Proceedings of the

13th Annual SLAIHEE Conference on Higher Education in Sri Lanka

Jointly organized by

Staff Development Centre (SDC) Open University of Sri Lanka

and



Sri Lanka Association for Improving Higher Education Effectiveness (SLAIHEE)

Conference Theme: "Lectures & Beyond: Delivering Higher Education through Learning Experiences"

> Friday 23rd June 2017 8.30 am to 3.30 pm

held at Open University of Sri Lanka SDC – SLAIHEE Conference 2017

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13th SDC - SLAIHEE Conference on *"Lectures & Beyond: Delivering Higher Education through Learning Experiences"* Friday 23 June 2017, 8.30am to 3.30pm

at HSS Building, Open University of Sri Lanka, Nugegoda.

(the documents / materials of this conference are available at www.slaihee.org)

WELCOME TO THE CONFERENCE

This is the thirteenth year since SLAIHEE was established as a non-profit voluntary organisation. From its establishment in 2005, SLAIHEE (Sri Lanka Association for Improving Higher Education Effectiveness) has, jointly with a Staff Development Centre (SDC), organized an annual conference, taking pleasure to provide the only opportunity in Sri Lanka for our university staff to document and discuss the learning enhancements that they have been able to achieve through their subject-related teaching. For the first eleven years, the SDC at the University of Colombo was the organisational partner hosting this annual conference. Then, last year, its 12th year, the SLAIHEE-SDC conference was hosted by the Staff Development Centre, Wayamba University of Sri Lanka and this year, it is held at the Open University of Sri Lanka. This conference has become a Community of Practice and the only national conference in Sri Lanka that focuses exclusively on learning and teaching in the Higher Education (HE) context (SoTL, Scholarship of Teaching and Learning). This year's conference celebrates thirteen years and affords the opportunity to look back and to use that thirteen-years to experientially formulate where next we need to take HE in Sri Lanka, say, over the next ten to twenty years. As pioneers in the quality enhancement of HE in Sri Lanka, SDC and SLAIHEE have jointly faced and traversed a huge challenge and this humble beginning has, we hope, laid the foundations for a journey which is nowhere near to where we need to take our motherland in the area of HE and which now has attracted many players and commercial interests.

The theme of this year's conference is "Lectures & Beyond: Delivering Higher Education through Learning Experiences" (for previous conference themes and proceedings, please visit <u>www.slaihee.org</u>). Though all of us have been in lectures as students and continue to deliver this lecture format, it is still hard for lecturing staff to view the traditional lecture as an outdated mode that we should let go rather than persist in using.

We take great pleasure in welcoming as our Keynote speaker Prof Uma Coomaraswami, Director, The Centre for Gender Equity/Equality, University Grants Commission and former Vice-Chancellor, The Open University of Sri Lanka.

Contact information for SLAIHEE: Staff Development Centre, University of Colombo, Colombo 3. phone and fax 011 259 4899 phone 011 533 7207 e-mail: <u>slaihee@gmail.com</u> - For further details <u>www.slaihee.org</u> The conference is of particular interest to all those with a concern and commitment to the quality and fate of future Higher Education in Sri Lanka, including;

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

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 mainly to our students.

From SDC and SLAIHEE – a big thank you for your participation, to the presenters and specially to Prof Uma Coomaraswami for her Keynote speech in particular, Prof S. A. Ariadurai, Vice Chancellor, The Open University of Sri Lanka, and all the special invitees. The reviewers are thanked for their speedy and efficient reviews.

Proceedings Volume: Edited by Dr Shrinika Weerakoon, University of Colombo

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Programme

8. 30 am	- Registration
Session 1	
09.00 - 09.05am	- Lighting of the Traditional Oil Lamp
09.05 - 09.10am	- Welcome by Dr Prasanna Ratnaweera, President SLAIHEE
09.10 - 09.20am	- Address by Guest of Honour Prof S. A. Ariadurai, Vice Chancellor, Open University of Sri Lanka
9.20 - 10.00am	- Keynote Address by Prof Uma Coomaraswami, Director, The Centre for Gender Equity/Equality, University Grants Commission
10.00 - 10.15am	- Vote of Thanks by Ms S. Karunanayake, Acting Director, SDC, Open University of Sri Lanka
10.15 - 10.45am	-Tea
<u>Session 2</u>	
11.00am	- Presentation & discussion: of peer-reviewed papers
	- Parallel Sessions IA&IB
12.30pm	- for non-members: L u n c h (<u>at</u> : SDC)
12.30pm	 for members: Annual General Meeting of SLAIHEE (<u>at</u>: Seminar Room, HSS Building) followed by lunch (<u>at</u>: SDC)
Session 3	
1.45pm	- Presentation & discussion: of peer-reviewed papers
	- <u>Parallel Sessions</u> II A & II B
3.10pm	- Feedback form, Conference <i>Closure & T e a</i>

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SDC – SLAIHEE Conference June 23rd 2017 – Session Timetable

	Session	2			
Venue:	Seminar Room 1, HSS Building	Seminar Room 2, HSS Building			
Session	Dr T Sivakumar	Mr Ajith Jayaweera			
<u>Chairpersons:</u>					
Time	Paper Title, author(s), page numbers	Paper Title, author(s), page numbers			
11.00 – 11.20am	Participant Perspectives on the Use of an Online Space	Facilitating Active Learning through Story Telling			
	to facilitate Academic Achievement among Open and	S. Perera pp. 33-36			
	Distance Postgraduate Students				
	M. I. Jansz pp. 1-4				
11.20 – 11.40am	The Use of a Virtual Learning Environment to Provide	Effect of Spot Tests to check student learning in Large Class			
	Effective Learner Support in a Distance Learning	Teaching			
	Environment	S. C. Mathugama pp. 37-40			
	H. G. P. A. Ratnaweera & N. P. M. Rajaguru pp. 5-8				
11.40 - 12.00	A balanced version of Flipped and Traditional	Setting a More Effective and Supportive Learning Environment			
	Classroom Methods to Enhance Skills on application of	for Small Classes			
	Knowledge to Real Situations	M. P. Dhanushika pp. 41-45			
	M. C. W. Somaratne pp. 9-12				
12.00 – 12.20pm	Effectiveness of Holistic And Analytic Assessments in	Bridging the Gap between the University Environment and the			
	Assessing Student Performances in creative subjects:	Context of Industrial Training: Enhancement of Functioning			
	Student and examiner perceptions	Knowledge by using Poster Exhibitions			
	P. D. Munasinghe pp. 13-16	A. D. Weerakoon pp. 46-50			
12.30 – 1.30pm	SLAIHEE AGM and LUNCH				

	Session 3							
Venue:	Seminar Room 1, HSS Building	Seminar Room 2, HSS Building						
Session	Dr Iroja Caldera	Dr Enoka Corea						
<u>Chairpersons:</u>								
Time	Paper Title, author(s), page numbers	Paper Title, author(s), page numbers						
1.45 – 2.05pm								
	Incorporating Life-wide Learning into Higher Education	Clinical Competency among Graduate Nursing Students at						
	D. Mendis pp. 17-20	Eastern University, Sri Lanka						
		P. Youhasan & T. Sathaananthan pp. 51-54						
2.05 2.25 nm								
2.05 – 2.25pm	Digging the Surfaces Activities Promoting Deen Learning	Simulation Pased Medical Education in Medical Emergensies						
	bigging the Surface: Activities Promoting Deep Learning	A MANU de Citue IXIX TVineini DV Devesie de s						
	In Literature Classes	A.W.N.L. de Silva, K.K.I.Virajini, K.V.Dewasingne,						
	S. A. Abayasekara pp. 21-24	R.A.N.K.WIJesinghe pp. 55-58						
2.25 – 2.45pm								
	A Study on the Correlation between the Level of	Exploring the Practices at a Private University and a Private						
	Proficiency in English and the Effectiveness of Textile	Teaching Hospital: Scholarly Teaching and Scholarship of						
	Engineering Learning Process	Teaching and Learning						
	D. H. K Samarakkody & K. U. S. Somarathna pp.25-28	V Perera, D Jayasundara, V Rajakaruna, K Akalanka, D						
		Priyadarshani, N de Silva pp. 59-62						
2.45– 3.05pm								
	The use of an Initial Teacher Training Programme to	Professing Professionalism in the Preclinical Years: Perceptions						
	develop Lecturer Skills to move Higher Education	of Physiology Teachers in Sri Lankan Medical Schools						
	teaching beyond Traditional Lectures	A.D.A. Fernando, T.T. Chaturanga, W.M.L.V. Wanninavake. P.M.						
	Y. M. S. K. Weerakoon pp. 29-32	Atapattu, S. Wasalathanthri pp. 63-67						
3:05-3:30pm	Feedback form, Conference Closure & T e a							

Reviewers of papers;

Dr Nilukshi Abeyasinghe, University of Colombo Dr Iroja Caldera - University of Colombo Dr Enoka Corea, University of Colombo Prof Nelun de Silva, SAITM (formerly at University of Ruhuna) Prof Suki Ekaratne, The University of Hong Kong Prof Chandra Gunawardena, Open 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 Ms Sajeewanie Somaratne, University of Colombo Dr Shrinika Weerakoon, University of Colombo

The paper submission and peer-review process: papers that appear in this Book of Proceedings 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. In this process, an Extended Abstract had first been submitted together with a self-assessment Scoring Sheet. Each 'Extended Abstract' then underwent a 'blind' 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, again 'blindly', 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 so, do not appear in this Book of Abstracts.

Abstracts plagiarised from others' work, when not acknowledged in the submitted Abstract or have a substantial component of plagiarised material, are rejected and is normally followed up by formally writing to the authors, through their institution heads, as practices that are unacceptable and looked down by the entire academic community worldwide.

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.

Participant Perspectives on the Use of an Online Space to facilitate Academic Achievement among Open and Distance Postgraduate Students

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Introduction

The open and distance learning (ODL) context of the present study has experienced issues with students completing the research stage of their study programme. As ODL students usually live in areas that are geographically distant from the physical institutional space they become emotionally and physically distant from their academic institution during the critical stage of research. One measure taken to mitigate isolation of students was to conduct research seminars during which students presented their progress and received feedback from peers and mentors. However, attendance was unsatisfactory as students had to travel far and additionally had issues in securing leave on the dates of the seminars. Nevertheless, there was a positive student response to the concept in principle. The problem of academic achievement (AA), however, remained unresolved.

It has been established that Academic achievement (AA) in higher education is a complex interplay of emotions, self-regulation and motivation according to Mega, Ronconni & De Beni (2014). In self-regulation models one aspect that is highlighted is the importance of goals and goal setting (Pintrich, 2004).

Furthermore, previous research on thesis completion found that structured supervisory relationship and regular deadlines, monitoring and feedback was beneficial for thesis completion (Dillon, Kent & Malott, 1980, cited in Ho, Wong & Wong, 2010). Similarly, Ho, Wong & Wong (2010) in their own study of one 1 PhD student and 19 Masters students who had either completed or were completing their thesis found that 'accountability with peers and supervisors' was a significant factor in thesis completion.

Three major needs of graduate students studying in the distance mode identified in a study conducted with eight graduate students in a fully online masters' programme were peer support; academic resources to be knowledgeable about academic and administrative matters; and prompt responses to queries by instructors (Cain, Marrara, Pitre & Armour, 2003).

According to Garrison (2006) there is evidence that suggests that online learning can support collaborative learning and a 'sense of community' better than conventional classrooms. Garrison goes on to show that online learning creates a greater space for reflection as there is a permanent record of interaction. Moreover, a key feature of successful online learning is interaction (Swan, 2002).

Thus, based on the notion of the value of an online community in learning and the value of structure, deadlines and peer support for AA, an online intervention which encourages the goal setting aspect of self-regulation, interaction and peer support was conceptualized. The purpose of

this paper is to qualitatively explore participant perspectives of the intervention, in order to identify its strengths and weaknesses.

Methodology

An action research design was adopted for the purpose of this study. This paper reports the findings of the first action research cycle. The intervention in this study consisted of the creation of an online space (OS) via the NEO Learning Management System (LMS) platform. Participants were grouped into groups of five and six. The participants consisted students who had been newly registered for research (29) and students who had been registered for research for more than 3 months (17). Newly registered students were asked to form groups of 3 or 4 and up to 3 existing research students were added to each group. Out of the 46 initial participants, 5 did not log into the OS at all.

The participants were asked to report their dissertation progress to their group, via the OS, once a month. In addition, they were asked to give peer feedback. Simultaneously, each group was meant to be mentored by a lecturer. Each mentor was requested to observe the discussion and feedback given by the peers and in addition give direction, encouragement and feedback.

After implementing this intervention for a period of nine months, participants were given a questionnaire with a series of open ended questions seeking their views on the OS. The questions addressed: their level and type of engagement on the platform; difficulties in logging into the OS; their perceptions of the extent of the utility of the space; and their positive and negative perceptions of the different features and functions of the space and the value of the intervention itself. Fourteen participants out of the forty one participants who had logged into the platform responded to the questionnaire.

Results

Reporting of level and type of engagement on the platform

A majority of the respondents, numbering nine, reported logging into the platform regularly, with logins reported between 3 times a week to once a month. Two students reported logging in occasionally. Two students reported that they only logged in initially and did not continue. One student reported logging in rarely.

All students who reported logging in regularly posted their progress on the forum and commented on peers' posts, while one of the two students who logged in occasionally reported that she went through the platform and checked the other students' progress and submitted assignments. One of the students who gave up said she initially posted only because she thought it was compulsory but did not want to continue as she felt her peers' comments were not genuine and that others were posting because they had to. Three of the participants reported that they did not post, with one stating that the reason was because no one from her batch was there and she did not feel "inclusive". The student who logged in rarely reported accessing resources and video links that had been provided.

Difficulties in logging into the OS

In general, technical issues were not a barrier for most. One student stated that she had password issues which made it difficult to log in later. While another said that as due to the password being one provided and difficult to remember, it was not possible to log into the space from different devices. Two students cited the lack of time and busy schedules hindering access to the OS. One of whom elaborated that the "messages to get onto the platform were too 'naggy' and forceful".

The perceptions of the extent of the utility of the online space

Several themes emerged from the responses. Principal among the positive themes, participants noted that it helped them to see others' progress and get ideas for their own research while also serving as a comparison against which to evaluate their own progress, that it motivated or encouraged them to keep track of time in their research progress and keep working. One student reported that having had to be away due to a personal problem, returning to the forum and seeing her peers' progress "motivated her to accelerate speed". Sharing and exchanging information was another theme that emerged.

The negative themes reflected "the added work, which at times duplicated tasks and was too school teacherly", the lack of mentor presence, the futility of the online tasks as one student reported: "There is no obligation to use this platform. I had a question on, why should I engage with this platform?"

Another stated that a powerful motivator is required to make students go online, implying that it was lacking in this space. While for some personal commitments kept them away from the OS, for some students it was the OS that kept them going despite such hindrances.

Positive and negative perceptions of the different features and functions of the space

Posting progress on the public forum was viewed as positive in the sense of sharing and motivating to work to show progress. However, it was highlighted that this was only possible if students and mentors actively post and give feedback.

In general, except for one student who did not like getting email reminders, most of the students felt that the 'private message function' served purposes such as personal clarification and communication between students. Though, one respondent noted that other modes of communication were used for the latter purpose as well.

The assignment notifications function on the OS was viewed differently to be stressful, helpful, and useful. While the assignments themselves were viewed as: unnecessary; a burden at times; too simple; not hard or time consuming; good; and important to keep working.

Mentors' feedback and presence online was seen to be inadequate by respondents, some of whom seemed disheartened by the lack of feedback: "never got feedback"; "hope we get mentors who enjoy coming online and working with us".

Value of intervention

Twelve of the fourteen respondents felt the intervention should be continued and used with future research students because they either they felt that it was good for students studying from a distance or that it provides a space for students to discuss issues or helps them continue with

research without stagnating or that students would not be stranded when the supervisor is unavailable. A few students responded that the OS would be useful for the course work stage of the programme and use in that part of the programme would improve research students' use of the OS. It was emphasized by one participant that it should be used in the future "only if students are willing to work on time and keep posting". However, two participants felt that in its current form the OS was not suitable for the purpose. One suggested that instead a mobile app should be used and the other felt the OS should be used by supervisors to work individually with their supervisees.

Insights by the students regarding the OS were suggestions such as the provision of SMS alerts when posts are made, the adding of links to papers from the site, a document outlining students research areas, the creation of small informal groups to share personal problems, the provision of emoticons to show online presence, that students be trained in how to use the OS, and for mentors to share their experience of doing MA research

Discussion and conclusions

The responses of the participants displayed a wide range of positive and negative perspectives toward the online space for the purpose of completing their PG dissertation. There was no clear relationship between use of the space and the negative or positive stances taken. Overall, the study reveals that while it is quite beneficial for some, the OS in its current form may not be adequately motivating to effectively impact the AA of all the participants of this group. Thus, it can be stated that a technological one-size fits all solution would not be adequate to resolve the issue of AA. Rather, what may be required is a more sensitive solution based on a combination of approaches that targets the specific reasons for the inability of students to complete their thesis in a reasonable time frame. Further, the participant perceptions reveal that the value of the intervention is grounded in the extent of both participant and mentor engagement. Therefore, all participants of an OS should voluntarily join such a project rather than be forcibly recruited. Further, it must be ensured that every participant is familiar with how to use the OS and further, that the language of online task instructions be re-examined. It should be investigated whether a variation in the tasks themselves have a positive impact on the use of the OS and subsequent AA.

