

Conference Programme

SACLA 2009: The 2009 Annual Conference of the South African Computer Lecturers' Association

Schedule

	Sunday, June 28, 2009			Monday, June 29, 2009			Tuesday, June 30, 2009			Wednesday, July 01, 2009				
07:00														
07:30				Breakfast			Breakfast			Breakfast				
08:00				Registration			Papers: C1 C2 C3 C4			Papers: G1 G2 G3 G4				
08:30				Opening										
09:00														
09:30				Tea/Discussion time			Tea/Discussion time			Tea/Discussion time				
10:00														
10:30				Papers: A1 A2 A3 A4			Papers: D1 D2 D3			Papers: H1 H2 H3				
11:00														
11:30														
12:00				Panel: The need to move to parallel programming at all levels of education.			Panel: The current CAT and IT School Curriculum and the role of Universities in supporting teachers and the curriculum.							
12:30														
13:00				Lunch			Lunch			Lunch				
13:30														
14:00	Registration	Workshop				Papers: B1 B2 B3			Papers: E1 E2 E3			Round the Pool discussion on CAT and IT School Curriculum		
14:30														
15:00			Tea/Discussion time			Tea/Discussion time								
15:30			B4			Papers: F1 F2								
16:00	SACLA AGM													
16:30														
17:00														
17:30														
18:00														
18:30														
19:00														
19:30														
20:00							Conference Dinner							
20:30														

Paper allocation

The paper categories are designated as follows:

- **Full papers: 30 minutes (25 minutes presentation + 5 minutes discussion)**
- **Short papers: 20 minutes (15 minutes presentation + 5 minutes discussion)**
- *Posters: 20 minutes (presentation + discussion)*

Paper Session A: Undergraduate Teaching			
Business Intelligence Projects in Second Year Information Systems Courses	Mike Hart	Page 6	A1
A Study of Object-Oriented Design Errors Made by Novice Programmers	Nelishia Pillay	Page 11	A2
Group Assignments in Computer Science Courses: Handling the “Free riders” in an introduction to OOP Course	G.M. Muriithi	Page 9	A3
Computing Skills for Science Foundation Candidates: Connecting Students to the Future	Colin Chibaya	Page 4	A4
Paper Session B: Research			
Social Interaction Online: The case of a cross-disciplinary research conference	Tawona Nyirenda and Lisa F Seymour	Page 10	B1
The role of an IT research professor: an essay-in-progress	Jan H. Kroeze and Philip D. Pretorius	Page 9	B2
Design Doctorate in Computing: a defence of “doing cool stuff”	Edwin Blake	Page 4	B3
Sponsor presentation: Microsoft	Nyaladzi Mpofu		B4
Paper Session C: E-Learning			
Usability Testing of e-Learning: an Approach Incorporating Co-discovery and Think-aloud	TF (Funmi) Adebesein, MR (Ruth) de Villiers and Samuel Ssemugabi	Page 4	C1
Facebook as an academic tool for ICT lecturers	Sonja Cloete, Carina de Villiers and Sumarie Roodt	Page 5	C2
Computer Skills of First-Year Students at a South African University	Jane Nash	Page 10	C3
The exploration of Game Analysis for Educational Gaming	Pieter Joubert (jr)	Page 8	C4
Paper Session D: Computing Curricula			
The school subject Information Technology: A South African perspective	Marietjie Havenga and Elsa Mentz	Page 7	D1
Away with computer literacy modules at universities, or not?	Mrs Engela Dednam	Page 5	D2
Symbols for Children’s Tangible Programming Cubes: an Explorative Study	Andrew Cyrus Smith	Page 12	D3
Paper Session E: Applied Computing			
A Spell Checker and Corrector for the Native South African Language, South Sotho	LA Grobbelaar and JDM Kinyua	Page 6	E1
Intelligent Risk Management Tools for Software Development	John Dhlamini, Isaac Nhamu and Admire Kachepa	Page 5	E2
Implementation of a Rewarding Module for an e-Commerce Platform for Marginalized Areas	Nobert Rangarirai Jere, MamelloThinyane and Alfredo Terzoli	Page 7	E3
Paper Session F: Teaching Practice			
The First Three Habits of Highly Effective Information Technology Lecturers	Pieter Joubert and Lizette Weilbach	Page 8	F1
<i>YOU ASKED FOR IT! Phrasing questions for computer science assessment (Poster)</i>	Vreda Pieterse and Cecilia M du Toit	Page 11	F2
Paper Session G: Information Systems			
The Soft Practice of the Information Systems Practitioner - Towards an Engaging Style for Future Graduate IS Education	R. Naidoo	Page 10	G1
Learning the “word” and “the world”	Claudia Kalil	Page 8	G2
Project Management Lessons from the British Lions Rugby Tour	D C Smith	Page 12	G3
Sponsor presentation: Masterskill Blended Learning: Lessons Learnt	Jeanine Briggs		G4

