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Use of Learning Logs in Academic Diaries to Monitor Development of Higher-Order Learning Skills in Postgraduate Students

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Learning logs were introduced into the Forensic Medicine postgraduate Diploma programme to enable students to reflect on, and progress towards higher levels in their learning. Seventy eight (78) and 48 learning logs, written as academic diaries, of a 1st year and 2nd year student, respectively, were evaluated to assess learning levels and progression. Entries were scored on a) levels of learning, b) whether learning was in a knowledge, skill or attitude component and c) whether the learning had progressed to become self-directed, from having been peer-directed or trainer-directed.

In the first-year student, 43.5% of the entries were at a 'know' level, and 23.5% of entries were at an 'apply' level. The trainee exhibited learning in knowledge (53.8%) and skills (46.1%). Learning was predominantly self-directed (70.5%) with lesser, but nearly equal, inputs from peers (15.3%) and tutors (14.1%). In the second-year student 25% of logged learning was at an 'appraise' level, and 22.9% was at an 'apply' level. The predominant learning had shifted to skill development (75%). A component not seen in the 1st year was that of development in attitudes (2.1%). Self-directed learning was even more evident (89.6%), in comparison to inputs from tutors (6.3%) and peers (2%).

The first year logs reflect that of a new student in the training programme, with reliance on colleagues to help develop the knowledge and skill base required to function effectively at work. The second year logs reflect progression to self-directed learning, having developed to both 'apply' and 'appraise' learning levels.

Making students appraise their own learning assists students to develop higher-order learning skills. Encouraging life-long reflection at work, even after training, would be the next challenge.

Training Lecturers to use Small Group Teaching to facilitate a Range of Skill Development in Students through a Learning Agreement Tool

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The expansion of higher education and the changing patterns of employment are exerting greater pressure on university teachers to mould students to possess skills they lacked at entry. Staff Development Centres (SDC) that train university staff, such as the SDC at the University of Colombo, are similarly under mounting pressure to find effective ways and tools by which lecturers can be trained to use teaching methods to develop transferable skills in students, through their discipline-centred teaching.

In training lecturers in the Small Group Teaching (SGT) method at the 2007 SDC-delivered lecturer-training course, we analyzed 67 Learning Agreements/Contracts of 30 lectures who passed with the UK-SEDA accreditation. These Learning Agreements, which were designed with peer and tutor moderation, were used to identify the range of specific and generic skills that lecturers from 8 universities, teaching in 18 disciplines, conceptualised and identified as being necessary, and able, to develop in their students using the SGT method.

These lecturers identified that they could develop 19 specific skills, and 11 generic skills, in their students through SGT. Of the specific skills that lecturers identified as SGT-mediated skills outcomes, 21% identified Group-Working skill, and 10% identified Communication Skill. Skills such as 'Theory to Practice' Skill, Language Skill, Planning Skill were identified by 6 to 9%. Specific task-dependent skill development using the 'changing tasks' technique, in SGT, was reported for developing Presentation skills (by 16%) and for IT/internet skills (by 1.5%). Among generic skills developed through SGT by trainee-lecturers, 40% targeted development of 'Active Learning', 10% targeted 'self-confidence', whereas few (1.5%) targeted skills such as Leadership and Divergent Thinking.

The significance of using tutor-moderated Learning Agreements/Contracts for training lecturers to use specific teaching methods for developing a student-skills range will be discussed, specially in reflectively designing Learning Outcomes and relevant Learning Activities for student skill development.

**Enhancing Independent Student Learning Skills by Teacher-Guided Use
of Multiple Resources of Information in Law Students**

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The regrettable dependency on rote-learning and regurgitation of lecture notes at examinations is lamented upon, though assessment or/and learning activities have not been modified much to minimise rote-learning dependency. In the belief that university teachers should change the rote-learning habit, particularly in rapidly-growing subject areas such as environmental law and policy, we explored the use of continual teacher-guided use of multiple resources of information to facilitate a change towards independent student learning. The multiple resources that were used to overcome student resistance to change were a permanent class notice board that was set-up, and frequent discussion and presentation of additional material in class. Assignments that were assessed were designed to require outputs showing access to multiple resources, including the internet.