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The Use of a Virtual Learning Environment to Provide Effective Learner Support in a Distance Learning Environment

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Introduction

Open Distance Learning (ODL) pedagogical model of OUSL considers self-instructional print material as the primary source of learning, in lieu of traditional lectures; adult learners are expected to practice self-directed and experiential learning. The majority of employed young adult learners, who are more familiar with classroom teaching, find it difficult to endure without extra scaffolding. Recent advancements in broadband and mobile internet access have enabled to bridge this gap to a certain extent. The first author currently uses a cloud-based Virtual Learning Environment (VLE), <u>www.edu20.org</u>, to connect with learners. The VLE delivers a weekly study guide to encourage continuous learning; the discussion forum provides timely feedback. Learners could also schedule compulsory activities, and upload assignments and reports using this portal.

Soil Mechanics and Introduction to Rock Mechanics (Code: CEX4230), and Geotechnics (CEX6230) are two courses offered at levels 4 and 6, respectively, in the Bachelor of Technology (Civil) Programme. The overall grades are weighed equally between CA and the Final Examination. A minimum mark of 40% is required to be eligible to sit the final examination, and to pass the final examination. The CA for CEX4230 consists of two Continuous Assessment Tests (CATs), three Tutor Marked Assignments (TMAs), and a laboratory activity (LAB). Its CA criteria are: $0.3 \times [Avg. CAT mark]+0.3 \times [Avg. TMA mark]+0.4 \times [LAB mark] \ge 40\%$; [LAB mark] $\ge 40\%$. The CA criteria for CEX6230 are $0.3 \times [Avg. CAT mark]+0.3 \times [Avg. TMA mark]+0.2 \times [LAB mark] \ge 40\%$; [DES mark] $\ge 40\%$. DES being the geotechnical design. Analysis of performance during Ac. Yr. 2015-16 (refer Tables 1 and 2) shows a low success rate at CA and the final examination. Table 1 describes the performance of four learner cohorts with only $\approx 30\%$ of learners completing the compulsory laboratory activity.

L company och onto	Number	Enrolled	LAB Mark	Number	Number	Number
Learner conorts	enrolled	in Lab	≥ 40	Eligible	sat Finals	passed
Foundation	69	41	20	14	13	9
GCE A/L Math Stream	93	72	50	39	33	24
NCT, NCIT	13	8	5	4	4	2
NDT, HNDE, NDES	119	38	13	7	7	5

Table 1: CEX4230 performance by key learner cohorts (Ac. Yr. 2015-16)

Table 2: CEX6230	performance of learners	based on CEX4230) grades (Ac.	Yr. 2015-16))
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CEX4230 grade	Number enrolled	Enrolled in Lab	LAB Mark ≥ 40	Enrolled in DES	DES Mark ≥ 40	Number Eligible	Number sat Finals	Number passed
A-	1	1	1	1	1	1	1	1
B+	2	2	2	2	1	1	1	1
В	10	8	8	8	6	6	5	3
В-	12	10	10	8	6	6	6	1
C+	19	15	15	11	7	7	7	2
С	60	44	44	28	16	16	14	1

Figures 1 and 2 show the cumulative contribution of CATs and TMAs towards CA, for the two courses. Fig. 1 yields that only 3% of learners had gained more than 40% from TMAs and CATs while Figure 2 shows that only 18% of learners crossed this threshold. The cumulative curves, in both instances show no progress in learning with time. Learners with low CAT and TMA marks manage to meet the minimum 40% through other compulsory CA activities. These findings show the need for scaffolding during their continuous learning. The objective of this study is to ascertain whether the VLE options provided help scaffold learners in their continuous learning and whether they enhance performance at CA and the final examination.



Figure 2: Marks accumulated towards CA by eligible learners in CEX6230

Methodology

This study compares performance indicators discussed above to VLE usage. VLE logging-in data is used to determine whether learners have accessed it at-least once a week, during the study period; VLE usage is expressed as a percentage of the total number of study weeks. The number of queries made during each week are categorized and plotted.

Results

Fig. 3 compares the final examination performance of the two courses with VLE usage. Both graphs do not correlate learner performance with VLE usage. The graphs show no correlations with learner cohort type for CEX4230, or the grade received at the lower level course CEX4230, in the case of CEX6230 course. Figures 4 and 5 compare average performance at CATs and TMAs, respectively. The plots do not show any significant correlation between performance and VLE usage for the same two courses. Figs. 6 and 7 compare queries made by learners in CEX4230 and CEX6230 courses, respectively.



Fig. 5: Average TMA mark vs. logging-in (%) for (a) CEX4230 and (b) CEX6230

Discussion and Conclusions

The fewer course-content related queries and poor performance at CA and the Final Examination are signs of surface learning. Traditional adult learners are expected to possess intrinsic motivation, self-direction and readiness to learn; comes with a vast reservoir of experience; and prefers a problem centric than a subject centric approach towards learning (Merriam, 2001). Young adult learners who have recently completed their secondary or post-secondary education are accustomed to face-to-face teaching; many are employed with little work or life experiences; while struggling to balance work and study commitments.



Fig. 7: Queries made by 37 eligible learners in CEX6230 course.

Observed poor performance at CA and the Final Examination indicates learners' inability to demonstrate deeper learning. Barton (2015) finds that top students, worldwide, use practice exams to develop the necessary skills to analyse and evaluate problems and to develop arguments, rather than spending time to memorise the content. This study emphasizes the need for a more proactive approach towards learning. The first author has introduced a Reflective Learning Log (RLL) entry for each important learning event. RLLs are weighed 10% and 20% of the CA mark for CEX4230 and CEX6230 courses, respectively. The entries consist of four sections namely, a descriptive writing, a descriptive reflection, a dialogic reflection and a critical reflection as suggested by Hatton and Smith (1995). The methodology was introduced using an audio clip uploaded to the VLE; further explanation was provided during the first Day School class. The uploaded submissions show that many learners still fail to document their own thoughts and reflections in building new knowledge; they prefer to re-describe the information provided to them as new knowledge.

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A Balanced Version of Flipped and Traditional Classroom Methods to Enhance Skills on application of Knowledge to Real Situations

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Introduction

Students who follow a course in technology education are expected to apply their knowledge to real situations in their workplaces. A teacher involved in technical education faces a challenging task in developing such skills in students during the lecture. In a traditional classroom, students listen to long lectures and try to understand the content explained by the teacher. The students are physically present in this type of classroom. However, more often than not their mind is disconnected with the lecture. Teaching methods like lecture breaks, buzz groups, group discussions, handouts etc support to maintain students' attention (Gibbs, 1989). Even so, the enhancement of their talents like application of the new knowledge to a real world problem is still a demanding task.

Flipped classroom method is now popular in education system. This method is simply defined as shifting from a teacher-centered classroom to a student-centered learning environment (Vidic, 2015; Zainuddin, 2016; Lage, 2000; Schiller, 2013). In typical classroom, talking is more often done however it is not effective as doing. Student engagement is necessary to obtain an effective outcome, by reversing the system or flipping the classroom to engage in more activities during the class is one option to achieve targeted outcome of learning process like solving real-world problems (Schiller, 2013).

However a fully flipped classroom does not always support technology subjects. Majority of the students also mentioned in the study done by McCarthy; a combination of flipped and traditional method would work much better (2016). It indicates that a balanced version of both, flipped and traditional, will encourage the entire student group to accomplish their desires in the learning process. On the other hand, Bloom's taxonomy explains six levels of learning (Bloom, 1969) such as remembering, understanding, applying, analyzing, evaluating and creating. In flipped classroom method the lower levels namely remembering and understanding are expected to be accomplished outside the class and the higher levels like application to be achieved during the class.

In this study; a balanced version of flipped and traditional classroom methods is examined so as to get the entire student group involved in achieving the skills on application of knowledge to real industrial situations.

Methodology

Second year students who follow the Latex Technology Course in National Diploma in Technology Program were selected for this study. Time allocated for said course was two hours for lecturing and one hour for tutorial per week. All three hours were amalgamated and one class was conducted per week. It was a small class comprising twenty male students and four female students. Five groups of students were formed by considering their gender and where they stay. Fifteen male students and all the female students stayed in university hostels

and other male students came from home or boarding houses. Three numbers of five member-groups of male hostel team, one group of female students and the other group of five students who came from home/boarding houses were involved throughout the study. Each group was assigned a name and a leader.

During the class the content of the lecture was explained in brief, handouts were distributed among all, and one copy of other extra learning material was given to each group. In addition, related learning materials were sent through electronic mail to each member before the class. The groups were assigned to read and understand the content of handouts and extra learning materials during free time before attending the next class. Each member was advised and guided to accomplish their home work as a team and to be seated group wise in the classroom.

On the following day the class was opened for question and answer session. During the first part of the session, students were given an opportunity to clarify the problem areas of the content which was assigned for them to read and learn, prior to the class. The questions of one group were answered by the other groups with the support of the teacher. The teacher acted her role as a facilitator, guide or mentor. In the second part of the session, the teacher raised the questions on applications and/or real problems related to the industry and the students to be discussed and answered group wise. During the last part of the session student-groups were prepared for the following class as above mentioned.

After twelve weeks each student was asked to comment or give a feedback on new teaching method in written form. They were advised to reveal how they experienced or performed in the new learning environment.

Results

Feedback of students;

Entire student group has commented very positively on new method. All most all preferred question and answer (Q/A) session because they were able to solve their doubts, clarify the unclear area and gain more knowledge by changing the way of thinking. Most of them have highlighted that the previous method was so boring and new method encouraged them to learn, they were able to get ready for the following class as a team and group work helped them to cover vast area of the content than had it been done individually. Extra learning materials were utilized by them rather than former method and realized they were very useful to gather more information. Few students commented that it was better if each student could get an opportunity to answer a question at least once in two weeks. One student commented on the brief lecture delivered prior to the question and answer session: that if it had been little more descriptive he could have understood more.

The following are representative samples of some feedbacks of students.

- 1. New method is good, entire class joins with the lecture; in the previous teaching method when I was seated on rear seats I did not connect 100% with the lecture. Also Q/A session is important for us to think in different ways.
- 2. I was able to gain more knowledge from this new method; group work is one of the best ways of learning. Different students think in different ways. By sharing everyone's ideas, it is possible to cover a large area of our studies.

- 3. The learning materials received by us prior to the lecturer are useful. It is better if you can send all the materials in pdf form as some documents cannot be opened from our mobile phones.
- 4. This new method is very active compared to the previous method which was so boring. Q/A sessions are very good. If a question is asked from each student at least once in two weeks it would be more benefited.
- 5. Actually this method is very good and applicable to the industry. It does not need to pay an extra effort to get ready for exams because considerable amount of the content can be easily memorized when needed.

Teacher's point of view;

It was observed that the entire class participated actively, not a single student had strayed away from the focus of learning. Attendance was improved. The students had several questions to find answers and it led to identify creative students as well as students' diverse learning practices. Communication skills, team work, presentation skills, creative thinking also seemed developing day by day. Furthermore, the teacher was enthusiastic at the same time as she had to involve in self learning process to discuss creative ideas of students and find solutions to real problems that frequently occur in industries.

Discussion and conclusion

In a traditional classroom students did not raise questions and no answers were given actively, they acted like banana blossoms; downward, not ready at all to collect or grasp the content explained by the teacher. However when the classroom was changed into modified version of flipped, the students were like lotus flowers, upward facing and they were ready to collect or absorb whatever the content discussed in the class.

The teacher was able to cater to almost all the students who were in different learning modes such as learning by lecturing, group work, and independent. The said task was accomplished by the teacher without increasing the student contact time or sacrificing the course content as explained in the study of Maureen *et al* (2000).

During the group discussions which were held to get prepared for the following class, most of the students had found their group members functioning as resources to help them learn, as reported by Michaelsen (1992). That was an immense support for them to manage cognitive load (Abeysekera, 2015) and therefore to participate actively in a new learning environment.

As per the positive feedback of students it seemed they had become enlightened to a new learning phase which helped them to think in different ways. By teacher's point of view, continuation of the new method facilitated to develop students' critical thinking and many other skills such as communication, team work etc. Interaction between peers and team work would make their lives easy to survive in industry and finally to develop their professional skills too.

The new method has not only motivated students towards active learning but also it has motivated the facilitator towards self-learning. The teacher was encouraged to find technical problems that occurred frequently in industry and find solutions for them. New techniques adopted in industries were to be searched to apply the knowledge gained by students. As a result the interaction between industry and institute has also developed.

A balanced version of traditional and flipped classroom methods was successfully implemented with students' active participation. The real situations in industries related to the content learned were discussed frequently during Q/A session. Finally the new teaching method could align the students towards enhancing the skills on application of knowledge to real world problems in industries.

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Effectiveness of Holistic and Analytic Assessments in Assessing Student Performances in creative subjects: Student and examiner perceptions

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Introduction

Sri Lankan university education has been in place for many years and it looks for new dimensions to reach international level standards. Active learning strategies are being discussed at many levels within the system and is becoming adopted in many degree programmes. Fashion design and product development degree programme at university of Moratuwa, Sri Lanka is a 4-year degree programme which is based on active learning strategies (University of Moratuwa, Sri Lanka, Sri Lanka, 2013). It has no traditional written examinations and is designed with project based assessments. Each project contains learning outcomes and at the end the students have to submit their project work as a portfolio and they will be assessed under the relevant learning outcomes. This study is aimed to address the issues in current assessment sheets by developing a clear and comprehensive assessment system which can clearly indicate the strength and weaknesses of the students.

Many students complain about current format of assessment sheet because it is very difficult to understand their weakness clearly through it (Table 1).

Learning Outcomes	Comments	Fail	3 rd	2.2	2.1	1 st	
Assessed		0-39	40-	55-	70-	85-	
			54	69	84	100	
Continuous Development of							
Research Techniques;							
Identifying original sources of							
Information, firmly							
establishing its role in							
informing and creating design							
opportunities							
Ability to record research in a							
visually stimulating and							
informative way, using variety							
of media and methods							
Summative Assessment mark							
Additional Comments							
Examiner's Signature							

Table 1. Existing assessment sheet format: Year 01/Term 01

Existing assessment sheet was designed by using holistic approach and students have difficulties to identify their weak points clearly. Some of the feedback (below) of students about current assessment sheet highlight the issue.

- "more paragraphed, more information, so we are **hard to find** what place we are lacking"
- "This assessment sheet is confusing. Hard to understand"

- "It is more complicated and confusing"
- Assessment sheet is good, but **can not clearly guess** which level I am in for each point assessed

Therefore this research was conducted to identify the current issues in the assessment system and develop a new assessment system which can offer better benefits to the students to develop themselves in their learning journey.

Holistic assessment always assess the student in holistic way. They consider the bigger picture and give marks or grades. But analytic assessment system is different and answers are divided into independent components. It helps students get a clear idea about their level (Biggs & Tang, 2007, pp. 183-184). Assessing creativity is a process of assessing qualitative work. Assessing creativity through holistic approaches can produce non-uniformity in assessment among students. Therefore it is better to have systematic approach to convert qualitative data to quantitative data. Analytic rubrics can be used to fulfill this need. Specific feedback is given by analytic rubrics along several dimensions. It is more detailed and give room to plan further developments by identifying weaknesses and strengths. The major disadvantage of this method is high consumption of time in evaluations (The Basics of Rubrics, 2015). Also it is highlighted that effective use of formative assessments can double the speed of learning of a student (Wiliam, 2012, pp. 30-34).

Learning Outcome	Comments	F	D	С	С	С	B	B	В	Α	Α	A+
Assessed				-		+	-		+	-		
Continuous Development	Usage of research techniques											
Identifying original	Identifying original sources of information;											
firmly establishing its role in informing and creating design opportunities	Firmly establishing its role in informing and creating design opportunities											
Ability to record research in a visually stimulating and informative way,	Record research in visually stimulating and informative way											
using variety of media and methods	Usage of variety of Media and methods											
Summative Assessment man	rk											
Additional Comments												
Examiner's Signature	Examiner's Signature											
Examiner's Signature												

Table 2. New assessment sheet based on analytic rubrics

Methodology

Forty students of first year first term were selected for the study. Existing assessment sheet was examined with the curriculum and all the learning outcomes were carefully analyzed to understand the strengths, weaknesses and opportunities. By considering the observations, a new version of assessment sheet was designed. A table of analytic rubrics will help to asses qualitative data by quantifying hence it will help to give reliable grades to the students (Biggs & Tang, 2007, pp. 209-210). Therefore the analytic rubrics were used to design the new assessment sheet (see Table 2). All the levels in the marking scheme were analyzed and defined the expected outcomes in each level by considering the curriculum. Those definitions

were included in the assessment sheet to make easier the task of the evaluator (see Table 3). According to the Zone of Proximal Development theory (Vygotsky, 1978), it gives clear indication to the student to understand their exact level and they can take their own decisions for future developments with the help of the evaluator. Both assessment sheets were given to the selected group and collected the feedback in a written format. Three evaluators also interviewed to get their comments on new assessment sheet.