Paper Session H: Software			
Open Source Software Adoption by South African MSEs: Barriers and Enablers	Jason Ellis and Jean-Paul Van Belle	Page 5	H1
Web application by South African Health Institutions	Mandlenkosi Victor Gwetu	Page 6	H2
Sponsor presentation: Oracle	Sonja Balt		H3

Workshop

Workshop: Up-and-Running with Drupal

Shunmuga Pillay, Tyler Morgan, and Subhashinidevi Pillay

A content management system (CMS) is a computer application used to manage the collaborative creation, editing, publishing and archiving of any kind of digital content.

This workshop will provide a hands-on experience building a non-trivial website using Drupal, a popular Open Source CMS. This will prove useful for educators who need to build online collaboration tools, but do not have the necessary resources to outsource the work. It will also prove useful to educators managing the development of online collaboration tools.

Agenda:

1. Talk, 15 minutes, Tyler Morgan: CMS Systems and Ideas for their use within a University Environment.
2. Talk, 5 minutes, Shunmuga Pillay: Motivations for an Internally Managed Science Magazine for a Faculty of Science.
3. Workshop: Building an online Science Magazine.

Panels

The need to move to parallel programming at all levels of education

Nick Thorne, Andrew Woods, Karen Bradshaw, Nelishia Pillay

Sequential systems are going to become outdated. Parallel systems are already the way of the future. Intel and AMD are both releasing new processors with low or no clock speed improvements but more cores. Brainstorm some ideas on how to setup a road map to decide on how bring parallel components early into a CS syllabus.

The current CAT and IT School Curriculum and the role of Universities in supporting teachers and the curriculum.

Jean Geyling, Dave Sewry, Melisa Koorsse, Keith Gibson

Paper Abstracts

Usability Testing of e-Learning: an Approach Incorporating Co-discovery and Think-aloud

TF (Funmi) Adebisin, MR (Ruth) de Villiers and Samuel Ssemugabi
School of Computing, UNISA

Computer applications developed to support learning in the cognitive domains are quite different from commercial transaction processing applications. The unique nature of such applications calls for different methods for evaluating their usability. This paper presents the application and refinement of the framework for usability testing of interactive e-learning applications proposed by Masemola & de Villiers. In a pioneering usability testing study, we investigate the effectiveness of the think-aloud method when combined with co-discovery testing.

Design Doctorate in Computing: a defence of “doing cool stuff”

Edwin Blake
Department of Computer Science, University of Cape Town

This position paper argues that it is time to extend the notion of worthwhile scholarship in Computer Science to embrace Design and to award doctorates in the field of Design.

Computing Skills for Science Foundation Candidates: Connecting Students to the Future

Colin Chibaya
Department of Computer Science, Rhodes University

Foundation programmes at Rhodes University are designed for candidates who matriculate from under-resourced rural and township schools in South Africa. Most of these students have not used computers before. Unfortunately universities in South Africa often take it for granted that all students who enroll into tertiary education have covered the basic introductory skills in computing during their primary, secondary or high school education. Computer illiterate candidates are therefore left to self-develop, resulting in poorly prepared students who would not attempt any computer related studies in future.

There is often a danger that students who enroll into foundation programmes are not motivated because of the discriminatory nature in which the programmes are designed (for black South African candidates from under-resourced rural and township schools). This paper presents a novel approach to improving computer literacy courses at universities, and demonstrates its success using data from the past four years of implementation. The aim of the study has been primarily to improve student attitude towards foundation programmes, particularly, student motivation towards computing skills when there is a stigma attached to enrolment. A secondary aim of the study is to investigate the most appropriate curriculum between the adopted and the proposed needs-driven approach, where students and the lecturer negotiate the relevancy of each skill offered. This paper presents both aims simultaneously by regularly involving students in curriculum development during the course of the year.