To test whether the above-described teaching method had any impact on students' independent use of resources for the study of environmental law, a survey was carried out (n = 60). 60% of Sinhala (n=54) and English (n=6) medium students answered the questionnaire.

While 18% of respondents in the Sinhala medium felt that a complete lecture note was sufficient for examination purposes, 0% of English medium students felt this to be the case. 75% (Sinhala medium) said they benefited from additional material (English 100%). 6 % thought it was not important to access other resources (English 0%). However 81% of the Sinhala medium and 70% of English medium said that the lecturer's guidance had caused them to increase their use of additional resources.

Although the finding has to be validated through further work of this nature, it indicates that teacher-guided use of multiple resources increases student use of such resources. We propose that this method could be gainfully used and tested in other subject areas, and that the examination process must factor in these changes, so that there is an incentive to change.

Using Guided Reflective Practice to develop the Skill of Independent Decision-Making in First Year Undergraduates in Law

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This paper is a reflection of an attempt made to develop independent decision making skills in first year undergraduates in law.

The first assignment in continuous assessment, in Legal Method for the Year I of the LL.B. degree 2007/08, required undergraduates to select a statute by themselves. In the *Sinhala* medium which consists of 161 students, no more than five undergraduates could select the same statute. At registration of their selection, over 90% of the undergraduates had made their selection in groups ranging from two to five.

A study was undertaken to inquire as to the reason for making these selections in groups. In the evaluation that was conducted the main reasons given were convenience, ability to share research material and the peer-support when working in groups. 61% felt that selection of a statute in groups was advantageous. Only 31% felt that independent selection of statutes was advantageous. 6% thought that there were advantages and disadvantages in selecting statutes in groups.

Subsequent to a discussion in class as to the value of developing the skill of independent decision making for a law undergraduate, an opportunity was given to the undergraduates to select a suitable legal article for discussion classes. 48% of undergraduates selected articles in groups, while the rest i.e. 52% had made independent selections. There was an increase in independent decision making from the earlier recorded 10%.

The lesson that can be learnt from this study is that the majority of undergraduates require guidance and training in developing their skills in decision making. This skill is considered to be essential in a professional. Therefore university education should provide undergraduates with the opportunity for developing this skill.

It can be advanced that a teacher in higher education can assist undergraduates to develop this skill through guided reflective practice. The cycle of “identify, plan, undertake and review” can be used as a model for developing best practices in this area, as was done in this example.

**In-class Tutorials and Group Work– A methodology
to Develop Application abilities**

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A child walks by self-discovery or/and facilitated -discovery, because the act of walking is unknown to the child until explored, as with student learning. We used tutorials and group work to enhance student learning ability, as reported here, in the compulsory Logic Programming course, which students consider as a difficult course. Though students grasped the theory well in this course, they mostly (70%) found it very difficult to transfer theory to applications, as shown in students failing to perform well (i.e., only around 30% of students were able to score more than 75% marks from assignments), when applications was made the basis of assessments,. Since teaching methods thus far tended to make students remain only in the *know and understand* levels of learning (sensu *Bloom's Taxonomy*), we introduced in-class tutorials in parallel with existing lab sessions, to get students to reach higher learning levels,.

For each lecture session, an in-class tutorial was designed to meet lecture outcomes. Once a theory and a suitable application was taught in class, additional applications were done in the tutorial. Randomly selected students were then called to the board to answer the questions of the tutorials. This improved the ability of students to work out applications and 70% of students were able to score around 75% marks from the assignments. At these tutorial sessions, group work was also practiced to facilitate peer learning.

The high acceptance of the method was indicated by a 98% student satisfaction score at mid and end semester feedback. This method also enhanced student attendance to 75% recording more than 90% attendance in the tutorial classes, compared with around 50% attendance in the absence of this reported method.