Level	Description
Fail ; 0-29	Lack No of observations planning, undertaking and analysis
D; 30-39	Minimal observations with Lack No of planning, undertaking and analysis
3 rd / C-; 40-44	Minimal observations and planning, with lack of undertaking and analysis
3 rd / C ; 45-49	Minimal observations and planning, undertaking with lack of analysis
3 rd /C+;50-54	Minimal observations, planning, undertaking and analysis
2.2/ B-; 55-59	Good observations and planning with lack of undertaking and analysis
2.2/ B; 60-64	Good observations and planning and undertaking with lack of analysis
2.2/B+;65-69	Good observations and planning and undertaking with Minimal analysis
2.1/A-;70-74	Very good observations, planning and undertaking with adequate analysis
2.1 A; 74-84	Very good observations, planning and undertaking with well informed analysis
1 st /A+;85-100	Excellent observations, planning and undertaking with extensive analysis

Table 3. Descriptions of each level

Results

All the students mentioned that analytic approach (new method) is better than holistic approach (previous method). Especially they highlighted it is very easy to identify their deficient areas through analytic approach. Students who have got a range of final scores were identified and their feedback is given in Table 4. Evaluators also mentioned that new assessment sheet is more convenient due to the clear explanations about each level. Their major complaint was the high time consumption in the new system. But they were happy on the inclusion of the expectations of each level (Table 3) to the assessment sheet because it reduced the time which was taken in previous assessment sheet to write comments on each learning outcome. As a whole, they were satisfied with the final outcome because the new format allows the student to identify their achieved levels and students can decide future actions to overcome their issues with the help of their lecturer. Also they stated that the new method can be reduce misunderstanding of students on evaluators because evaluators faced many misguided complaints about favouring specific students. Most of the time these complaints were made by other students due to misunderstandings generated by unclear comments on their assessment sheets.

Discussion and conclusion

Holistic evaluation methods are convenient for evaluators since it take less time to evaluate but it is not good for students to identify their individual weaknesses. A major aim of assessments is to identify the existing performance level of students and plan future approaches to develop the student. But it was identified that the existing holistic approach in assessments in fashion design and product development degree course is not benefitting the students. Student's feedback on existing assessments also proved this to be the case. Therefore the previous assessment sheets and curriculum were investigated and new assessment system was introduced based on analytic rubrics. The expectations of each level was also defined and included in the assessment sheet to give better clarity to the student. New approach was appreciated by both students and evaluators and they have compared both assessment methods and gave conclusion that the analytic rubrics based assessment system is more convenient and easy to understand. Evaluators also concluded that analytic rubric based system is creating more comprehensive environment for learners as well as it reduced the misunderstandings of students about their achieved levels. All these observations shows that analytic rubric-based assessments are more accurate to evaluate creativity in the fashion design and product development degree course at University of Moratuwa. It is convenient to the learner as well as evaluator in many forms and it is helping the learner to plan future development activities by understanding the weaknesses and strengths in clear manner.

Stud ent	Achieved level in the assessment	Previous Assessment sheet (Holistic approach)	New Assessment Sheet (Analytic Approach)
01	A+	Can not clearly guess which level I am in for each point assessed	I can clearly understand which level I am in for each assessment point. It is really helpful to understand about my weak points and improve my work
02	A-	It is more complicated and confusing	Simple methodology, clarifies instructions easily
03	B+	Not given	I did not focus on design elements in my project. It is understood through the new assessment sheet and now I can improve my weakness.
04	В	New assessment sheet is better than the previous one because it says about your levels and you have a better understanding	New assessment is clear. But need more space to write the examiner comments, because then lacking area will be explained better
05	C+	It is not very much clear	It is very successful and clear. We can understand clearly
06	C-	I can not able to identify clearly	It is good; I can easily identify my level in each section. It is more clear
07	F	More paragraphed, more information, so we are hard to find what place we are lacking in	Correctly aligned and it is easy for us to understand where our level is. I like this
08	F	This assessment sheet is confusing. Hard to understand	New assessment sheet shows all areas we should develop. Easy to read and get the idea.

Tabla 1	Summary	ofstudent	foodback
Table 4.	Summarv	of student	тееараск

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Incorporating Life-wide Learning into Higher Education

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Introduction

It has long been acknowledged that the traditional method of delivering knowledge through the lecture mode - i.e., a one-way transfer of information from the source (teacher) to the receiver (student) does not result in effective learning or sustainable learning outcomes. This is especially the case in theory-heavy courses, where in my experience, students tend to memorize theories and/or relevant definitions in order to produce them, often word-for-word, in formative assessments or at the final examination. Whether this simple reproduction of information leads to any kind of deeper conceptual understanding or triggers any kind of critical thinking, is highly questionable.

One way of overcoming this problem and getting students to actively engage with theoretical constructs and knowledge is to devise a means for them to apply theories to real-life situations or experiences, and to have them report on their observations or discuss the results. Although this is not always possible to accomplish in every university course for practical and logistical reasons, a third year course titled "Introduction to Second Language Acquisition" easily lends itself to helping students see how theory plays out in practice.

The purpose of the pedagogical research described in this abstract is to discover the effectiveness of incorporating tasks which require engagement with real-life situations or experiences, as part of the learning associated with the course mentioned above. Although several principal theories of second language acquisition (SLA) are well-established in the field, because of the rapidly evolving English language learning environments in multilingual countries like Sri Lanka, there are always socio-cultural factors that come into play which make theories of second language learning more nuanced and complex. Awareness of the real-life situation of learning English as a second language in Sri Lanka is one of the primary learning objectives of this course, so methods were devised to help students understand the social and cognitive processes underlying language learning, which are for the most part, invisible. Perhaps because of this invisibility, even though almost everyone has learned/acquired a second language at some point in their adult lives, students often find it difficult to grasp the processes of SLA and how the human mind converts linguistic input into comprehensible output.

This research is related to the concept described by Ronald Barnett as life-wide education, the idea that learning occurs simultaneously in different learning spaces while the student is engaged in a formal program of studies (2010, p. 2). Barnett observes that higher education is no longer seen as "an interval between stages of the press of responsibilities of youth" (Oakeshott 1989, p. 101), but rather as "a set of learning and developmental spaces in addition to those of the wider world in which the student is immersed and continues to be immersed" (Barnett 2010, p. 3).

Barnett describes this as "liquid learning", and goes on to argue that universities themselves have become "liquid institutions" (2010, p. 2), by recognizing that learning can happen laterally on several different locations apart from the classroom, at the same time. This, as mentioned at the beginning of this abstract, is very different from the medieval concept of a university as an ivory tower where learning takes place in a location distant from real-life situations. Barnett argues, very correctly, that if institutions of higher education are to give students a complete education, they have to think in terms of life-wide education, and move learning and education outside traditional university spaces and boundaries.

Methodology

Returning to the learning objectives of the course "Introduction to Second Language Acquisition", in order to help students better understand and engage with the theories and processes underlying language learning, two projects were designed, which function as the formative assessments for the course. The first of these requires students to observe second language learners engaged in the learning or practice of any of the four language skills, and to submit a report based on these observations. To facilitate this assignment, prior permission was obtained from the University's English Language Teaching Unit for students taking the course to be present as observers in the English language proficiency classes taught by the Unit. Because the objective was for students to notice and analyse specific features of the second language learning environment as well as the learners' performance, a worksheet was designed with specific questions which each student had to answer when writing their Observation Reports. These questions appear below. Students are expected to draw from their knowledge of SLA processes discussed in class, as well as the recommended reading for the course when answering the questions and writing their reports.

- 1. Is the classroom student-centered or teacher-centered?
- 2. What skill/s were being taught?
- 3. What were the sources of linguistic input?
- 4. What types of interactions did the students participate in? (T/S or S/S)
- 5. On what occasions did the interactions take place?
- 6. What kinds of conversational modifications did you observe the teacher making in his/her interactions with the students?
- 7. Describe any instances of uptake, intake or output that you notice.
- 8. Can you relate the language learning you observed to any of the models/theories/hypotheses of second language acquisition you have studied? Explain, giving details.

(T/S – teacher-student interactions; S/S – student-student interactions)

The second project for the course took the form of an exercise in error analysis. Students were required to make contact with a second language learner and obtain a short writing sample (eg: a one-page essay) from the learner. Using their native speaker knowledge of English, students identify any errors in the learner's writing sample. Once this is done, using the literature and theory available on errors made by second language learners of English, students have to classify the errors they find in the writing sample in terms of free variation, systematic variation, developmental errors, and first language interference. In order to do this, students have to be able

to point to the probable cause of each error, using contextual clues in the writing sample to make their conclusions. Students must also be able to draw connections between the structure of their learner's first language (Sinhala or Tamil) and English, in order to determine if an error is the result of first language transfer /interference. The objective of this assignment is to make students analyse a learner's linguistic output (performance) and relate it to his/her current competence in the target language. It is hoped that, in this process, students will be able to uncover some of the cognitive processes underlying an adult second language learner's production of, and experimentation with, the target language.

Results

There are two types of data that can be used to determine the success of these two assignments in terms of learning outcomes. The first and most obvious, is the grades obtained for each assignment by students of the course. Grades are, however, very subjective, especially if given by a single rater. Grades are also a reflection of to what extent a student's performance approximates a teacher's expectations, and can sometimes be based on unrealistic expectations. Therefore, qualitative feedback, provided by the students themselves at the end of the semester as part of their course evaluations, is presented as the data by which to gauge their response to the learning tasks described above. Given below are selected student responses to three questions on the course evaluation form. (Students fill out evaluation forms every year. The responses cited here are those from the year 2015)

Please state what you think of the method of assessment (class observation and learner errors)

- I liked it because we were able to apply the concepts learned in class
- Interesting, did not give much tension
- It was a new experience
- Very Good. I really liked doing the observation and writing the report because it was the first time I did something like that and it was really interesting

What learning outcomes have you achieved from this course?

- Learnt about how learners pick up second language
- Learnt how kids pick up language
- How to analyse second language acquisition
- Learnt about language acquisition process (L1 & L2) as well as disorders associated with language learning
- A good understanding about the approaches to first and second language acquisition
- Understood second language acquisition theories. Sufficient knowledge in error analysis
- Understanding about important conditions and knowledge regarding second language acquisition process

Would you recommend this course to another student? Why or why not?

- Definitely, because it is interesting and helpful
- Yes because the content is interesting

- Yes, because it's a relatable course and easy to grasp
- Yes because it is really interesting and does not give much tension
- Yes, because I found it highly satisfying
- Yes I would, because the entire course is interesting to explore!

Discussion and conclusion

The qualitative feedback (data) from students supports the incorporating of life-wide learning as part of the formative assessment of this course. Even though students may never have done such tasks before, the assignments do not appear to have caused undue anxiety or stress. One student specifically reports a lack of tension in doing the assignments. This could be due to at least two factors – first, clear guidelines were given (and explained) for the Observation Report, so students knew exactly what was required of them. They were also given ample time (up to one month) to complete the assignment. For the second task, students may have felt a sense of positive agency and empowerment in being able to select a learner on whom to base their error analysis, unlike in the case of answering questions at a final examination, which is unfortunately often shrouded in secrecy and even fear, resulting in students feeling powerless and under unnecessary stress.

The second set of bullet points above show that the learning objectives of this course have been achieved, at least with this group of students, and the final set of bullet points show that this course is likely to get fairly good peer recommendations from students who have already taken it. One of the mandates of the Department of English is to encourage students to enter the profession of teaching English after graduation. "Introduction to Second Language Acquisition" is a course which introduces students to the enormously complex processes of human language learning; and generating enthusiasm and excitement in this process is the first step to becoming enthusiastic about language teaching. Broadening students' outlooks by exposing them to reallife second language learners and learning situations is a second, and by no means less important, step in this process. To my mind, this can only be done by taking students out of the confines of the classroom, and enabling them to experience and engage with opportunities of life-wide learning. Although the data presented here represents the feedback of a single cohort of students (due to space constraints), the overall response to this course has been positive over at least seven years, leading to the recommendation that more opportunities of life-wide learning should be incorporated into university teaching/courses.

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Digging the Surface: Activities Promoting Deep Learning in Literature Classes

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Introduction

The education system in Sri Lanka encourages rote learning, with students frequently being required to memorise and then reproduce class notes for "good" performance. Critical thinking, application of lesson material to other contexts, and practical experience to complement the theoretical often do not occur. Discussing the matter, Fernando (2015) quotes accusations by concerned parties that in the Sri Lankan education system "rote learning is given more prominence, and as a result, problem solving skills and original/creative thinking are not promoted...In universities, students merely cram the lecture notes and reproduce them at exams instead of engaging in reference/research and broadening their knowledge". Indeed a primary criticism aimed at State university education is that it is of low quality and low standards. Moreover, a substantial amount of the 32% enrolled in social sciences and humanities streams struggle to obtain profitable employment (Samaranayake, 2016). In 2015 the unemployment rate of newly qualified graduates was 10.2% (Kapurubandara, 2015).

One could argue that this lack of what CVCP module 1 terms "transferable skills" partly results from a "surface" approach to learning as discussed in a course offered by the Staff Development Centre, University of Colombo, which I followed. (MaTE-2016, 2016). Gibbs and Habeshaw (2011) describe the difference between a "surface" and "deep" approach to learning as being closely linked with the difference between memorising and trying to understand. Surface learning is a process where students pay attention to isolated details, often attempting to memorise facts in the form they initially appeared. On the contrary, in deep learning, students are concerned about the underlying message of a text, attempting to connect ideas and formulate their own meaning, possibly with regard to their own experiences (Gibbs, 1992).

A primary way to focus students' attention on the underlying message is through active involvement in the class. Myers and Jones note that Active Learning gives students opportunities "to meaningfully talk and listen, write, read, and reflect on the content, ideas, issues, and concerns of an academic subject" (MaTE-2016, 2016, p. 6-2). While the student thus takes greater ownership of the learning experience, it is primarily the lecturer's responsibility, regardless of course content, to foster such a motivational environment. The purpose of this paper is to present Teaching Learning Activities (TLAs) implemented in the classroom following the identification of obstructions to Deep Learning, and to discuss the effectiveness of the activities in a two-way, collaborative Higher Education process. The format for presenting the TLAs follows the format of Change Agreement Forms (CAFs), as given in the MaTE course I followed.

Methodology

The following activities pertain to theories of teaching and learning, all of which fall under the overarching concept of Active Learning. The first two activities were implemented in a third year poetry course: "The Romantic Age", the third in a second year literature course: "Gendering Literature", and the final in a first year poetry course: "Introduction to Poetry and Poetry Criticism", all offered by the Department of English, University of Colombo. The final TLA was implemented as part of a requirement for MaTE 2016. TLAs conducted in this research are summarised in Table 1.

#	Problem	Reason to address	Activity	Relevant theories	Evaluation by lecturer	
		problem			Positive	Negative
1.	Difficulty in engaging with comparativel y challenging poem	Inadequate grasp of poem and its underlying concepts	Class grouped and each group to draw and present particular scene from poem, engaging with its underlying themes, techniques and overall significance through illustration	Constructivi sm, keeping student attention levels high	Enthusiasm, artistic creativity, critical thinking, collaborative learning	Wide disparities in performance between groups, free- rider issues, insufficient time for lecturer to draw interpretations together
2.	Difficulty in engaging with aspects of new poetic form	Disinterest, leading to inadequate grasp of poem	Write poem (ode) in groups, considering characteristics of ode discussed in class	Constructivi sm, keeping student attention levels high	High level of engagement, enjoyment, creativity, application within short period of time	
3.	Tendency to avoid taking original approach to text and to passively listen to lecturer	Students' critical thinking, application, and creative skills unemployed	Write and perform short play connected to certain themes in text	Constructivi sm, kinesthetic learning	Student enthusiasm, enjoyment of and connection with lesson material, creativity	
4.	Sense of distance with poem/ inadequate identification with what poet says	Reduced sensitivity to poems' underlying concepts	 Find two facts about poems' author Write paragraph on one of two poems and email it to lecturer before class 	Constructivi sm, keeping student attention levels high, SQ4R method	Significant involvement in class discussion, output of interpretive thoughts and intriguing facts	Activity not implemented by everyone resulting in relatively poor in-class attendance

Table 1. Teaching Learning Activities (TLAs) implemented and respective evaluations by lecturer

The theories / models I have used (and also mentioned in Table 1) include Constructivism and Kinesthetic Learning: The Constructivism theory by Piaget discusses the process of the learner building on already existing knowledge in order to attain new knowledge (as cited in Biggs and Tang, 2007). Kinesthetic learning categorises learning styles into three types; visual, aural and kinesthetic. Kinesthetic learners learn through hands-on tasks while they may find being seated in a class challenging (MaTE-2016, 2016). A further model/theory was applied towards keeping student attention levels high: This theory posits that in a lecture, student attention levels drop within a period of around fifteen minutes if the students are engaged in a passive task such as passive listening. Therefore, to maintain relatively stable attention levels, intellectually stimulating activities are used . A few such activities are allowing a short rest (e.g., stopping the lecture for two minutes), changing the nature of the demand made on student attention (e.g., the lecturer using visual aids instead of simply talking), or making new demands on student attention (e.g., asking the learner to solve a problem with a peer) (Gibbs and Habeshaw, 2011).

Results

While the above section describes the lecturer's assessment of the activities, course evaluations completed at the end of the semester reveal the students' views. Students were given the question: "Were the teaching methods used in class effective? Please feel free to comment on any aspect of the teaching methods used". Table 2 below gives percentages of the response types, classed as positive, negative and not mentioned, after which selected responses from the evaluations are quoted in Table 3.

Response	3 rd year	2 nd year	1 st year	
Positive	75% (9/12)	100% (3/3)	92% (11/12)	
Negative				
Not mentioned	25% (3/12)		8% (1/12)	

Table2. Student evaluations of Teaching Learning Activities (TLAs)

Table 3.	Selected	student	responses to) Tea	aching	Learning	Activities	(TLAs	5)
					<u> </u>	U U			

Third year	I liked the poster idea as well as the inclusion of videos. It broke the monotony. It was different, interesting and creative. The difference really helped me to be more involved in the lectures.
Second	I appreciate the fact that you gave us questions to consider when reading certain
year	I loved that little fun activity you gave us on the last day - to write our own script and act it out in class. It was relevant to what was taught but it was also fun and it's one thing I'll never forget :)
First	The methods were very effective and illustrative. Gave us inspiration and
year	Verse effective Equation the planing of side of and discussions in polation to
	poems.