Six computing skills were commonly identified as relevant to first year students over the years of our study. We however do not conclusively prescribe these at this stage but rather present them as a baseline upon which shared agreements may arise towards connecting students to the future. We describe the relevant content for each skill, the amount of time required to master each skill, the contributions of each skill towards the final course credit and the time of the year when each skill is relevant to students. Generally, the needs-driven approach calibrates a culture of success and deep learning in students, which in turn yields direct benefits, not only in terms of marks, but also in terms of students' lifelong computing skills.

Facebook as an academic tool for ICT lecturers

Sonja Cloete, Carina de Villiers and Sumarie Roodt
University of Pretoria

In this paper, we investigate the use of Facebook as an academic tool by lecturers in Information Systems and Computer Science departments in Southern Africa. Students' methods of engagement are very different than it was many years ago and the way students communicate and interact have changed because of new technologies. We found that very few lecturers are exploring the use of one such new technology, namely Facebook, to enhance their teaching.

Away with computer literacy modules at universities, or not?

Mrs Engela Dednam
Department of Computer Science and Informatics, University of the Free State

In this paper an investigation into the need of university students to be computer literate and their computer literacy profile is reported. Questionnaires were prepared and sent to programme directors of programmes that included computer literacy modules in their curricula. The directors, in response, indicated which of the listed outcomes their students use during their studies. They also indicated additional desired outcomes which were not included in the current computer literacy modules. Statistics were also drawn to determine whether the number of students who are not computer literate decreased over the past few years or not. Data from questionnaires to students were also analysed to determine what their computer literacy levels are before they commence with the basic computer literacy module. It is concluded that it is still necessary for tertiary institutions to continue to present computer literacy modules because large numbers of students still do not have sufficient computer knowledge to apply during their studies and later in the work place.

Intelligent Risk Management Tools for Software Development

John Dhlamini, Isaac Nhamu and Admire Kachepa
School of Information Technology, Polytechnic of Namibia

Software tools have been used in software development for a long time now. They are used for, among other things, performance analysis, testing and verification, debugging and building applications. Software tools can be very simple and lightweight, e.g. linkers, or very large and complex, e.g. computer-assisted software engineering (CASE) tools and integrated development environments (IDEs). Some tools support particular phases of the project cycle while others can be used with a specific software development model or technology. Some aspects of software development, like risk management, are done throughout the whole project from inception to commissioning. The aim of this paper is to demonstrate the need for an intelligent risk assessment and management tool for both agile or traditional (or their combination) methods in software development. The authors propose a model, whose development is subject of further research, which can be investigated for use in developing intelligent risk management tools

Open Source Software Adoption by South African MSEs: Barriers and Enablers

Jason Ellis and Jean-Paul Van Belle
University of Cape Town

This paper explores the factors which influence the use of Open Source Software (OSS) by small and micro enterprises. OSS has been identified as a facilitator for small enterprises in emerging markets to implement an Information and Communication Technology (ICT) infrastructure at reduced cost. However, its diffusion in South Africa has been

rather slow. This research aims to highlight OSS adoption factors applicable to small enterprises. The Technology-Organisation-Environment (TOE) framework was used to guide the data analysis. This research also attempts to identify additional factors which are unique to the context of this research and evaluate their implication on the OSS adoption decision.

Although there are many factors influencing the adoption decision by smaller enterprises, the lack of knowledge and exposure were fundamental to the slow diffusion of OSS. Factors contributing to this lack of product knowledge were the lack of OSS marketing and easily accessible OSS vendors.

A Spell Checker and Corrector for the Native South African Language, South Sotho

LA Grobbelaar and JDM Kinyua
Central University of Technology, Free State

We describe a multithreaded, spell checking and correcting software application for the Windows platform, called eSpellingPro sa Sesotho sa Leboa. The application is specifically targeted to check South Sotho typed text for misspelled words, suggest correctly spelled words for the identified misspelled words and incorporate a degree of automatic correction of the incorrectly spelled words. The biggest motivation behind the development of this system, a custom spell checking and correcting application for this indigenous South African language, stemmed from evidence that had been gathered that suggested the average twenty year old South Sotho individual's spelling-skills had deteriorated. When considering the need to create error free documents, for example, a legal document in South Sotho, sub-standard spelling-skills could pose possible problems. Spell checking software does exist for the South Sotho language, but not for checking and correcting. Additionally, the system has the ability to translate South Sotho words into their Afrikaans and English equivalents, adding functionality. The application also has simple features of existing spell-checkers for example the ability to change the font, the font-size, to apply bold, italics or both to a word, underline a word, select all the text in the document and to print the document. Although South Sotho is not a language with high inflection, the application also checks for inflection, for example when the user enters two words as one. To accomplish faster checking, flagging and suggestion operations, multithreading was used in certain modules.