The use of a modified Case Study method that developed multiple learning approaches in Statistics Undergraduates to develop Higher-order Skills

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Whatever teaching methods we use in the classroom, students construct ways in how best they are to utilise such methods to generate the product/s that we require of them in their classroom assignments. Statistics students similarly use the techniques we teach to look at a problem, and to collect and analyze data and to make conclusions on the analysis. Statistics graduates are therefore expected to have developed analytical skills, and thus, it is not only necessary that we teach them the methods, but also assist them to construct how best they can use taught methods to develop their application skills.

The Department of Statistics first introduced the case study teaching method to several course units of the statistics curriculum to develop student analytical skills, where students were given various data sets with a particular set of research questions requiring them to analyze the data to find solutions to the posed questions. However, students experienced difficulty to discuss the statistical findings in a practical context as the background of the data was known to them only through the description given to them. Reflecting on this limitation, the case study was modified so that students collected datasets themselves, and answered the questions by exploring their data. Each student had to submit a report based on their work.

Analysis of student reports (n=50) showed that all students did not use the same approach but had 'constructed' 3 different approaches to collect data for their analysis. The majority (41 students = 82%) had related their conclusions to the practical scenarios. Most students (72%) stated that the case study was very useful in understanding the concept of confidence intervals. This newly introduced modification enhances the linking of problems with practical realities which is an important higher order skill expected from a statistics graduate. An example case study will be used to illustrate the skill development process.

Creative application of Teaching Methods as Effective Teaching Tools for Large Classes in Higher Education

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Teaching in Sri Lankan higher education sector has been a constant challenge. The higher education institutes similar to Universities in Sri Lanka have been pressurized by various forces such as political and social to take large numbers of student intakes. This has subjected these traditional relatively inflexible institutions to struggle in finding appropriate ways of teaching.

The Faculty of Management Studies and Commerce of the University of Sri Jayewardenepura teaches large numbers of students in a common program. Approximately 1000 students are taken to the Faculty every year. These students are supposed to undergo a common teaching program for the first two years. Teaching in this common program has been a regular challenge, as well as there are many complaints from students on the rigidity and inflexibility of teaching and assessing methods.

HRM 2302: Personal and Social Responsibility is a subject offered to the second year students of the Faculty by the Department of Human Resources Management which has become very popular due to its inherent mode of teaching. The main objective of this presentation was to emphasize the possibility of using creative teaching techniques in traditional educational institutes and very specially in teaching large numbers in the light of adopting existing teaching methods to creatively teach this subject. Ethnographic/visual methods were used collect data on the creative teaching approaches such as role play/drama, mock exams, poster tours, mind mapping, peer group evaluations, buzz groups exercises, social projects such as bomb awareness programs, blood donation campaigns and shramadanas on 50 students (n = 50). Both qualitative and quantitative techniques were used to analyze data and 83% of the students favoured the teaching methods adopted. Therefore it is recommended that creative teaching techniques must be used in higher education and specially for large groups to make the teaching more effective.

**Skill Development Opportunities perceived by
Second Year NDT students at University of Moratuwa**

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Skills development has become a very important aspect of university and tertiary education as the industry seeks skilled people for employment. This study identified the opportunities available for skills development for students attached to the National Diploma in Technology (NDT) program of the University of Moratuwa, and deployed a questionnaire among ninety one second year students to survey the extent of student agreement with perceptions that were based on 'questions' presented by teaching staff.

Between 55% to 65% of students agreed that industrial training helped in improving their skill of applying theory into practice, decision-making, being responsible and being competent. 75% students agreed that field visits helped them to learn how to apply theory into practice. Only 33% of students thought that IT practical classes helped to develop IT skills. The percentages of students who thought that lecturing improved learning skills was 90%, that tutorial classes improved problem solving skills was 76%, that English classes improved communication and presentation skills was 71%, library reference improved self-learning skill was 91% and the year end examinations helped improve time-management was 74%.

Students also thought (55%) that participating in the Industrial Exhibition and Trade Fair, organized by the Institution of Incorporated Engineers, Sri Lanka (INCO) industrial exhibition was a good experience to improve practical and technical knowledge, self learning and creativity.

The results indicate that these students are in agreement with some of the available opportunities as helping to develop their skills within the curriculum. The presentation will present a detailed summary of the results and how some of the teaching, learning and assessments methods given in the study can be used effectively in student skill development.