Discussion and conclusion

The activities appear to have promoted deep learning through meaningful engagement with the respective texts. The mention of videos, posters and dramas as effective indicates an increase in student engagement when, as theories of Active Learning suggest, the nature of the demand on attention changes. Notably, none of the students found the teaching methods unfavourable; in fact, some had specifically remarked that they would like to see more such interactive, student-based activities included in future courses, demonstrating how student feedback can assist in the redesign of classroom TLAs to generate deeper learning.

The lecturer's evaluations (Table 1) also point to ways in which the teaching-learning process could be made more effective by addressing weaknesses within the activities themselves. These weaknesses could be linked to Biggs' (2003) theory of Constructive Alignment, where course learning outcomes, TLAs, and assessment are aligned, with the precise contribution of the TLAs towards learning outcomes and assessment clearly mapped. Linked to constructive alignment is Biggs and Tang's (2007) theory of Intrinsic Motivation. Intrinsic motivation is one out of four types of motivation where the learner takes interest in the task itself, and engages in it regardless of the rewards involved. Focus is on the educational *process*, ultimately resulting in deep learning. In the present instance, as I did not always explicitly mention how these activities would benefit the students, perhaps the less intrinsically

motivated ones did not see the necessity of undertaking them. This observation is not surprising, considering the students' long term exposure to rote learning. As the rote approach springs from the learner's belief that it helps him/her attain the singular goal of a good grade, for many students it was perhaps a challenge, at least initially, to engage in an activity that seemingly had no immediate benefit (i.e. a grade).

Apart from rote learning, a student's "readiness component" regarding TLAs needs consideration (S. Ekaratne, personal communication, December 12, 2016). While the first step of activity number 4, finding facts about the poem's author, was simply preliminary to the main (second) step of writing on the poem, I found that some students engaged much more willingly in step 1 than in step 2. Ekaratne suggested that these students were ready to undertake the first task but were perhaps not yet at a stage to tackle the more cognitively demanding second task.

The initial premise on which the Teaching Learning Activities were implemented, concerning their facilitation of deep learning, is supported. Moreover, these TLAs lead the student from Lower Order Thinking Skills to Higher Order Thinking Skills, as stipulated in Bloom's taxonomy (MaTE-2016, 2016). S/he not only comprehends and defines, but also analyses, applies, and evaluates information. However, along with student feedback, constructive alignment, motivation and intellectual preparedness must be considered for the activities to have full effect. This process, in turn, would contribute to taking learning not only "beyond lectures" but beyond the degree programme, to real-world application, through the honing of transferable skills.

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A Study on the Correlation between the Level of Proficiency in English and the Effectiveness of Textile Engineering Learning Process

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Introduction

English is undoubtedly a global language, and the fluency in English ensures a number of professional, educational, economic and cultural advantages (Xerri, 2016). English is today a professional and an academic tool because of its recognition as a global language. Thereby, "English is increasingly recognized as, the most important language to learn by the international community" (Genç & Bada, 2010).

Hence, majority of the undergraduate courses offered by universities and institutes registered under University Grants Commission in Sri Lanka are conducted in English (University Grants Commission Sri Lanka, 2017). Thereby, a considerable potential in writing as well as in speaking in English is required in order to excel in academic performance. But students who get through the G. C. E Advanced level examination and possess the qualification to enter national universities in Sri Lanka are not required to show any evidence of their English proficiency. Obtaining a pass for General English at the G. C. E Advanced Level examination is not an entry requirement for Sri Lankan national universities. Moreover, it has been identified that 13% of students who have sat the G. C. E Advanced level examination in 2009 and 2010 and been eligible to enter medical college have failed in General English (De Silva, Priyabhashini, Godage, Premakumara, & Pathmeswaran, 2012). Thereby, it is apparent that all undergraduates are not proficient in English despite the fact that majority of higher study courses are offered in English.

The relationship between language proficiency and academic performance is a topic which has been debated enormously. It has been identified that students who enter university with limited English proficiency are unable to engage effectively in the learning process (Murray, 2010). For instance, a research carried out in Sri Lankan Institute of Information Technology has found out that the incompetency in English language is a "drawback for many interested learners" (Wickremaratne, Wimalaratne & Goonetilleke, 2008). Furthermore, it is investigated by several Sri Lankan researchers that students who enter medical college with better skills in English at the time of admission engage in studies effectively (Mendis & Babapulle, 1983).

Moreover, early researchers have found out that writing (Sajid & Siddiqui, 2015) reading (Hermida, 2009), listening and speaking skills (Morreale & Osborn, 2000) contribute to students' academic success which highlights the fact that language skills do enhance one's academic performance. After indentifying the importance of proficiency in English for academic success, SLIIT has initiated self learning in English through digital learning which is found out to be successful in contributing towards language proficiency (Wickremaratne, Wimalaratne & Goonetilleke, 2008).

The degree program of B. Sc. in Engineering with Textile/Clothing specialization is offered exclusively in English. Written examinations, oral presentations and viva are conducted in English. However the need for better English proficiency has been identified and commented by many stakeholders of the textile engineering learning process. The objective of this research is to explore whether English language serves as a barrier for the undergraduates of the department of Textile and Clothing Technology of University of Moratuwa with limited English proficiency, in acquiring Engineering knowledge and excelling in academic performance because early researchers have acknowledged that writing, reading oral, and listening as key skills which uplift students' educational performance at higher educational level.

Methodology

The research is designed with the purpose of identifying whether there is any association between the level of English proficiency and the effectiveness of engineering learning process. A quantitative research design is adopted with survey research strategy. The entire population of registered final year undergraduates of the Department of Textile & Clothing Technology is taken as the sampling frame for the questionnaire survey.

A research framework is developed after a thorough literature review where "the level of English proficiency" and "the effectiveness of engineering learning process in English" are considered as independent and dependent variables respectively. Four parameters were used to measure the level of proficiency in English, namely, English speaking background, academic qualifications in English, level of engagement in developing competencies in English and self assessment of competency in English of the respondent. And the effectiveness of the engineering learning process was measured by the experience of undergraduates and the academic performance in engineering studies.



Figure 1. Research Framework

A questionnaire was used as the main tool of primary data collection where it included questions that measured above parameters on Likert Scale. Certain parameters such as academic qualifications and academic performance were identified specifically and then converted to an ordinal scale. Since normality assumption is not valid due to smaller sample size, non-parametric tests such as Mann-Whitney, Chi-square and Spearman rank correlation were performed to test the hypothesis.

Results

A Statistical analysis was performed based on the primary data collected through the questionnaires. The response rate of the questionnaire was 89% where 39 responses were received out of 44 respondents.

Chi-square test and Spearman's rho were performed to test the null hypothesis, that there is no association between the level of English proficiency and the effectiveness of engineering learning process in English. The test results indicate a Chi-square test statistic of 7.422 and a rank correlation of 0.513 where the p-values of both test statistics are not significant at 0.05 significant level. Therefore the null hypothesis cannot be accepted and it can be concluded that there is an association between the level of English proficiency and the effectiveness of engineering learning process in English.

Test	Sample Size	Test statistic	<u>p-value</u>
Pearson Chi-Square	39	7.422	0.006
Spearman's rho	39	0.513	0.001

Table 1. Test Statistics of Chi-Square and Spearman's Rho

Further, Mann-Whitney U test was performed to test whether the level of proficiency in English and the effectiveness of engineering learning process in English show significant differences based on the stream of studying. The p-value of the Mann-Whitney test statistics indicates that the level of proficiency in English in two streams is not significantly different at 0.05 level. However effectiveness of engineering learning process in English is significantly different between the two streams at 0.05 level. Higher mean rank of the textile stream suggests that those students find it easier to grasp engineering knowledge taught in English than Clothing stream.

Table 2. Test Statistics of Mann-Whitney U

<u>Test variable</u>	<u>Stream</u> (Textile/Clothing)	<u>N</u>	<u>Mean</u> <u>Rank</u>	<u>Sum of</u> <u>Ranks</u>	<u>Test</u> statistic	<u>p-</u> value
Level of proficiency	Textile	21	22.93	481.50	127.500	0.083
in English	Clothing	18	16.58	298.50		
Effectiveness of Engineering learning process	Textile	21	24.76	520.00	89.000	0.004
	Clothing	18	14.44	260.00		

Discussion and conclusion

This research has specifically focused in identifying the impact of English proficiency on the effectiveness of textile engineering learning process in English. The independent variable, the level of proficiency was measured on a Likert scale by several questions and a combined score is assigned for the variable. In order to measure the English language background their first language and their frequency of speaking in English with their family members and their friends at the university, were identified. Grades obtained by the respondents for English language at G. C. E O/L and A/L examinations, other qualifications acquired for English and the medium of language in which they have sat the A/L examination were identified in order to measure the academic qualifications in English. The respondents were then asked to rate

their English proficiency in reading, writing, speaking and listening as per their self assessment. They were also asked to rate their level of engagement in improving their English proficiency during their undergraduate education.

The effectiveness of the textile engineering learning process was also measured on a Likert scale by several questions related to their experience in listening to lectures conducted in English, understanding reading materials written in English, facing oral and written examinations conducted in English and their Current Grade Point Average value (CGPA). A combined Likert score was then assigned for the dependent variable as well.

The statistical analysis proves that there is an association between the independent and dependent variable. Therefore it can be concluded that the level of proficiency in English language and the effectiveness of textile engineering learning process in English are positively correlated. Also the effectiveness of engineering learning process in English is significantly different between two major streams of studying even though the level of English proficiency is not significantly different. So this can be a result of other factors related to stream of studying. So it is recommended that competencies of reading, writing, speaking and listening in English language should be enhanced by incorporating suitable learning tasks into the undergraduate curriculum of Textile/Clothing Engineering.

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The use of an Initial Teacher Training Programme to develop Lecturer Skills to move Higher Education teaching beyond Traditional Lectures

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Introduction

Present-day undergraduates, along with universities, are often criticised for a lack of higherorder thinking skills (HOTS) and that these have not been developed by the time students graduate. While this has resulted in the avoidance by some corporate sector institutes, such as banks, in employing graduates at entry levels, this lack of skills has been linked to noninteractive methods of teaching and often linked to the transmission mode of delivery adopted in traditional university lectures.

Although traditional lectures continue to be the predominant mode of teaching in most university departments of study, changing this teaching delivery mode has encountered considerable resistance, with a significant cause being the lack of knowledge on alternative methods of teaching by lecturers. In the literature, the traditional lecture has been reported as ill suited to improve higher education skills of graduates (*e.g.*, Biggs, 1999/2002; Biggs & Tang, 2007/2009; Gibbs & Habeshaw, 1992). As a consequence of traditional teaching methods being identified as a significant causative factor failing to up-skill university graduates, the Presidential Commission on Higher Education (in the 1990's) mandated universities to train new lecturers in a range of teaching methods with a view to developing HOTS in students. As university lecturers were required to follow a course in pedagogy as an initial teacher training programme, universities set up Staff Development Centres (SDCs) which delivered courses in pedagogical methods in order to train university lecturers to adopt a diversity of methods in their teaching, including moving beyond the traditional lecture format.

In this study, the basic lecture is regarded as the traditional teaching situation where the lecturer serves as the source of subject information, in a large class setting. In this setting, a 'traditional lecture' is lecture-room teaching where information is transmitted by the lecturer from a lectern to deliver information to students such as through students taking down lecture notes and without further student participation. 'Moving beyond' within the basic (large class) lecture format is when the lecture is no longer practiced in its traditional form, but is interrupted in a pre-planned manner by the lecturer, by introducing sequenced interventions which give students the opportunity to participate and engage. This 'moving beyond' is therefore not subjective but is a facilitatory intervention which can even be numerically counted. Such interventions have proven to be effective and are well-documented in the pedagogic literature (*e.g.*, Miller, McNear & Metz, 2013; Miller & Metz, 2014).

This paper is based on a study conducted to identify how junior university lecturers had responded to their training course in pedagogic methodologies that was conducted by the Staff Development Centre of the University of Colombo (SDC) so that the traditional lecture method was no longer their practiced norm. The paper analyses which teaching approaches and methods course participants of three recent cohorts had adopted as a major teaching change that they themselves conceptualised as worthy of being showcased to assess their teaching development. Participants considered these as new pedagogic teaching practices they had learnt and adopted through the training they underwent in this course. Such responses of 156 lecturers were analysed. This analysis categorised teaching methods of lecturers that were showcased and which moved their teaching beyond the 'traditional lecture'.

It analysed teaching methods further to show what percentages of lecturers still used the basic lecture format while moving beyond the traditional transmission type of lecture and what teaching changes these lecturers had used to do such teaching improvements.

Methodology

The data were collected from academics who had followed a mandated training course in pedagogical methods, the Certificate in Teaching in Higher Education (CTHE). Data from 156 course participants who underwent training in three cohorts of this course were used in the study, not leaving out anyone who completed the course. The number who did not complete the course in those 3 cohorts and hence excluded from this study was two. At the end of this training course, participants were required to present a seminar to show and discuss a teaching improvement change they had adopted during this course. This seminar was used to assess whether participants had undergone a developmental change in their teaching-related approaches and methods, so as to merit passing this course.

These course participants came from 12 universities / institutes / campuses from across Sri Lanka and from a range of faculties / disciplines which ranged from social sciences and humanities, law, management, sciences, medicine, engineering, information technology.

The data from their assessed presentations were analysed quantitatively to determine numbers and converted to percentage values to reflect the teaching methods as were reported in the participant seminars. The seminars were analysed qualitatively to examine which methods retained the basic lecture format, which methods moved considerably beyond the traditional format of the lecture delivery mode and which seminars had considered areas / topics other than teaching methodologies.

The quantitative data collected for the study were analysed using percentages. The qualitative data were analysed through primary coding.

All participants had consented to allow the use of their data for educational and research purpose. This is in accordance with the "Revised ethical guidelines for educational research" (BERA, 2004) published by British Educational Research Association. Further, in upholding the responsibility towards the course participants in the sample of this study, the eight areas in BERA (2004) guidelines were adhered to.

Results

Of the 156 participants, 59% showcased the use of teaching methods that moved their lectures beyond the traditional lecture format (Table 1, last row), while the balance 41%, did not report on teaching methods *per se* but on methods to do with other aspects of teaching such as assessment and other methods to develop students (*e.g.*, Chickering & Gamson, 1987). This latter category is not analysed further in this study as it did not relate directly to adoption of methods of lecture-based teaching (*sensu* instruction). Thirty nine percent of all participants had used the basic lecture format in their teaching but had incorporated changes within the lecture format to introduce teaching improvements so that the transmission mode of delivery was changed and student engagement and learning enhanced. In comparison, 20% of all participants had chosen to showcase the adoption of teaching methods that reported

how their teaching had moved considerably beyond lecture-based teaching *per se* and which included methods such as small group teaching.

		Nature of Teaching Change			
<u>Trainee</u> <u>Cohort</u>	<u># in</u> cohort	<u>Non -</u> <u>Instructional</u> <u>methods</u>	Instructional delivery methods		
1	66	31 (47.0%)	35 (53.0%)		
2	53	26 (49.1%)	27 (50.9%)		
3	37	7 (18.1%)	30 (81.1%)		
TOTAL	156	64 (41.0%)	92 (59.0%)		

Table 1. Numbers (with percentages) of trainee participants in the sample and the nature of their teaching changes

Thus, a larger group of lecturers (39%) still used the basic lecture-based teaching method but with improvements that incorporated 'active learning' methods such as buzz groups, the cloze technique, peer interactions etc to make their teaching more interactive and targetted towards HOTS development.

An interesting difference between the cohorts was that the last cohort featured teaching methods that moved beyond lecturing to a much greater extent than the first two cohorts of participants.

Table 2.	The extent to which each cohort of trainees changed their traditional lectur	e
	mode of teaching after being trained in the CTHE course	

		The extent of teaching change relative to the traditional lecture mode of delivery				
Trainee Cohort	Instructional delivery changes (number)	Change incorporated within Lectures (e.g. Buzz)	Teaching delivery changes done considerably beyond traditional lecture (e.g. SGT)			
1	35	25 (71.4%)	10 (28.6%)			
2	27	19 (70.4%)	8 (29.6%)			
3	30	17 (56.7%)	13 (43.3%)			
TOTAL	92	61 (66.3%)	31 (33.7%)			

In this way, 81% of participants of this last cohort (Table 1, last column, penultimate row) showcased teaching methods that had progressed beyond the traditional lecturing mode whereas only around 50% of participants of the first two cohorts had chosen to showcase similar teaching methods that moved teaching beyond the traditional lecture. A greater percentage of trainee participants in this last cohort had also used teaching changes that moved their teaching much beyond the lecture mode (Table 2, last column, penultimate row at 43%, compared with only nearly 30% of the previous cohorts), using methods of small group teaching incorporated within their lecture delivery.

Discussion and conclusion

Various interventions can be used to improve university students and to develop their skills such as HOTS. While all these methods interact efficiently to produce a student with skills needed for the 21st Century, different lecturers can choose different approaches and methods that suit their disciplines, the student population they teach and even the methods with which individual lecturers may feel most comfortable. It is this last feature that is used by traditional lecturers to persist in using the traditional lecture in their teaching but may do so due to lack of knowledge on alternative teaching methods. In contrast, effective lecturers who are knowledgeable on a range of teaching methods can still select a method with which the lecturer feels most comfortable, but does so by incorporating changes to traditional methods that move the teaching beyond formats such as a purely lectern-based traditional lecture format. This paper, in reporting these improved teaching approaches, shows that it is therefore an expanded knowledge base on lecturing that empowered the effective lecturer to move beyond traditional lectures and thereby to facilitate student engagement and development. It is this expansion of pedagogic knowledge application and teaching skills development that lecturer training courses should attempt to develop and this presentation will illustrate and further discuss the variety of such teaching methodologies which these courses can develop by improving lecturers' knowledge and skills, which in turn can be used to develop university students' knowledge and 21st Century skills.