Web application by South African Health Institutions

Mandlenkosi Victor Gwetu
University of Venda

The World Wide Web (WWW) is one of the fastest growing technologies today. The content and design of websites has generally evolved over the years to create a cyberspace with greater information diversity as well as a wider spectrum of functionalities. The contribution of this paper lies primarily in the area of application of the WWW, specifically by South African health institutions. In this paper the researcher investigated how these institutions are utilizing the WWW and sought to find out whether as a provider of essential services to society, health organizations are taking advantage of the web by using its interactivity features. By developing a framework to enable the study of both content and interactivity features of these websites, the study was able to find out to what extent web technologies were being utilized and for what purposes. Findings are presented and recommendations made on gaps in possible utilizations of the web by health organizations, based on results from the study.

Business Intelligence Projects in Second Year Information Systems Courses

Mike Hart
Department of Information Systems, University of Cape Town

In recent years Business Intelligence (BI) has been rated by international academics and chief information officers (CIOs) as one of the most, if not the most, important application areas of information systems (IS). In many undergraduate university IS curricula, however, BI is only briefly mentioned, sometimes under the topic of Decision

Support Systems (DSS), but students rarely gain a practical understanding of what it means and how it is used in practice by end users.

This paper describes experiences of the author over five years of introducing practical BI projects to a 2nd year class of IS majors in a database systems course, and most recently, to a 2nd year class of 650 accounting and finance majors in a general course on IT in Business. In each case only five lectures were available to cover the topic of BI, including DSS, data warehousing, data mining, OLAP, and corporate performance management. Because of its relative user-friendliness and widespread use in industry OLAP was chosen for the project. Students were given large commercial datasets to analyse, using leading BI software products. In answering a range of questions, they had to assume the roles of an international product manager as well as a country manager for a global organization.

The paper describes the objectives of the exercise, how software, data and project questions were selected for the project each year, the experiences of project teams and the lecturer, constraints and challenges faced, and overall learning points. It starts with an introduction into BI and its typical components and activities, then turns to IS at the University of Cape Town. The use of projects and some related educational issues are discussed, then the history of the projects from 2004 to 2008 is outlined. The conclusion comes after discussion and some learning points.

The school subject Information Technology: A South African perspective

Marietjie Havenga and Elsa Mentz
North-West University

In this paper our presupposition is that the content knowledge of the school subject Information Technology (IT) is beyond the expected depth of Grade 12 learners. We demonstrate our presupposition by indicating different concerns from principals, teachers and learners. We show that learners have not achieved the stated outcomes as specified in the National Curriculum Statement and Learning Programme Guidelines. In addition, we compare the United Kingdom's leading award body for A-Level qualifications for Computing with the IT content framework of South Africa. We recommend a revision of the content framework to accommodate all learners and equip them with a more balanced knowledge base of the subject field.

Implementation of a Rewarding Module for an e-Commerce Platform for Marginalized Areas

Nobert Rangarirai Jere, MamelloThinyane and Alfredo Terzoli
Telkom Centre of Excellence in Developmental E-Commerce
Computer Science Department, University of Fort Hare

