized conclusion could be drawn with regard to the influence of academic performance.

The findings of this study provide insight in to the ways that our food science graduates learn and also the study findings help to shed light on learning development of the faculty students. Therefore, learning styles of students must be identified at the beginning of the semester so that the academics can plan appropriate teaching strategies to accommodate individual strengths and needs. Most of the students were multinomial learners, therefore, academics of the faculty must understand as to how to present information in multiple modes and each course should accommodate all types of learners. As read-write learning preferences found minimum and a considerable proportion of teaching/learning methods used in the faculty yet address the read-write sensory modality, academics must consider this and changes need to be undertaken accordingly. The study found a change in singular preferences from first to third years (through visual, aural to kinesthetic preferences). To enhance both the quality of the higher education student experience as well as to examine whether such changes can be mediated through a teaching climate or curriculum, it seems worthwhile to investigate this aspect further.

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