The study also showed that the same teacher training course can facilitate different cohorts of lecturers to develop different methods to assist student development, such as considering improving their lectures or improving other teaching related aspects. This indicates how the strategy of 'changing the task' (*e.g.*, Brown, Rust, & Gibbs, 1994) can be used by course trainers so as to induce lecturers to improve their teaching methodologies in different ways, as suited to teaching needs across institutional, subject or student settings.

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Facilitating Active Learning through Story Telling

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Introduction

Story telling has always been an essential part of human nature. Stories, myths, metaphors, anecdotes, and analogies have been used as a means of communication and more importantly in teaching since time began. Telling stories is a unique human experience. Human beings are capable of communicating their own experiences and others experiences to each other which support the growth of cumulative wisdom. This wisdom handed down from generation to generation become part of any nation's culture as well as travels across time and continents inspiring and educating generations.

Storytelling has had many functions ranging from a hobby to serving as an extra support to personal development. Above functions can be seen to be relevant to classrooms at primary, secondary or higher educational level. Storytelling can be used easily to provide both lesson material and teaching method at any one of those levels. In fact, for ages teachers around the world have practised storytelling to great effect and found it effective to turn an abstract concept into a more concrete reality.

Teachers often use storytelling as a way of disseminating knowledge and helping their learners to make sense of issues. Mostly, these stories occur spontaneously and are considered trivial to be integral to learning and teaching activities. However, with the expansion of reflective learning practise over the last decade in the education systems and the awareness that the learners should be exposed to the meaningful links between theory and practise, the possibility to link storytelling to teaching in a more consequential manner was recognised (Clandinin and Connelly,1990; McDrury and Alterio, 2001). Therefore, storytelling is now popular not only in disciplines such as English, languages, arts, drama but also in disciplines such as science, medicine, management, business and executive education.

According to neuroscientists, the brain is wired to organize, retain and access human experiences through stories. Rossiter (2002) agrees that storytelling is a teaching method that meets brain-based learning theories. Not only that, as an active teaching method storytelling meets experiential, reflective and transformational learning theories. Stories make students involve in the actions and intentions of the characters. According to Bruner (1986), the audience in an storytelling situation enter into two levels of mind; the "landscape of action" and the landscape of "consciousness" level. With this dual involvement students enter into the mind of the characters and into the profound understanding of the story. Students undergo experiential learning through this interesting experience. Further, McDrury and Alterio using their five stage model showed how reflective learning can be facilitated through storytelling activities. They also showed in this five stage model the way students gain deeper and richer meaning of new information being taught. According to Jackson (1995) storytelling not only provide information but also can be considered as a tool for transformation as it can guide students towards personal growth and change. Moreover, findings from brain based learning

research also shows that storytelling take students into a much deeper level in the course content than what is done by traditional forms of teaching (Caine *et.al.*, 2005).

Using students in National Diploma in Technology who are currently in their second year following the Textile and Clothing course, this study was carried out to examine the effectiveness of storytelling as an active teaching/learning method.

Methodology

The objective of this study was to determine the influence of storytelling as a teaching and learning method of adult students who are currently in their second year of the National Diploma in Technology (NDT) course at University of Moratuwa.

Oral narration was used as the type of storytelling and the stories represent a sequence of events that were designed to teach different topics of the course content in three successive classes of the Statistics and Quality Control course. There were 40 students participating in the study with approximately 40 % of the class being female and the other 60 % being male. All of the students were between the ages of 21-24 years.

Lesson plans were developed for the first three topics covered in the Quality Control subject and was conducted on three successive days. In this study, the arrangement was a formal classroom, there were multiple listeners and the stories were predetermined as the model published by McDrury and Alterio (2001) for storytelling in the class room.

In all three lessons, after introducing and explaining the lesson like in a formal lecture, all forty students participated in a short pre-story-test to measure their learning from the lecture. In this pre-story-test students had to use the knowledge that they gained in the lecture to answer a question based on a real life problem. The answers were marked soon after the test. However, the results nor the correct answers were revealed to students. Then, a short story that related to the same lesson was told and the relationship of the story to the lesson was also discussed. Finally, a post-story-test was conducted. In this test a question similar to the pre-story-test question was given to the whole class and the answers were evaluated.

The first short story (lesson 1) entitled 'NASA ignoring quality - Challenger shuttle' related to the concept of the importance of quality control. This story also conveyed the cost factor of ignoring quality.

The second story (lesson 2) entitled 'Once quality was second priority for Toyota' emphasized the importance of quality assurance. The third story (lesson 3) was a well known fable entitled 'Donkey and the dog'. This story related to a tale of what results when one does an unauthorized job. Further, this story related to the concept of inspection loop and the process of decision making in crisis.

The effectiveness of the story telling was evaluated using the pre and post-story-test results and a learner reaction survey. This learner reaction survey questions were based on reaction/opinion survey of Eck (2006) done for his research on effectiveness of storytelling for adult learners.

Results

The purpose of this study was to investigate how storytelling as a teaching and learning method can impact on the learning and information retention of adult students who are currently in their second year of NDT course.

Tuble 1.10tul 11e ullu 10bt blory test 1	coulto. I uneu oui		
Test	Lesson 1	Lesson 2	Lesson 3
Pre and Post-story-test t-test score	4.43	4.48	4.81

Table 1. Total Pre and Post-story-test Results: Paired Samples Statistics

Forty students participated in the three sessions of this study and completed both the pre and post-tests. On the pre-story-test, the total mean scores were 7.0, 8.0 and 8.25 out of 20 available points in lesson 1, 2 and 3 respectively. The post-story-test mean scores of 15.75,17.5 and 18 respectively for the same lessons and revealed a significant difference between mean scores of two tests which indicates a very positive result for learning new information and application of that knowledge to real life situations.

A paired sample t-test was conducted to reveal possible levels of significance between the total pre and post-story-test results for lessons 1-3 at a 95% confidence interval of the difference. In order for the reported t-test scores to be considered statistically significant, it needs to be at 2.0 or higher. Thus, total mean t-test scores of 4.43, 4.48 and 4.81 (Table 1) for pre and post- story tests which indicated positive levels of significance.

Table 2: Results of the learner reaction survey

Survey Opinions	Quantity	Mean	SDV
1. The storytelling exercise held my complete attention.	40	4.25	0.437
2. I could visualize aspects of the story such as characters,	40	4.12	0.636
setting and/or activities taking place.			
3. Using stories gave me deeper insights into the content of	40	4.37	0.446
today's lesson.			
4. I believe that my initial opinions or perspective on this	40	4.87	0.514
topic has changed as a result of today's lesson (explanation			
with a story)			

Note: Scale Key: 5=Strongly Agree 4=Agree 3=Undecided 2=Disagree l=Strongly Disagree

The level and nature of learner engagement was measured by the first three survey opinions. Learner engagement received its highest mean score of 4.37 on a scale of 1-5 (Table 2) for the opinion on understanding level of students in the learner reaction survey. Furthermore, the fourth mean score in Table 2 also shows that many students strongly agree that there was a shift in mind when a story was attached to the lesson covered. This survey and the t-test results of pre and post-story tests are positive indications of high level of learner engagement during this three lessons of the study.

Discussion and conclusion

Many educational theorists report that one of the main benefits of storytelling in the classroom is its ability to highly engage students on many different levels of Blooms Taxonomy. This research study measured student engagement levels in the lecture by pre and post-story test scores and by conducting a learner reaction survey. The statistical analysis of the results of the pre and post-story test results confirmed a significant improvement in application of the gained knowledge in a real life problem. Further, the survey showed that

the students also agree that their engagement in learning was high in the story telling sessions. These findings matched the learning theories presented earlier in the introduction section. In particular, deep and reflective learning through storytelling presented by Caine *et.al.*, (2005) and McDrury & Alterio (2001) respectively, is evident in the progress students showed in the pre and post-story tests.

These results also represent, to some extent, the effectiveness of the predetermined stories and the storytelling of the researcher. Finally, the results of this study indicate how storytelling can be used in higher education today to actively engage students in learning activities.

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Effect of Spot Tests to check student learning in Large Class Teaching

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Introduction

One of the major challenges experienced by many large class teachers is to know whether the students understood what the teacher taught. Even if the teachers repeatedly ask questions like "Did you get the point?", "Do you have any questions", "Do you need more clarification?" responses are very low due to large numbers in classes. On the other hand students are also not sure whether they understood it or not unless they try to apply it by themselves.

According to Gibbs and Habeshaw (1989) adults learn differently. Adult students are mature and prefer to be treated as adults. In adult learning, the learner is self-reliant and the learner's experience should be used as a resource for learning. Their orientation should be task or problem centered, not subject centered. Adult students are motivated by internal incentives and curiosity.

As Denicolo, Entwistle and Hounsell (1992) highlighted, active learning consists of four distinct features. Active learning searches for meaning and understanding. It enhances a greater student responsibility for learning. Active learning also puts a high priority on the skills students need to acquire or to refine in order to make use of what they know. It involves looking beyond the course work and encourages students to confront learning with their subsequent careers and everyday lives.

When analyzing the results for Mathematics course in 2015, there were around 17% failures (less than 40 marks). Higher grades were also less reporting 6% of A (over 70) grades and 28% of B grades (55 to 69). Average mark was around 49 for the subject Mathematics. This shows that students have missed some important points in their learning. Hence this study was conducted to see how spot tests can be used to improve students' learning.

The objective of this study was to analyze effects of using spot tests in large classes to teach Mathematics.

Methodology

First year students who follow the National Diploma in Technology (NDT) programme at Institute of Technology, University of Moratuwa were selected as the sample. Students of two large classes, each having around 175 students, were involved in this study. Students were given the spot test at the end of the lecture. Learning outcomes which were assessed by each spot test were identified. Their answer scripts were marked, their performances and mistakes were noted down. Data were gathered for the analysis from the answer scripts. Students' performance was analyzed using simple percentages.

This was a cross sectional case study done in a single place and the study period was around 8-10 weeks.

Spot Test

Diagon give your details

Students were given a very simple question/ problem (covering one or two learning outcomes) and they were asked to write the answer within 5-10 minutes. The form with the question was distributed while the class was being conducted and they were given time to answer at the end. The size of the form was half of A4 sheet. In side 1 of the form the question was printed. They had to write their details and put their signature also in side 1. They got space to write the answer in the other side (Figures 1 and 2). Two or four questions were prepared for one lesson and these were distributed in a way that two neighbouring students never got same question.

SIDE 1	Course :NDT First Year – 2016
JIDE I	Subject :DIS 103 Mathematics

Please give your	uelans.		
Name :			
Field :		Serial No.	
Signature:		Date :	
Please complete	e the question and submit the	form before you lea	ave.
Question 1			
In the triangle O	AB $\overline{OA} = \overline{a}$ and $\overline{OB} = \overline{b}$. If	C divides the line AE	3 in the ratio 1:2 and D

divides the line OB in the ratio 1:2, find \overline{DC} and show that DC is parallel to OA.

Figure 1. Spot test Example 1 (Side 2: for Student to write answer)



Figure 2: Spot test Example 2 (Side 2:: for Student to write answer)

Implementation

For the first section vectors, 7 lecture hours were allocated. It took 7 weeks to cover the section. Then 3 spot tests were given at the 2^{nd} , 4^{th} and 6^{th} weeks.

All the forms submitted with answers were marked and returned. A summary of students' performance was discussed in the 8th week before starting the next section, Complex Numbers. Since students put their signature, this was used as a signature verification also.

Results

Performance of Question 1

Question 1 was used to assess the learning outcome; "Apply ratio formula in problems".

Most of the students attempted it correctly and were able to get the answer. Only a 5% of students were not able to apply ratio formula properly to get the correct answer.

Performance of Question 2

The learning outcomes assessed by question 2 were "Find unit vector of a given vector" and "Determine magnitude of a given vector". Fifty percent of students received the question with first learning outcome and rest of the students received the question with second learning outcome.

Around 35% were not able to find the unit vector properly and nearly 20% were not able to find magnitude of a vector. The main reason may have been not reading the question properly.

It was also interesting to note that some students had copied the answer from the neighbouring student without realizing they got two different questions.

Performance of Question 3

Similar to question 2, two learning outcomes were assessed. Around 50% of students received the learning outcome "Compute the dot product" and the other 50% received "Determine the angle between two vectors".

Around 20% of students did not approach the question properly. Some did mistakes while attempting this question. Some of them (22%) didn't use the correct symbol (\cdot) (instead they had used (×)). Some students (18%) got mixed up with two definitions of dot product and cross product.

Discussion and conclusions

In this study spot tests were used to check whether the students' learnt selected learning outcomes under the section Vectors. Around 95% had learnt first learning outcome and for other 4 learning outcomes percentages were 65%, 80%, 78% and 82% respectively.

Spot tests can be used to assess students' performance as well as to identify the mistakes of students. Furthermore, this can be used as a method of assessment as well as a feedback of

students' learning. Students get an indication of their performance and the teacher learns aspects for improvements both in teacher and students.

Since the class size is large (around 175 students) this exercise need more effort and time before and after the lecture. To reduce extra workload on the lecturer, one recommendation is to use one spot test for 4 lecture hours. As there are 30 lecture hours per year there will be around 7 spot tests.

The learning outcomes which were not understood properly by students can be identified by reviewing the exam marks for each question of an individual subject. Thus, next recommendation is to use spot tests to assess these learning outcomes in the following year.

At the end of each section an assignment of 30 to 40 minutes, which covers important learning outcomes, can be given. This will also be helpful in identifying the extent of students' learning in a particular section.

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Setting a More Effective and Supportive Learning Environment for Small Class

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Introduction

According to Darling-Hammond (as cited in "What Makes a Teacher Effective?", n.d.) leading factors in teaching effectiveness are knowledge of teaching and learning, knowledge of subject matter, experience, and the set of qualifications measured by relevant authorities. Any teacher can become knowledgeable regarding their subject expertise and they can own various types of qualifications in the education field, but when it comes to classroom contexts they should be able to apply their skill of teaching according to the nature of the students in the classroom. Therefore, in effective teaching, teacher should be able to identify different capabilities and skills of the students in the classroom and be able to use a range of methods of teaching and supporting learning. Then it will create an effective and supportive learning environment which motivates weak students to be better and strong students to go beyond their current reach. Therefore creating a supportive learning environment through better communication with students in the classrooms becomes a vitally important practice for an effective teacher. With this background, this study focused on creating an effective and supportive learning environment by identifying the nature of the students in the class room and then applying different teaching methods. Since we can create a more effective and supportive learning environment for students in small groups than in large groups by directing teacher's attention on each individual student, small class has been considered in this study. However methods suggested in this study may be used for large class also, when suitable modifications are available.

Methodology

The profile of learning community in which I am engaged as a teacher can be described as follows. I am attached to the Department of Computational Mathematics of the Faculty of Information Technology in the University of Moratuwa. Department of Computational Mathematics offers the courses in Mathematics and Statistics. Since there are students who did not follow Mathematics at their GCE Advanced Level (A/L), it is quite challenging to develop mathematical and analytical skills required for subjects in Information Technology with some students. How I converted a traditional teaching environment to a supportive learning environment for my students in such a learning community will be discussed in this paper. To initiate this study I obtained student feedback regarding my teaching. Based on their feedback I listed frequently encountered problems in my teaching as follows: Students appear bored during the lecture since the course contains more mathematical formulas and theories, students cannot keep their attention throughout the lecture, students do not have a good memory about the previous lessons, since some of the course modules are more theory-based courses students have difficulties in understanding those theories.

With the help of knowledge and experience I acquired from the Certificate Course in Teaching in Higher Education (CTHE) offered by the University of Colombo I could experiment on different teaching methods for my class to solve all the above problems very

effectively. Teaching methods I found in literature have been modified or changed in a more effective way in this study to achieve a supportive learning environment as follows:

Understanding Students through their Learning Styles

All students have unique learning styles. If teachers can identify their learning preferences before applying any kind of teaching method students will be greatly benefited. Therefore I asked students in my class to identify their learning styles through VARK (Visual, Aural, Read/write, and Kinesthetic) questionnaire which alerts people to the variety of different approaches to learning (Fleming and Bonwell, 2006). Since learning styles are not unique throughout the life I involved them in adapting other learning styles should change teacher's teaching style because teachers are facilitators of student learning. Therefore I practiced it by using Multiple Intelligence (MI) teaching style questionnaire (Tanner, 2000). Through that questionnaire, I created my MI profiles before and after identifying students' learning styles.

Preparing Handout to facilitate Lecture Breaks

Gibbs and Habeshaw (2011a) explained the difficulty of doing a passive task for long time without loss of attention. They showed that after 15 minutes of a lecture learner's performance will be decreased. Therefore they recommend that teachers should involve students in doing some different activities at the time points just before their attention on the lecture begins to decrease. Therefore I prepared my handout in order to facilitate the lecture break activities. I employed the Cornell method (Academic Skills Center, n.d.) which gives a systematic format by allocating a space on left-hand side of the note to mention main ideas and key words after writing the notes in the main space. I improved Cornell method by dividing my note into four sections for main note, main points, key words and question. I involved students writing important points or writing key words or answering question on the given spaces of handout at the lecture breaks. I permitted students to have discussion as a group in this exercise.