e-Commerce can help to deliver economic growth, increased business opportunities, enhanced competitiveness and better access to markets. At present, though most small enterprises lack the knowledge of how investment in e-Commerce could benefit their businesses and help them develop that competitive edge. Currently most of the small enterprises are adopting e-Commerce projects because of improved access to the technical and communication infrastructure. E-Commerce platforms have emerged and expanded in rural communities to improve business in these areas. Shopping malls, selling on-line and shopping websites have been created to ensure growth of small businesses in rural communities. However, it is still difficult to ensure sustainability of e-Commerce projects in these areas. Donors and well-wishers implement most of the e-Commerce projects in rural communities. Once the donors fail to keep on supporting the projects in most cases it causes failure of these e-Commerce projects. Thus, rural people lack adequate resources and skills to support such systems especially in the absence of the initiators. Shortage of advanced technologies also contributes to the failure of e-Commerce. In many rural communities, e-Commerce projects have not benefited the targeted people because of new and advanced changes in these projects. These technological changes make it difficult for rural people to be able to support e-Commerce projects. Discovering new ways of selling and identifying advanced strategies play an important role in sustainability of e-Commerce projects in rural areas. A lot of activities and applications have been developed to improve the e-Commerce projects. This paper explains the rewarding application as a strategy to improve e-Commerce projects in rural areas. The application allows customers to get points for buying on-line from a marginalized area. This allows the e-Commerce project in rural communities to be able to compete on the global markets.

The First Three Habits of Highly Effective Information Technology Lecturers

Pieter Joubert and Lizette Weilbach
University of Pretoria

Information Technology (IT) lecturers easily become victims of a vicious downward circle of work overload, lost passion, abandoned motivation and hopelessness. In this paper we argue that for a lecturer to escape this downward spiral s/he has to question and change his/her present paradigm. Covey's eight habits of highly effective people is used as basis for the discussion. The authors have taken the first three habits and transformed them into practical steps for IT lecturers which could assist them in changing their lecturing careers with the focus on regaining their enthusiasm to once more experience a life of lecturing abundance.

The exploration of Game Analysis for Educational Gaming

Pieter Joubert (jr)
University of Pretoria

This paper explores issues of Game Analysis when implementing a Game or Virtual World in an educational context. The paper looks at a specific implementation of an Open Source Virtual World and the processes by which the educational nature of the game was evaluated and explored. The paper concludes with a suggestion for the creation of a unifying framework for Game and Virtual World Analysis.

Learning the “word” and “the world”: Developing academic writing and literacy in Information Systems Honours students at the University of Cape Town using enquiry-based learning embedded in a “context-rich” institutional scenario.

Claudia Kalil
Professional Communication Unit, University of Cape Town

In the global context there are many imperatives to transform learning. This paper describes an enquiry-based teaching programme using Scenario Learning (SL) (Grant, 1999) and used to develop academic writing practices in IS Honours students at the University of Cape Town (UCT) in 2009. This involved teaching communicative competence by embedding learning to write and reference a journal-style article in a specific real-world scenario: business management processes (BPM), at a development organisation based at UCT, the Student Health and Welfare Organisation (SHAWCO).

In the past IS Honours programme students wrote an essay at the start of the year but with no input on research and planning. In 2009 students investigated BPM related to for example:

- volunteers on specific education and sports projects, or
- the BPM in place for marketing (15) education projects.

The students had a lecture on SHAWCO and specific education projects and were handed 2 academic papers on BPM, before starting their investigation in threes. In four workshops students, rotating in groups, presented, and got feedback from lecturers. They simultaneously received input on academic writing (e.g. style and referencing) and finally wrote an 8 to 12 page journal-style article as individuals.

The article concludes that there was “transformation value” in embedding learning in an institutional scenario. It raised awareness, motivation and collegiality among staff. SHAWCO will benefit from the evaluation of their projects. For students there were challenges in critically evaluating BPM in a development organization. As an open-ended problem-solving framework the SL allowed students to develop knowledge based on informed reasoning and analysis. In reflecting on the social world students could develop the metalanguages needed to negotiate between different contexts effectively.

The role of an IT research professor: an essay-in-progress

Jan H. Kroeze and Philip D. Pretorius
School of Information Technology, North-West University

In academia the future is research, both for academic staff and students. Connecting students to the future, therefore, does not end with teaching courses. We should also teach research and research teaching, and, of course, conduct research as a way of teaching by example. Indeed, until recently it has been assumed that all lecturers at tertiary institutions should teach, conduct research and do community service. There are indications that this idealistic goal may be unrealistic, especially in smaller universities where few academic staff members have to cope with various taught programmes and a high student to teacher ratio. Some universities seem to have realised this predicament and have started to advertise positions for research professors in the recent past. According to our knowledge, NWU (VTC) is the first institution in South Africa to create a full-time research professorship in a school of IT. This short paper is an attempt to clarify the expectations, roles and duties of such a position.