Help Sheet

Cheat sheet is a very popular item in some examination. It is a sheet of notes produced by students while preparing for an examination. Since it is used for examination teacher can constrain the production of sheet (Raadt, 2012). This tool involves students in summarizing. Summarizing also a good technique we can use to remember contents. Therefore I provided a sheet to students on the first day of my lecture series. I already named it as 'Help Sheet'. On that sheet I just wrote the names of the main theories which are needed to solve most of the problems of the course. Students were expected to fill the necessary information of those theories. Whatever information they believe was relevant, they were free to include in the 'Help Sheet'.

"Answer and Get Marks" through "Rounds"

Round is a popular method of involving every student in speaking. It is going around everyone in the group and asking them to respond to a particular question (Gibbs and Habeshaw, 2011b). In my lecture one of the bad experiences I faced is difficulty of getting students involvement in questioning. Since my class included only five students I could not apply 'round' as it is. Therefore I got the concept of 'round' and implemented a new activity called 'answering and getting marks'. I informed students that if they give an answer when I ask a question I will give them one mark. When implementing this activity I showed on the white board total marks collected by them every day so far. My purpose of showing their marks was increasing the engagement of the students who show lower performance in this activity.

Reflection through writing Most Important Points

When I conclude the lesson on that particular day I wanted to involve students in thinking back on the lecture. Therefore, at the end of lecture I involved students in writing most important points of the day's lesson (Gibbs and Habeshaw, 2011a). At the beginning of the lecture I informed the students that they have to write most important points which they learnt today at the end of the lecture. It directed students to pay more attention on the lecture. At the end of the lecture I allowed students to do silent reflection for few minutes. Then they should write most important points of the lesson. Then I collected their sheets. Later I marked how many they remembered and how many they missed. In order to motivate them for this task I announced the name of the students who captured all the points.

In order to improve students' inter personal skill and logical mathematical thinking I conducted a group exercise by involving students to use their handout at lecture breaks through either filling spaces or writing answers for the questions in the handout. Help sheet and 'round' activity were provided to improve their verbal-linguistic skill. Improvement of inter personal skill was focused by the activity related to reflection. Other than above activities, I involved my students in activity called 'poster tour' in order to improve their visual spatial ability and inter personal skills. I asked students to create a poster by summarizing previous lessons and then they had to tour around the displayed posters asking questions.

Results

Table 1 shows the VARK results obtained from the students in order to identify their learning styles. According to Table 1, students in my class have different learning styles. Some students had visual and read/write learning styles.

	Visual	Aural	Read/Write	Kinesthetic	Learning Preference
Student A	07	06	10	04	Read/ Write
Student B	02	07	07	07	Multimodal
Student C	14	08	10	09	Multimodal
Student D	08	05	03	05	Visual
Student E	05	10	03	03	Aural

Table 1. VARK results of the students

By identifying learning styles, I used teaching techniques and learning tasks that involve verbal-linguistic and visual-spatial intelligences. Figure 1 shows the way that I changed my teaching profile after identifying students' learning styles.

30								
25								
20								
15								
10								
5								
0								
Score ↑ Intelligence →	Bodily- kinesthetic	Inter personal	Intra personal ©	Verbal- linguistic	Logical mathematical ≥	Musical	Naturalists	Vis ual spat ial
								<i>G</i>

Figure 1. My MI Teaching Profile (a) before ■ (b) after □ knowing students' learning styles

Students have provided very positive feedback regarding the activities which I conducted in the class room to create an effective and supportive learning environment as shown in table 2.

I obtained feedback for the 'poster tour' by addressing the points: improve my critical thinking, get an opportunity to show my creativity, improve my presentation skill and improve my soft communication skill. Average rating given by the student for all the points was 4. It showed that they strongly agreed that 'poster tour' was a very good activity to improve their above mentioned skills.

Discussion And Conclusion

A good teacher should plan teaching programs and should design learning tasks that are supportive for all styles and should promote different learning styles among students. Therefore in this study I could involve students in my class in adapting different learning styles by implementing different learning tasks such as rounds, reflection, note taking, poster tours, writing most important points, etc. It created an enjoyable and effective environment in my lecture. Students did not see the course as a burden but they felt that learning is fun. Finally through this study I could get rid of the main problems I had encountered in my teaching. Strong positive feedback of the students towards the tasks they involved in the classroom which is shown in Table 2 is supportive evidence that I could create a effective and supportive learning environment for my class. All the learning tasks which have been mentioned in this study can be easily implemented for a small class but with some modifications those tasks can be applied in a large class also. However there is a folk belief as "Good teachers are born, not made". Therefore I believe that any teacher can create an effective and supportive learning environment by practicing many techniques which have been listed in literature but only if they have some qualities such as loving what they do and hard work.

Note Taking		Answering and gettin	<u>g mark</u>	Writing most important points		
Points addressed	Average Rating	Points addressed	Average Rating	Points addressed	Average Rating	
	<u>Ituting</u>		<u>Ituting</u>		<u>Ituting</u>	
an interesting task	4	a challenging task	2	motivated to think	4	
				back		
an opportunity to	4	an interesting task	3	helped to improve my	3	
summarize the lecture				understanding		
motivated me to think	4	motivated to go through	3	helped to summarize	4	
back on the lesson		the previous notes		the lesson		
helped when solving a	4	encouraged to express	4	helped to refresh my	4	
problem		my ideas to the class		memory		
"Help Sheet" helped	4	helped to remember	4	could identify my	4	
when solving a		most of the theories		mistakes through		
problem				lecturer's comments		
				on my writing		

_Table 2. Student feedback on Note Taking, 'answering and getting marks', 'writing most important points'

[scale: 1 = unsure /no option, 2 = disagree, 3 = agree, 4 = strongly agree]

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Bridging the Gap between the University Environment and the Context of Industrial Training: Enhancement of Functioning Knowledge by using Poster Exhibitions

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Introduction

In assessing functioning knowledge (FK) in particular, the assessment tasks need to represent the knowledge to be learned in a way that it connects and relates to real life. It is imperative to have some sort of 'performance of understanding' that reflects the kind of understanding that requires an active demonstration of the knowledge in question, as opposed to talking or writing about it. Torrance (1994) and Wiggins (1989) referred to this as 'authentic assessment'. Moss (1992) emphasized the term 'authentic' assessment may imply that all other forms of assessment are inauthentic, therefore many prefer the term 'performance assessment'. This is a reminder of what is already known in aligned teaching, that the assessment task should require students to do more than just tell us what they know - unless, of course, declarative knowledge is all that is required in this instance. Biggs and Tang (2007) reported that some teaching/learning activities could be used for facilitating FK in workplace learning, when focussed on Intended Learning Outcomes (ILOs) such as: integrate knowledge and skills learned in university to real-life professional settings, apply theories and skills to practice in all aspects of professional practice, work collaboratively with all parties in multidisciplinary workplace settings, practice with professional attitudes and social responsibilities in their respective professions. Biggs and Tang (2007) interpreted that because of the multifaceted nature of the different workplace learning situations, there can be no fixed format of assessment.

The National Diploma in Technology (NDT) course is a three year full time course comprising of two years academic study and one year of industrial training (IT). All the NDT Polymer Engineering Technology (PET) students generally enter the tyre industry for a period of six months and glove industries for another semester. During IT supervisions, the researcher has identified that students are facing numerous challenges in competing with the industrial demands due to poor functioning knowledge through facing interviews, carrying out the research project during the IT, addressing day to day industrial problems and attending IT progress reviews. PET students gain 50% theory knowledge about tyre technology from DPT 207 / Polymeric Materials subject. The learning pyramid developed in 1960s by National Training laboratories in Bethel, Maine shows that attending lectures, reading texts, audio visual and demonstration are passive learning methods whereas group discussions, learning by doing and students teaching each other are active learning methods. The learning pyramid further emphasizes that by participating in a traditional lecture the knowledge retention would only be 5% and by students teaching others the knowledge retention can be improved up to 90%. McKeachie (1998) expressed the most effective method of teaching is students teaching other students. McGowan and Knapper (2002) declared the following:

Learning in a passive system that has a much greater tendency to be both superficial and quickly forgotten. Active involvement in learning helps the student to develop the skills of self learning while at the same time contributing to a deeper, longer lasting knowledge of the theoretical material.....[and] ...it is almost the only effective way to develop professional skills and to realize the integration of material from different sources. (p.633)

Biggs and Tang (2007) concluded that most student centered teaching/ learning (SCL) methods for functioning knowledge make use of student-student interaction, both in the form of role play or of a variety of kinds of group work, which require students to apply their knowledge and to address functioning knowledge in general learning. Biggs and Tang (2007) further interpreted that poster presentations follow a real-life scenario: the conference format.

In this study, the researcher was mainly interested in exploring the impact of a poster exhibition project on the enhancement of FK in the Polymeric Materials subject to bridge the gap between the university environment and the IT context.

Methodology

For the study, a sample containing 24 PET students enrolled in their second year was considered. A poster exhibition was organized from the syllabus content of DPT 207 / Polymeric Materials subject. Four consecutive poster exhibitions have been conducted on 01st of October 2013, 25th of November 2014, 20th of October 2015 and 20th of September 2016. The first task was deciding a theme for the poster exhibition. After having a discussion with the students a theme for the poster exhibition was decided. The themes of the four consecutive exhibitions conducted were "Polymers", "Polymer Products", "Polymer Industries in Sri Lanka" and "Polymers in Automobiles". The 24 students were grouped into 12 groups of two students each. The assigned tasks for the students were: selecting topics for the posters related to the theme, preparing rough skeletons for the posters, creating posters, preparing invitation cards, inviting guests, practice the presentation, decorating the exhibition hall including the feedback box, inauguration activities including oil lamp ceremony and conducting the poster exhibition for the guests on the exhibition day - these made up a one month project. Year-end examination results of the DPT 207 subject were the first set of data to explore the impact of this SCL tool on the enhancement of the declarative knowledge. The second data set was from IT officers, where 12 IT officers (from 12 industries) gave their responses to a close-ended questionnaire after the completion of the IT period so as to investigate the enhancement of FK of the students.

Results

The researcher implemented the new change in 2013 after the inspiration through having followed the Certificate in Teaching in Higher Education course conducted by the University of Colombo (CTHE), while the researcher had started to teach the subject in 2011. About 80% of the final examination paper included problematic situations where students needed to apply relevant subject matter and practical aspects presented in the poster exhibition. According to the student results shown in Table 1, final grades of this DPT 207 subject improved after the implementation of the new technique, making evident the enhancement of the declarative knowledge of the DPT 207 subject.

V	A 1	D!-	<u> </u>	DI.
<u>y ear</u>	$\underline{\mathbf{A}}$	<u>B'S</u>	\underline{C}	$\underline{\mathbf{D}}$
<u>2011</u>	04	14	06	01
2012	07	10	01	01
2013	12	08	02	
<u>2014</u>	15	05	03	
2015	16	05	02	
2016	20	04	01	

Table 1. Final grades obtained for DPT 207 Polymeric Materials subject

The senior officers of the university gave feedback expressing the view that the poster exhibition project helped students to be thorough with the subject and recognised that involving students in such a poster exhibition was a very effective SCL technique (see Figure 1).

I can seleghted to withous the relation & palym poster enhibition what has been prefamp with great enthusiasm. The states were very than to entrein their products indenty that gain many competencies especially soft stills. There effek contanty infrom stands unerstandy, and mative times to learn solyint. Congraductions & all K. but 11. Congraductions & all K. but 11.

Figure 1. Vice Chancellor's feedback on the poster exhibition

The IT Officers responses are analysd and shown in Table 2. These results reveal the overall satisfaction of the IT officers regarding the performance of students throughout the IT period. This IT officers satisfaction is confirmed from students' oral feedback. During the researchers IT supervision, individual students commented happily that, at the interviews, they were able to answer confidently and properly the questions related to the subject matter. Students also said that they could utilise the improved FK to conduct research projects successfully. Further, the students responded that they could easily find out solutions for day to day industrial problems and that, with the help of enhanced FK, they were also able to answer the subject related matters correctly at the *vivas* and presentations when presenting the research findings to the top level management.

	Desci	intive Sta	tistics	Contribution Frequency and Percentage							
Application of	2000	-p			Satisfaction Scale (1 =Very Low: 5 = Very High)						
the Functioning Knowledge	Mean	Standard Deviation	Coefficient of Variance (%)	Very Low	Low	Moderate	High	Very High			
Performance in facing interviews	4.75	0.45	9.52	00	00	00	03 (25%)	09 (75%)			
Performance in research project related activities	4.67	0.67	13.36	00	00	01 (8.33%)	02 (16.67%)	09 (75%)			
Performance in solving day to day industrial problems	4.75	0.62	13.09	00	01 (8.33%)	01 (8.33%)	02 (16.67%)	08 (66.67%)			
Performance in progress reviews	4.92	0.29	5.87	00	00	00	01 (8.33%)	11 (91.67%)			

Table 2: Industrial training officers feedback: Descriptive statistics and frequencies (N =12)

Discussion and Conclusion

Biggs and Tang (2007) reported that there are two broad steps in educating students for professional decision making and the first is to build up the appropriate declarative knowledge base, and the second is to put that to work. This study proved the enhanced declarative knowledge is the solid foundation of a sound functioning knowledge. Gibbs and Habeshaw (1989) emphasized that the performance assessment is an extrinsic reward that has tremendous influence over what and how students learn. In the lecture room students studied the theory behind the tyre technology and they came to the "Knows" level of the "Miller's Pyramid for assessing clinical competence"(MP) which has been developed to measure the professional competency of students. By preparing rough skeletons for the posters by referring lecture notes, internet, text books and modifying those according to the given constructive feedback students could develop the FK and achieved to the "Know how" level of MP. On the exhibition day, students were able to demonstrate developed FK to the guests while performing the "Show how" level of the MP. During the industrial training the students had developed the potential to challenge themselves confidently and to demonstrate their professional competencies through the enhanced FK and in this way, accomplished the "Does" level of the MP. Poster exhibition is therefore an excellent pedagogical approach to bridge the gap between the university environment and the IT context by facilitating the enhancement of FK, facilitating students to develop as professional experts and in real-life professional scenarios.

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Clinical Competency among Graduate Nursing Students at Eastern University, Sri Lanka

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Introduction

The contemporary health professional education has greatly emphasized competency based education (Zieber*et al.*, 2014). Competencies are the indicators of successful performance in a particular situation, and also an intricate mixture of attributes such as; knowledge, skills and attitudes (Gonczi, 1994). Clinical competency is an essential outcome of the Bachelor of Science (BSc) in Nursing programme. The nurses' clinical competency plays a significant role in providing patients with safe care (Institute of Medicine, 2004).

Nurses' shortage is a global issue in health care world. New graduates are hired to solve this critical situation. The health care employers expect competent clinical skills from nursing graduates at the entry point to their jobs. Therefore, the nursing educational institutes are facing challenges to produce graduates with adequate clinical competency to meet the health care needs of the world.

Eastern University, Sri Lanka (EUSL) is one of the national higher education institutes providing nursing education in Sri Lanka. The BSc in Nursing programme commenced in 2008. At present, four batches have graduated from EUSL. However, the nursing students' clinical competencies have not been assessed immediately prior to their graduation. Thus, the study aimed to assess the level of clinical competency and its gender based differences among nursing students at EUSL.

Methodology

A descriptive cross-sectional study was conducted in the Faculty of Health-Care Sciences (FHCS), EUSL during academic year of 2017. Final year BSc. Nursing students (5th Batch) of EUSL were selected as study population. Non-probability sampling method was used to collect convenience samples from the study population.

A self-administered clinical competency questionnaire (CCQ) was used to collect data on competencies from students. Liou & Cheng (2013) developed and validated the CCQ to measure the perceived clinical competence of upcoming baccalaureate nursing graduates. The CCQ developed was based on Patricia Benner's "From Novice to Expert" model (Benner, 2001).

The CCQ consists of four subscales, namely: Nursing Professional Behaviors, General Performance, Core Nursing Skills and Advanced Nursing Skills. The CCQ inventory consists of 47 questions, each given a score of 5. The following is an approximate guide to interpret the score: 1-Do not have a clue, 2-Know in theory, but not confident at all in practice, 3-Know in theory, can perform some parts in practice independently, and needs supervision to be readily available, 4-Know in theory, competent in practice, need contactable sources of supervision, 5-Know in theory, competent in practice without supervision (Liou & Cheng, 2013).

All questionnaires were coded and entered into an electronic database. Data analysis was carried out using SPSS version 22. Descriptive statistics were computed to present distribution of study participants by student's demographical details. The t-test was used to compare students' clinical competency score between gender. The pilot study was conducted on eight students (out of the study population) two weeks before the commencement of the main research study. Ethical clearance was obtained from the Ethics Review Committee of FHCS, EUSL.

Results

There were 22 nursing (final year) students of FHCS, EUSL who participated in this study. There were 15 females in the study group. The students' mean age was 25.18. The overall CCQ score was 4.10 (Table 1). This indicates that, the BSc Nursing student clinical competency can be described as "known in theory, competent in practice, need contactable sources of supervision". The overall CCQ score was not statistically different by gender. The advanced and core nursing skills were statistically different among the two sexes. The male nursing students had higher confidence in advanced and core nursing skills than female nursing students (Table 1).

Clinical Competency Subscale	Mean CCQ Score		
	Female	Male	Overall
Nursing Professional Behaviors	3.62	4.19	3.95
General Performance	4.16	4.27	4.22
Core Nursing Skills	4.22	4.77	4.49*
Advanced Nursing Skills	3.37	4.17	3.77*
Overall	3.84	4.35	4.10

 Table 1. Nursing Students' self-evaluation of clinical competency and its subscales

The indicated items were * significant at p value

There was no significant association of clinical competency score with student's parameters such as gender, age, religion, residence and students' Advanced Level z scores (p>0.05). There were totally 12 CCQ statements significantly different by gender (Table-2).

Discussion and conclusion

The overall CCQ score was 4.10. It indicated that, the students perceived a positive level of confidence in their clinical competency. These results are similar to findings from a previous study conducted in Taiwan, in which graduate nursing students generally perceived themselves as competent (Liou & Cheng, 2013). Brown *et al.* (2003) stated that, the overrating may be given by some students in self-evaluation. Overall CCQ was high among male students. But it was not significantly different (p>0.05).

Core nursing skill has been assessed in the study. It included the nursing activities in drug administration and sterile procedures. The confidence level of male nursing students' in performing urinary catheter insertion and care, tracheotomy care, nasogastric tube feeding and care, wound dressing care, performing enema and administering parenteral medication are significantly higher than of female students' (Table-2). In our study, specific items in the advanced nursing skills' (ANS) subscales included skills in intravenous fluid administration, venipuncture, blood transfusion and chest tube care. The mean ANS score (3.77) is the lowest score among four subscales of CCQ (Table-1). A group of Taiwan nursing students also perceived the advanced nursing skill as their weakest technical skills (Liou & Cheng, 2013).

Statements of Clinical Competency		CCQ Mean (X)			
Statements of Clinical Competency	Female	Male	Overall		
Nursing Professional Behaviors					
Following health and safety precautions	4.07	4.29	4.18		
Taking appropriate measures to prevent or minimize risk of injury to self	4.33	4.29	4.31		
Taking appropriate measures to prevent or minimize risk of injury to patients	3.87	3.86	3.86		
Preventing patients from problem occurrence	3.33	4.29	3.81		
Adhering to the regulation of patients' and families' confidentiality	3.47	4.29	3.88		
Demonstrating cultural competence	3.13	4.00	3.57		
Adhering to ethical and legal standards of practice	3.07	3.86	3.46		
Maintaining appropriate appearance, attire, and conduct	3.80	4.14	3.97		
Understanding patient rights	3.73	5.00	4.37^{*}		
Recognizing and maximizing opportunity for learning	4.13	4.14	4.14		
Applying appropriate measures and resources to solve problems	3.20	4.00	3.60		
Applying or accepting constructive criticism	3.07	3.71	3.39		
Applying critical thinking to patient cares	3.33	3.71	3.52		
Communicating verbally with precise and appropriate terminology in a timely					
manner with patients and families	3.80	4.57	4.19		
Communicating verbally with precise and appropriate terminology in a timely					
manner with healthcare professionals	3.80	4.57	4.19		
I'm understanding and supporting group goals	3.73	4.29	4.01		
General Performance					
Taking a history for new admissions	4.60	4.57	4.59		
Performing and documenting patient health assessment	4.27	4.43	4.35		
Answering questions for patients or families	3.87	4.57	4.22		
Preventing patients from problem occurrence	3.60	4.29	3.94		
Educating patients or families with disease-related care knowledge	4.40	4.29	4.34		
Charting and documentation	4.00	4.00	4.00		
Developing care plan for patients	4.47	4.43	4.45		
Performing shift report	3.87	3.71	3.79		
Performing hygiene and daily care routines	4.27	4.29	4.28		
Assessing nutrition and fluid balance	4.07	4.14	4.10		
Assessing elimination	4.00	4.29	4.14		
Assisting activities and mobility, and changing position	4.27	4.43	4.35		
Providing emotional and psychosocial support	4.47	4.14	4.30^{*}		
Core Nursing Skills					
Changing intravenous fluid bottle or bag	4.67	5.00	4.83*		
Administering intravenous medications (or into intravenous bags)	4.47	5.00	4.73^{*}		
Administering intramuscular medications	4.73	5.00	4.87^{*}		
Performing subcutaneous injection	4.67	5.00	4.83^{*}		
Administering oral medications	4.87	5.00	4.93		
Performing urinary catheter insertion and care	3.60	4.86	4.23^{*}		
Performing sterile techniques	4.07	4.43	4.25		
Performing enema	3.13	4.14	3.64*		
Performing upper airway suction	3.87	4.43	4.15		
Performing tracheotomy care	3.47	4.43	3.95^{*}		
Performing nasogastric tube feeding and care	4.53	5.00	4.77^{*}		
Performing wound dressing care	4.60	5.00	4.80^{*}		
Advanced Nursing Skills					
Performing venepuncture	3.87	4.57	4.22*		
Starting intravenous injections	4.33	4.29	4.31		
Administering blood transfusion	3.13	4.29	3.71		
Performing postural drainage and percussion, and oxygen therapy	2.87	4.14	3.50		
Performing preoperation/post operation care	3.40	4.29	3.84		
Performing chest tube care with underwater seal management	2.60	3.43	3.01		

Table 2: Nursing Students'	self-evaluation of clinical co	mpetency at FHCS,	EUSL
-			

the items in italics were negative questions, * significant p value

Similarly, earlier studies found that new graduate nurses consider these same advanced skills as some of the most challenging procedures to perform in clinical practice (Fink *et al.*, 2008).

The male students' ANS score is higher than of female students (p<0.05). The male students perceived high confidence in performing venipuncture. The least CCQ score (3.01) among 47 items was received for performing chest tube care with underwater seal management.

Interestingly, the female nursing students' perceived high confidence in providing emotional and psychosocial support. Meantime, the male nursing students perceived high confidence in understanding patient rights.

The present study revealed that, the BSc. Nursing students in FHCS, EUSL had a positive level of confidence in their clinical competencies. However, the advanced nursing procedures is identified as the weakest area, which is needed further improvement. Meantime, the male nursing students perceived high competency in advanced & core nursing skills. The overall mean CCQ score was not statistically different with gender. In future, longitudinal research is needed in order to assess the nursing students' clinical competency by their mentors 'clinical instructors, colleague and supervisors.

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Simulation Based Medical Education in Medical Emergencies using different Models for Debriefing: A Pilot Study

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Introduction

With the advancement of research on medical education training doctors changed immensely being from more teacher centered learning to learner centered learning. One such improvement was development of simulation based medical education (SBME). There is substantial evidence to indicate the benefits of SBME in achieving improved learner outcomes without involved risks to the patients (Steadman *et al.*, 2006; Wayne *et al.*, 2006). In learning medicine, particularly procedures and emergencies, exposing students directly to patient care produces significant threat to patient safety. However, in Sri Lankan context, utilization of SBME, especially, scenario based sessions for medical emergencies is grossly inadequate.

In a critical review on SBME, 12 features and best practices of SBME that should be known by medical educators have been identified (McGaghie *et al.*, 2010). The first feature is feedback, commonly given through debriefing session which was considered the most important character related to SBME. In an article on role of debriefing in SBME, authors point out that there are fundamental issues to be clarified on debriefing in SBME including exact dose and model by further research (Fanning & Gaba, 2007), (McGaghie et al., 2010). It has been recognised as a potential area for further research.

With this background, it was realised that SBME needs to be incorporated soon into formal medical curriculum particularly scenarios for common medical emergencies. Due to lack of experience of such teaching in our setting, it was decided to study the student satisfaction and perception. We decided to test this with two different models where facilitator involvement in debriefing is graded at different levels because Sri Lankan medical education is still comparatively more teacher centered and there is no consensus on degree of facilitator involvement. Objectives of the study were to a) assess the student acceptance and satisfaction with scenario based sessions to teach management of cardiac emergencies, b) to compare two different methods of debriefing in relation to student satisfaction and retention of knowledge.

Methodology

Single blinded randomized controlled study was conducted at Faculty of Medicine, General Sir John KotelawalaDefence University (KDU) during December 2016. Approval was granted by the Ethics Review Committee, Faculty of Medicine, KDU. Fourth and third year medical students were enrolled in the study. Total number of students in the two given batches was 102. Consenting students from two batches were randomised into two groups separately, using simple randomisation technique.

Students of each group were further divided into subgroups of five. They were provided with objectives for the session. There were two scenarios on bradyarrythmias and tachyarrythmias starting with a stem giving initial presentation of the patient. Previously designed scenarios were run using high fidelity 'Sim-Man' with facilities for cardiac and lung auscultation and vital parameter assessment using cardiac monitor. Each subgroup had a 30 minute session. Soon after the session each group had debriefing session for 30 minutes at debriefing room using video play back technique.

Group A students had high level of involvement mediated by the facilitator. Facilitator conducted the session for the five students while giving the feedback to each individual student as well. Group B had debriefing with low level of involvement by the facilitator. Facilitator had to assist participants to move along the session and clarify any doubts. Following the debriefing a self administered questionnaire was filled by the students. A scenario based written exam with five small clinical cases was conducted one month after the sessions. Answer scripts were marked by the examiners who were blind to the group of students. All data was entered into a data base in Statistical package for Social Sciences (SPSS) 20 software for Windows. Significance was calculated using Chi-square test and independent sample t-test as appropriate.

Results

Sixty four consenting students participated and 42 (65.6%) were third year students and 22 (34.4%) out of 64 were female students. Satisfaction of the students with different aspects of SBME is summarized in Table 1 in percentages. Most of the aspects show very high satisfaction rates. Between group 'A' and 'B' none of the aspects showed any statistically significant difference (P>0.05).

	Highly	Satisfi	Neutral	Not	Not	No
Aspect	satisfied	ed		satisfie	satisfied	comm
				d	at all	ents
Timing of the debriefing session	35.9	62.5	1.6	0	0	0
Opportunity for the students to prepare	17.2	42.2	34.4	6.3	0	0
Opportunity for the students to receive	37.5	59.4	1.6	0	0	1.6
feedback						
Opportunity for the students to provide	32.8	50	10.9	1.6	1.6	3.2
feedback to the colleagues						
Guidance for the structure of the debriefing	59.4	39.1	1.6	0	0	0
session by the facilitator						
Input of the facilitator with relevance to subject	54.7	42.2	3.1	0	0	0
matter						
Environment of the debriefing session	42.2	54.7	3.1	0	0	0
Opportunity to improve the knowledge on the	67.2	25	7.8	0	0	0
given subject						
Opportunity to develop confidence on	57.8	37.5	4.7	0	0	0
managing a similar scenario						
Time-effectiveness of the session	35.9	50	14.1	0	0	0
Overall experience on the debriefing session	59.4	39.1	1.6	0	0	0

Table 1.Student satisfaction on different aspects of simulation based medical education sessions (as percentages)

Summary of student perceptions on different aspects of SBME is given in Table 2.

	Aspect	Strongly	Agree	Neutral	Disagree	Strongly	No
		agree				disagree	comments
1	Importance of simulation during	78.1	21.9	0	0	0	0
	learning						
2	Selected case scenarios are important	79.7	20.3	0	0	0	0
	during clinical practice						
3	Case scenarios are well organized	57.8	34.4	6.3	0	0	1.6
4	Sessions are useful and relevant with	68.8	31.3	0	0	0	0
	the curriculum						
5	These sessions are useful to improve to	82.8	17.2	0	0	0	0
	practical knowledge during learning						

Table 2. Student perceptions on different aspects of simulation based medical education sessions (as percentages)

None of the aspects showed significant difference between two groups (P>0.05).Debriefing session was considered useful by 100% students. Majority (92.2%) preferred to have it soon after the scenario. Seventy five percent of students believed that facilitator should be involved more during the debriefing session whereas 89.1% of the students also believed that student involvement should be more during debriefing session. Students were provided with space for their comments without any leading questions where 32.8% students particularly requested to arrange more sessions for their routine clinical teaching. Post test marks were given out of total 500. Score was 177.95 (SD=64.49) and 201.87 (SD=69.86) with no significant difference (p=0.235) between two groups with high and low facilitator involvement.

Discussion and conclusion

This is the first reported study in Sri Lanka based on student satisfaction and perception on SBME. Studies have shown that Sri Lankan medical students have more auditory learning compared to kinesthetic learning style (Samarakoon, Fernando, Rodrigo, & Rajapakse, 2013). As a result, there is generally a negative attitude among teachers regarding the active participation of students in student centered teaching activities. Our study showed that SBME sessions were well accepted by students with higher levels of satisfaction on self reporting. Systematic reviews have revealed very high student satisfaction rates comparable with our results (Laschinger et al., 2008). Students were especially satisfied with the opportunity to improve their knowledge and confidence in practical skills as well as guidance by facilitator during the session. There were concerns about opportunity for preparation since students were not given information about scenarios in detail beforehand. Another aspect of concern was need of opportunity for the students to provide feedback to the colleagues. This indicates that students felt the communication was bidirectional where students communicated with facilitator instead of freely interacting with each other.

In our study, one objective was to give special attention to debriefing session and compare two different models. All the students replied that debriefing session was useful. Results of the current study could not specifically reveal a predilection to one out of two models of debriefing in relation to student satisfaction or retention of knowledge. This would probably be due to variation of learning style, preferences among different students and limitations in the study.

Majority of the students preferred to have higher involvement by both facilitator and students during the debriefing session. This probably reflects the fact that students expect more in-depth feedback or knowledge transfer by the facilitator at the same time appreciating the fact that they have to have more active involvement during debriefing.

Limitations of our study include small sample size and poor correlation of assessment method with outcomes of the teaching activity. Overall, the marks were not satisfactory in post-test. However, it has to be interpreted with care because the questions were made at a higher standard, students did not make special preparation for the exam and this test is more theoretical. Due to logistical constraints and need of objective assessment a scenario based written test was developed.

To further characterise the best model in SBME for Sri Lankan medical student population larger studies would be necessary. The most appropriate action at the moment however, would be to initiate formal SBME sessions considering higher rate of student satisfaction and acceptance. Students should be given opportunity for adequate preparation, allowed to interact well with their facilitator and colleagues throughout the session.

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Exploring the Practices at a Private University and a Private Teaching Hospital: Scholarly Teaching and Scholarship of Teaching and Learning

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Introduction

The scholarship of teaching and learning (SoTL) has been popularized by Boyer nearly two decades ago. While scholarship of teaching can be described as the commitment to understand the teaching and learning process by using creativity to develop materials, and evaluate teaching and learning systematically using research, the scholarly teaching is more focused on effective teaching based on reflection (Allen & Field, 2005). Due to different assumptions and practices by higher educationists the controversies between SoTL and scholarly teaching still continues today. However the most important fact is that many of the higher educationists who are engaged in educational development consider that both SoTL and scholarly teaching collectively lead to better teaching and learning in higher education (Boyer, 1990; Potter, 2011).

Practices of SoTL and scholarly teaching can build an avenue to share academics experience on higher education which will enhance the quality of teaching. According to the literature there is a statistical correlation between staff who win teaching learning awards and students stating that they had good teaching and learning experiences (Brew, 2012). This study was carried out to investigate the activities undertaken by the academics and clinicians of South Asian Institute of Technology and Medicine (SAITM) and Neville Fernando Teaching Hospital (NFTH) in the context of the higher education academy that fall under the category of scholarly teaching and SoTL. The study was also conducted to create an avenue to expose the participants to recognize excellence and challenges of scholarly teaching and SoTL thereby motivate them to engage in scholarly teaching and SoTL in future which would lead to establish better learning experiences among students.

Methodology

A self administered questionnaire was prepared to collect data. The initial part of the questionnaire contained the general definitions and examples of the activities that comprise scholarly teaching and SoTL, which could be used as resource for the teachers who are participating in the study. The second part contained the questions that were relevant to identify the activities that academics and clinicians engage in, which fall under the category of scholarly teaching and SoTL. The last two questions were included to get feedback from the participants on whether the study motivates them to reflect and practice scholarly teaching and SoTL activities. The questionnaire was prepared utilizing available literature on scholarly teaching and SoTL (Boyer, 1990; Potter, 2011; Allen & Field, 2005; McKinney,

2003). Study population was the academics and clinicians of SAITM and NFTH. Convenience sampling was used when distributing questionnaires. Completed questionnaires were collected after about a week. Ethical clearance was obtained from the Ethical Review Committee of the Faculty of Medicine, SAITM.

Results

Of 124 academics and clinicians in SAITM and NFTH, 49 (19 lecturers, 19 senior lecturers, 5 professors and 6 consultants) responded to the questionnaire. This was about 39.5% of the total targeted group.

All respondents had stated that they were engaged in the activities considered as scholarly teaching activities (100%) however relatively less proportion (41%) was engaged in SoTL. The proportion of people engaged in SoTL activities in different categories were as 3/5 Professors, 10/19 senior lecturers, 5/19 lecturers and 2/6 consultants.

Majority of the academics who responded were engaged in scholarly teaching activities; they discussed their findings on teaching with others (100%), they obtained student evaluation on their teaching (94%) and have tried new techniques of teaching and learning (92%). Classroom and program evaluation (88%), reflecting on their teaching (78%) and getting peer evaluations (75%) were the other scholarly teaching activities that the participants engaged in (Table1).Of those (78%) who engaged in reflective practice, 97% agreed that their teaching had been influenced by reflective practices.

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Scholarly teaching activity	Number of participants	Percentage of				
Involved in	(Total=49)	participants %				
Discussed the findings on teaching with others	49	100				
Obtained student evaluation	46	94				
Tried new techniques of teaching and learning	45	92				
Classroom and program evaluation	43	88				
Reflected on teaching	38	78				
Obtained peer evaluations	37	75				

Table 1. Number and percentage of academics and clinicians who engaged in scholarly teaching activities

Of the participants who were engaged in SoTL activities (41%), many stated that about 50% of their academic work comprised of SoTL activities (55%). About 15% stated that the SoTL activities comprised of 75% of the academic work. While15% stated that it was 25%, another 15% stated that it was below 25% (Table 2). Further 69% of the participants agreed that the SoTL activities that they were engaged in, had increased overtime since they started their academic work.