The paper explores the various aspects of an IT research professorship in terms of conducting, leading and managing research. It is suggested that the main task should be to undertake research, including cooperation and co-authoring with colleagues and postgraduate students. Supervision and co-supervision of dissertations and theses is another primary task.

Publishing at least one or two research outputs from doctoral and master's students' dissertations should be high on the agenda. Using and promoting the article model for theses could enhance the number of outputs dramatically. A research professor will typically also be involved in research-related administrative matters such as serving on the university's research ethics committee.

Creating and enhancing a research culture in the department or school poses a challenge, especially where members of the academic personnel have huge heavy teaching loads. A regular research colloquium could be used to stimulate ideas by giving feedback on progress with research activities such as postgraduate studies, the writing of papers and articles, and discussion of new research projects. Encouraging lecturers to research topics that they feel passionate about could go a long way to incite new research endeavours. The research professor should, therefore, join tea time conversations and listen attentively in order to hear what makes his/her colleagues tick!

Since the paper is a work in progress, feedback and suggestions from our national colleagues will be welcomed and included in an article to be submitted to an accredited journal. We would also like to thank Prof Dewald Roode for so generously sharing his vast tacit knowledge on this topic with us.

Group Assignments in Computer Science Courses: Handling the "Free riders" in an introduction to OOP Course.

G.M. Muriithi
Central University of Technology, Free State

The design, development, implementation and management of modern Information Technology systems call for IT professionals who can seamlessly combine technical competence with strong communication and teamwork skills. Group assignments present a common strategy that lecturers use to nurture teamwork and communication skills in their students. However, several challenges need to be overcome if group assignments are to be effective. One key challenge is how to handle students who fail to participate in group assignments and yet stand to unfairly earn credit for work they did not do. By failing to participate in group assignments, "free-riders" may coast through the course without acquiring the requisite teamwork and presentation skills that group work set out to inculcate in the first place. This paper discusses some observations made in an introductory course in object oriented programming and demonstrates that by revising the assessment strategy in such a way that students in a group do not know upfront who among them will defend a group's practical work, the level of participation is significantly raised. This spike in participation levels leads to a reduction in the number of free-riding students

The Soft Practice of the Information Systems Practitioner - Towards an Engaging Style for Future Graduate IS Education

R. Naidoo Ph.D

School of Economic and Business Sciences, University of the Witwatersrand

This paper describes a more engaging style for future graduate education in IS. An opportunity to adapt the systems development project course, currently run for Honours students by the Department of Information Systems, at the University of Witwatersrand, emerged as a result of a growing recognition to emphasise the soft practice of the IS Practitioner. These changes were partly inspired by recent work conducted by leading management academic, Henry Mintzberg. Mintzberg criticised management development approaches for overdeveloping a student's analytical ability while failing to address softer aspects. Although the blending of pedagogical approaches to address this critical gap is in its embryonic phase, including more authentic pedagogies is expected to increase the effectiveness of the students' preparedness for real-world challenges. In contrast to technological pedagogical advances which emphasises space rather than place, this paper promotes deeper social and experiential approaches. Increasing the student's understanding that the IS Practice is largely a social and facilitating activity is expected to significantly increase the future educative value of IS.

Computer Skills of First-Year Students at a South African University

Jane Nash

Centre for Educational Technology, University of Cape Town

With increasing use of information and communication technologies in education, students entering university need a basic level of computer proficiency to be able to access course material and complete assignments. At the University of Cape Town (UCT), all new first-year students are required to write an online computer skills test, so that those who lack the necessary skills can be identified and provided with basic training. This paper analyses the results of the computer skills assessments written by 4169 first-year students during orientation 2009. We conclude that there is a definite need to provide computer training for new university students, and that African students are most at risk of being disadvantaged by their lack of prior skills.

Social Interaction Online: The case of a cross-disciplinary research conference

Tawona Nyirenda and Lisa F Seymour

Information Systems Department, University of Cape Town

While, online conferencing has grown in popularity, many conference attendees still prefer face-to-face conferences because the social networking opportunities are seen as superior. Hence enabling social interactions in online conferences is seen as important. This paper provides a case study of how social interactions are promoted in an online cross-disciplinary research conference. The online conference website provided archival artefacts posted by participants during the online conference discussions. These artefacts were firstly analysed to identify the levels of social interaction present in the online conference, and secondly to identify social interaction enablers and inhibitors. Effective enablers were found to be the facilitation and the use of prescribed topics of discussion. Some major inhibitors of social interaction were found to be the lack of community amongst members, poor conference timing and notice period, lack of immediacy and unclear or not relevant topics. Although the study focused predominantly on a cross-disciplinary research conference, the findings reported in this study could have useful applications on online social interaction in general. The study found that while an online conference arguably has merits over a face-to-face conference, these benefits can only be optimised when social interaction is deliberately fostered through convergence of the online conference tool, facilitation, and topic design.

YOU ASKED FOR IT! Phrasing questions for computer science assessment

Vreda Pieterse and Cecilia M du Toit

Department of Computer Science/Humanities Education, University of Pretoria

The formulation of questions is central to the design of good assessment practices. In reality, however, lecturers, seriously pressed for time, often neglect to pay the necessary consideration to the student's reception of the question. Students' failure to sufficiently grasp the essence of a question is often informally cited as a reason for inadequate performance in a test. In this study we attempted to extrapolate aspects that may cause computer science students to misunderstand the instructions and scientific inquiry with the result that they fail to address the very issues that the lecturer wishes to assess. The theoretical underpinning includes the application of seminal instructional frameworks such as Bloom's Taxonomy of Educational Objectives and its revision by Krahtwohl as well the SOLO taxonomy by Biggs and Collis.

The main objective of this research is to answer the question: Why do students consistently fail to accurately and fully comprehend set questions?

- Misconception and failure can be avoided if we can answer the following:
- How to identify the essence of the specialist knowledge and insight that need to be assessed?
- How to suitably elicit the answer that we seek?
- How to aid the students' conceptualisation of the gist of the matter?
- How to phrase the question in a suitably unambiguous, explicit, relevant and comprehensible manner?

This study comprised an electronic survey hosted on a web server. A number of closed groups of educators interested in computer science and information technology was invited via e-mail to participate. The respondents to the questionnaire were asked to reflect on the rigour and relevance of two set questions. In a second level of inquiry the respondents were asked to provide examples of problematic question formulation. In addition they were requested to explicate their student's failure to answer these questions satisfactorily.

The rich data that was gathered during the survey was analysed in a two-tiered coding procedure that involved scrutiny of responses in a qualitative, interpretive model. After thematic synthesis, the results provided findings that include the following:

- the importance of clarity of expression
- insufficient reading comprehension, especially of second language speakers
- the facilitation of conceptualisation through graphic representation.

After identification of possible causes of misconception of questions we aim to compile a set of guidelines to address problems related to miscomprehension of set questions, that can serve as a tool for computer science educators to improve their assessment skills and ultimately the performance of their students.

A Study of Object-Oriented Design Errors Made by Novice Programmers

Nelishia Pillay

School of Computer Science, University of KwaZulu-Natal

There has been a vast amount of research into the errors made by novice programmers when implementing the object-oriented programming paradigm. However, a majority of the work in this area has focused on language-specific or implementation errors. There has been very little work done on object-oriented design errors. This paper presents the results of a study conducted to identify such errors and brings together the findings of this study and previous work in this area.

Symbols for Children’s Tangible Programming Cubes: an Explorative Study

Andrew Cyrus Smith
CSIR Meraka Institute

In this paper we report on an explorative study done with children with the aim of developing symbols for a tangible programming environment that does not incorporate written text. We describe our methodology, provide results obtained and discuss them. We also provide a short overview of prior physical programming research.

Project Management Lessons from the British Lions Rugby Tour

D C Smith
Department of Information Systems, University of Cape Town

Project Management courses are often taught as capstone courses in Information Systems (IS) degrees. As IS projects become more complex there is a need for project managers to increasingly adopt leadership characteristics. This preliminary research compares management and leadership characteristics in an IS project context. It argues that the “soft skills” of leadership are essential in certain types of IS projects. Given the topical nature of the 2009 British Lions rugby tour, a case study of the 1997 Lions tour is presented, based on the book “My Pride of Lions” by Fran Cotton. This case study demonstrates successful leadership in action and identifies how that Lions tour “project” was the downfall of the mighty Springboks. The author proposes that the identified project leadership qualities should be developed by senior undergraduate students to encourage early leadership development in projects and to assist in reducing the current high incidence of project failure in the IT industry. Initial ideas on how this could be done will be presented.