Of the academics and clinicians (41%) who were engaged in designing and conducting research in teaching and learning, only 35% had published their findings. Conversations with colleagues in the department or in the institution were the common method (90%) of dissemination of knowledge on SoTL among these participants. 35% disseminated their findings as presentations within the institute, 40% have presented their findings at conferences in higher education. While 10% had published their findings in non-peer-reviewed publications, 22% had published as peer reviewed publications.

engaged in SOTE activities as different proportions of their academic work						
Proportion of SoTL work	Number of	Percentage of				
comprised in academic work (%)	Participants (Total=20)	participants %				
<25	10	50				
25	3	15				
50	3	15				
75	3	15				
>75						
Non responders	1	5				

Table 2. Number and percentage of the academics and clinicians who are engaged in SoTL activities as different proportions of their academic work

Of the academics who engaged in SoTL activities, 33% frequently used literature on higher education. Of them, 56% were occasional users and 11% were referred literature rarely. In the group that did not practice SoTL activities, 17% of them were frequent users of literature, 45% were occasional users and 31% were rare users. In this group there were academics who had never (7%) referred any literature on higher education.

Table 3. Number and percentage of academics and clinicians who are engaged in different methods of dissemination of knowledge in SoTL activities

Method of dissemination of knowledge on	Number Of	Percentage of
SoTL	Participants	participants %
	Total=20	
Conversations with colleagues in the department	18	90
or in the institution		
Presentations within the institute	7	35
Presentations at conferences in higher education	8	40
Non-peer-reviewed publications	2	10
Peer reviewed publications	7	35

Majority (92%) of the total participants planned to engage in SoTL activities in the near future. This included 34% of academics that were currently involved in SoTL activities and 58% of academics who did not engage in SoTL .The major constraints to engage in SoTL activities was difficulty in balancing SoTL work with other obligations and responsibilities (66%). Some (41%) said that contributions in SoTL are not recognized nor considered for promotion and 31% said that some departments do not recognize nor value SoTL as a legitimate form of scholarship. Lack of time (38%) and lack of knowledge on SoTL (36%) were the other challenges that were stated by the participants.

While 88% agreed that the questionnaire help them to reflect on their practices in scholarly teaching and SoTL, 84% said that the study motivated them to engage in scholarly teaching and SoTL in future.

Discussion and Conclusion

Most academics in SAITM and NFTH who participated in the study, practice scholarly teaching like reflective practice as a way to enhance their teaching. However relatively less number of the faculty engage in the Scholarship of Teaching and Learning (SoTL) and its systematic inquiry into how to maximize student learning through effective teaching. For many academics, disseminating results of their education research and classroom practice were limited to sharing these with their colleagues in informal ways. This may be due to the limited opportunities available to present or publish in higher educational conferences and journals within the country.

Lack of knowledge on SoTL, balancing the work in SoTL with other obligations and responsibilities and lack of time were the other factors that were found as challenges for SoTL. Conducting workshops and training sessions on SoTL where academics can gain knowledge on conducting higher education research and utilizing time spent on teaching and learning to do research would reduce these issues to some extent. The Medical Education Unit of SAITM had conducted such a workshop in 2012 for medical academics. Perhaps, conducting a similar work shop in the near future may promote SoTL to new academics as well as refresh the memory of the previous participants. Many had stated lack of recognition and reward for higher education research was one constraint for SoTL. When developing new guidelines for promotion and tenure it would be appropriate to include achievements in higher education research.

One important objective of this study was to create awareness and expose the participants to recognize excellence and challenges of scholarly teaching and SoTL. Since the majority of the participants agreed that the study helped them to reflect on their practices in scholarly teaching and SoTL and motivated them to engage in these activities, the study was successful in achieving these objectives to a certain extent. Perhaps the majority of academics who are not engaged in SoTL currently, acknowledging that they will be engage in SoTL activities in future are an achievement.

Of the total group of academics and clinicians in SAITM and NFTH only 39.5% participated in the study which is relatively a low number. One reason for this was the non availability of the academics and clinicians when distributing and collecting questionnaires as the study conducted in a short period of time. Another reason may be their lack of enthusiasm in participating in such study. If a same type of study could be done for an extended time period after conducting a workshop on SoTL, participation could be improved, that would give a good representation of total academics and clinicians of SAITM and NFTH.

A limitation of the study was that we were not able to correlate the responses of the participants with their discipline, professional status and previous participation in SoTL workshop. The section of the questionnaire relating to the above was removed, since it was suggested during ethical review, that this information would compromise the anonymity of the respondents and the reliability of their responses.

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Professing Professionalism in the Preclinical Years: Perceptions of Physiology Teachers in Sri Lankan Medical Schools

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Introduction

Professionalism is a core competency in medical education (Stephenson, A., Higgs, R., &Sugarman, J 2001). The Association of American Medical Colleges, General Medical Council, UK and World Health Organization advocate including it in core curricula of medical schools and early exposure of medical students to professionalism. Medical schools introduce inputs of professionalism to their graduates from preclinical years onwards (Goldie *et al*, 2007; Oelschlager, Chang, & Wenrich, 2009). Swick *et al* 1999 note that in order to promote professional development, explicit learning experiences need to be provided to the students. Goldie *et al* 2007 and Baernstein *et al* 2009 are among those who studied students' perceptions on this aspect. Studies on teacher perceptions and experiences in teaching professionalism are scarce, particularly so, in this region of the world.

This study evaluated the perceptions of preclinical teachers on the delivery aspects of professionalism to first-year students, undertaken as an attempt to fill the void of such data in our setting. Teaching/learning activities in physiology were chosen since it is believed that students experience aspects of patient- contact for the first time during physiology teaching, mainly during practical sessions. Other aspects of professionalism such as leadership and communication skills are likely to be introduced during small group activities. These aspects are not formally and methodically delivered to the preclinical students during the course, leading to uneven utilization of opportunities or even loss of opportunity to introduce and strengthen professionalism early. The objectives were to assess the perceptions of the academics on teaching professionalism within the existing physiology curriculum and to identify obstacles and opportunities to deliver such inputs.

Methodology

A descriptive study was conducted among physiology lecturers in state medical faculties in Sri Lanka. Ethical clearance was obtained from the Ethics Review Committee of Faculty of Medicine, University of Colombo. A self-administered questionnaire based on questionnaires used in similar studies like Roberts *et al* 2004 was used to gather data on selected demographics, perceptions, practices and inputs on professionalism during the physiology course, and opportunities and obstacles to introduce it in the first year.

Perceptions were assessed using a Likert scale of 5; 1=strongly disagree to 5 =strongly agree. four statements assessed perceptions. Strongly agree and somewhat agree collectively were considered as agreeing to the statement while somewhat disagree and strongly disagree statements collectively were considered as disagreeing. Frequency of current inputs on professionalism were assessed using a Likert scale of 5; 1=Never to 5= Always. 13 statements were listed to assess current practices/inputs. Open- ended questions were used to obtain views on opportunities to teach professionalism and the obstacles faced. Frequency for each response in the Likert scale and mean score of each response was calculated. Responses for the open- ended questions were coded in to groups and analysed.

Results

41 physiology lecturers in 7 state medical faculties were approached through hand- delivered questionnaires and email. 23academics from 6 universities responded. Response rate was 56.09%. 52.2% (n=12) were female. Mean age of respondents was 44.83 \pm 1.93 years. Best response rate was from University of Kelaniya with 21.7% (n=5) responding. 17.4% (n=4) responded from Universities of Colombo and Peradeniya and Ruhuna while 13% (n=3) responded from Universities of Sri Jayawardanepura and Jaffna. There were no responses from the Eastern and Rajarata universities. Mean duration of employment of lecturers was 14.35 \pm 1.92 years. Although all physiology lecturers in all medical faculties in Sri Lanka were approached, most responses were from senior academics, possibly reflecting a higher level of interest in the topic compared to the junior academics.

	Mean	Percentages						
Statement	Score	Strongly	Somewhat	Undecided	Somewhat	Strongly		
		agree	agree	Ondeended	disagree	disagree		
Professionalism can be	4.43	43.4%	56.5%					
taught and learnt	(SD=0.5)	(n=10)	(n=13)	0	0	0		
Learning								
professionalism								
produces a better	4.60	65.2%	30.4%	4.3%				
doctor	(SD=0.58)	(n=15)	(n=7)	(n=1)	0	0		
Introducing students to								
professionalism in the	3.91	34.8%	30.4%	26.1%	8.7%			
first year is effective	(SD=0.99)	(n=8)	(n=7)	(n=6)	(n=2)	0		
Professionalism should								
be a criterion for								
selection at entry to	2.86	4.3%	26.1%	30.4%	30.4%			
university	(SD=1.05)	(n=1)	(n=6)	(n=7)	(n=7)	8.7%(n=2)		

Table 1. Perceptions about professionalism among physiology lecturers

All lecturers accepted that professionalism can be taught and learnt with a mean score of 4.43 and 100% agreeing with the statement.

They agreed that learning professionalism produces better doctors with the highest mean score of $4.6(SD\ 0.58)$ with $65.2\%\ (n=15)$ strongly agreeing while $30.4\%\ (n=7)$ somewhat agreeing.

However, opinion on introducing professionalism to the first-year curriculum was divided with a mean score of 3.91 (SD 0.99), with only 65.2% (n=15) agreeing to doing so, while 26.1% (n=6) were undecided and 8.7% (n=2) somewhat disagreeing. Even though these 8 academics were undecided or somewhat disagreed about introducing professionalism in the first year, all of them agreed that professionalism can be taught and learnt.

Most lecturers were not of the opinion that professionalism should be a criterion for selection to medical school, with 39.1%(n=9) disagreeing with it while 30.4%(n=7) were undecided. Only 30.4%(n=7) agreed with the statement. Among those who were undecided on introducing professionalism as a criterion for admission to medical faculties, 42.9%(n=3) strongly agreed that professionalism can be taught and learnt while the rest 57.1%(n=4) somewhat agreed with the statement. Moreover, 71.4% (n=5) of them strongly agreed that learning professionalism produces a better doctor.
	Mean	Percentages				
	Score	Always	Most of the time	Sometimes	Rarely	Never
Introducing aspects of	4.83	82.6%	17.4%			
informed consent	(SD=0.39)	(n=19)	(n=4)	0	0	0
Encouraging students to	4.74	82.6%	8.7%			
respect privacy of patients	(SD=0.62)	(n=19)	(n=2)	8.7% (n=2)	0	
Encouraging students to						
respect other students,						
academic and support	4.65	69.6%	26.1%			
staff	(SD=0.57)	(n=16)	(n=6)	4.3% (n=1)	0	0
Emphasizing punctuality	4.61	65.2%	30.4%			
for teaching activities	(SD=0.58)	(n=15)	(n=7)	4.3% n=1)	0	0
Emphasizing punctuality	4.57	65.2%	26.1%			
in assignment deadlines	(SD=0.66)	(n=15)	(n=6)	8.7% (n=2)	0	0
Adhering to institutional						
procedure when						
rescheduling a teaching	4.55	52.2%	43.5%			
activity	(SD=0.51)	(n=12)	(n=10)	0	0	0
Introducing bedside						
manners (Eg: greeting,						
introducing yourself,						
approaching patients from	4.48	73.9%	8.7%		4.3%	
right hand side)	(SD=1.04)	(n=17)	(n=2)	13% (n=3)	(n=1)	0
Introducing aspects						
trustworthiness (Eg.						
inform correct details	4.39	56.5%	26.1%	17.4%		
about the procedure)	(SD=0.78)	(n=13)	(n=6)	(n=4)	0	0
Requesting valid excuses						
for absenteeism and late	4.13	56.5%	17.4%		8.7%	4.3%
attendance	(SD=1.22)	(n=13)	(n=4)	13%(n=3)	(n=2)	(n=1)
Encouraging students to						
follow a dress code when						
attending teaching	3.87	39.1%	30.4%		13%	4.3%
activities	(SD=1.22)	(n=9)	(n=7)	13%(n=3)	(n=3)	(n=1)
Encouraging students on						
a code of behaviour when						
participating in	3.61	17.4%	43.5%		17.4%	
extracurricular activities	(SD=0.99)	(n=4)	(n=10)	21.7%(n=5)	(n=4)	0

Table 2. Current practices of teaching Professionalism in Physiology Curriculum

Obtaining informed consent to examine during practical sessions was the most frequently delivered aspect in professionalism with a mean score of 4.83(SD=0.39), and 82.6%(n=19) practicing it 'always'. It was followed by respecting privacy during examination, respecting the fellow students and academic staff and ensuring punctuality.

Only 26.1%(n=6) were always comfortable in explaining the concept of professionalism to students, while 56.5%(n=13) were comfortable most of the time, 13%(n=3) sometimes and 4.3%(n=1) rarely. Only 21.7%(n=5) always introduced aspects on professionalism consciously to first year students when 47.8%(n=11) most of the time, 26.1%(n=6) sometimes, 4.3%(n=1) rarely introduced it consciously.

Practical sessions were considered the best opportunity to teach professionalism by 56.5% (n=13) lecturers. Other opportunities in the present curriculum to teach professionalism

respectively were small group discussions (SGD)43.5%(n=10) , lectures 26.1%(n=6), tutorials 21.7%(n=5) and problem based learning (PBL)sessions 8.7%(n=2).

Negative examples set by teachers was the commonest obstacle for introducing professionalism to the students as stated by 30.4% (n=7) participants. Other perceived obstacles were not having a defined curriculum on professionalism (17.4%, n=4), lack of time in the curriculum (13%, n=3), sociocultural background of the students (13%, n=3), negative influences from student peers (8.7, n=2) and senior students (4.3%, n=1).

Discussion and Conclusions

In this pioneer descriptive study, we explored how physiology teachers perceived introducing aspects of professionalism during the preclinical years. All participants held the opinion that professionalism can be taught and learnt, a finding consistent with a previous North American study by Shapiro, Morrison, & Boker 2004. Our academics agreed that learning professionalism helps in producing better doctors. Opinion was divided among the participants about introducing professionalism formally during the first year physiology curriculum, with the majority in favour of it while a significant proportion being undecided and a few disagreeing. While aspects of professionalism are introduced to local medical students from early years, it frequently occurs as a separate activity, for example in Colombo, through the behavioural sciences stream that runs parallel to basic, applied and clinical sciences streams. Hence it is possible that both students and teachers perceive professionalism as an external construct that has to be taught and learnt separately, whereas in many developed countries, professionalism has been integrated into the main curricula as early as 1990s (Goldie, et al 2007 and Baernstein et al 2009). Most participants disagreed that professionalism must be an entry criterion for medicine. It is noteworthy however, as per the selection tests for medicine in developed countries like United Kingdom; UKCAT, professionalism is an integral component assessed when choosing candidates to study medicine. The reason why local academics disagree for it to be a selection criterion to medical school could be the difficulties in measuring professionalism reliably, at university entrance examinations.

Practicals were considered the best opportunity to introduce professionalism, followed by SGDs, lectures, tutorials and PBLs in that order. In physiology curricula of all medical schools in Sri Lanka, practical sessions demonstrate the link between basic physiology and its applications, by introducing physical examination skills and basic investigational procedures to preclinical undergraduates. Roberts *et al* 2004 observed that the teaching activities involving clinical training were the best method to teach professionalism.

It was encouraging to observe that aspects on informed consent, privacy, respect and proper code of conduct are already being consciously introduced to preclinical undergraduates and majority of academics are comfortable in explaining professionalism to students. However, it is clear that there is potential for improvement to introducing professionalism during the early years.

Roberts *et al* 2004 observed that examples set by role models have a significant impact on teaching professionalism, and in our study too, teachers identified that negative examples set by academics as the greatest obstacle to introducing professionalism. Undefined curriculum for professionalism, lack of time during the course, socioeconomic background of undergraduates, and negative influences of peers were the other obstacles identified. The preclinical curricula on professionalism have to be designed to overcome these obstacles.

As this is a pioneer study of this nature in Sri Lankan medical schools, several important findings on perception of the preclinical lecturers on introducing professionalism in early years were gathered including potential opportunities, inputs on the subject that can be introduced in the first year and obstacles to teach professionalism. However, due to suboptimal response rates, sample size was not adequate to assess the difference of perceptions according to gender, teaching experience, and the place of employment, to assess if these factors may have an impact on perceptions in professionalism.

We recommend comprehensive studies including all preclinical disciplines in all medical faculties in the country to fill the gaps of knowledge in this area and to provide more meaningful conclusions to recommend ways to strengthen delivery of aspects of professionalism from early years. To overcome common obstacles in teaching professionalism, training programs for academics on professionalism and a general consensus among the academics on the professional behaviour may be helpful. Clearly defining areas of professionalism that can be emphasized during routine physiology teaching activities such as practicals and small group activities, and identifying explicit learning experiences will help teachers in introducing professionalism to students in early years, sans the additional burden of having separate and theoretical teaching activities to teach this core requirement, thereby integrating professionalism into routine teaching activities.

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My conference schedule - plan;

Time	Room (1 or 2)	Title	Author(s)	Page #s				
11.00 - 11.20 am								
11.20 – 11.40 am								
11.40 - 12.00								
12.00 – 12.20 pm								
12.30 – 1.30 pm	AGM, Lunch & time-management plans							
	While having lunch, I will 'do':							
	Over any spare time, I will 'do':							
1.45 – 2.05pm								
2.05 –2.25 pm								
2.25 – 2.45 pm								
2.45 – 3.05 pm								
3.05 – 3.30 pm	Feedback form Tea – Conference ends							

NOTES: