SUNWAY COLLEGE

Proceedings of the Sunway Academic Conference 2018

The 5th Pre-University Conference

EDUCATION IN CHALLENGING TIMES

ENGAGE . ENRICH . EMPOWER

25 August 2018

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The Proceedings of the Sunway Academic Conference is a series of publications detailing papers presented in conferences organised by the staff of Sunway College or in collaboration with staff of other organisations. The Proceedings provide a platform for academic staff to share their research findings and stimulate healthy professional discourse on topics of mutual interest. This compilation is based on the acknowledgement received from the presenter to proceed with publication. At the time of printing, some extended abstracts have not been received or have been withdrawn on request by the presenter. The views expressed in the articles are those of the authors alone and in no way reflect the views of Sunway College.

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FOREWORD

It is my pleasure to welcome all of you to Sunway's 5th Pre-University Conference!

I am delighted to write this foreword on behalf of the conference organising committee. It is exciting to witness the growth of the Sunway Pre-University Conference as one of very few educational forums dedicated to the interests, concerns, and professional development of educators, administrators, technologists, and researchers involved in pre-university studies and post-secondary education. It is also very heartening to note the growing number of topics and papers being presented from one conference to the next. This speaks about the importance of pre-university studies as part of the 'equation' or 'support-system' for students to succeed in their tertiary education and for a country to achieve its human capital and economic goals. As such, we are pleased to present in this year's conference a keynote that touches on the digital revolution, social and enterprise reforms involving IT and the internet-of-things, and what these changes mean for education in the 21st century. We are also excited at the opportunity to learn from forum panellists who have been specially invited from different education sectors to calibrate/re-calibrate our educational and professional compasses.

This conference represents the efforts and contributions of many colleagues and supporters. I would like to thank every member of the organising committee, led by Suzana Ramli as Chairperson and Ruth Cheah as Co-Chair, and all members of the sub-committees responsible for secretariat, finance and sponsorship, and publicity functions. You are all inspirational with your passion, creativity, and commitment in bringing this conference to fruition. Our gratitude and thanks also go to the panel or

reviewers for their advice and tireless efforts in reviewing all the submissions. We extend special thanks to our conference keynote speaker and forum panellists for giving us their time and sharing with us their knowledge and insights. The continuous growth of the Sunway Pre-University Conference series is made possible on the advice and support of Puan Sri Susan Cheah, EXCO Member of the Sunway Group, and Dr Elizabeth Lee, Senior Executive Director of Sunway Education Group and Sunway University. We are indebted to both.

Finally, we appreciate all presenters and participants for your contributions and we wish everyone a fruitful and meaningful conference.

Cheng Mien Wee
Advisor
Organising Committee

SPECIAL MESSAGE

Congratulations to the organisers of yet another Pre-University Conference.

A Warm Welcome to all the Participants.

In the age of technology and with the dawn of the 4th industrial revolution, educators will also need to keep up and be able to create meaningful engagement with students. Technology today has reshaped the way we live, work, learn and play.

In the current era of global cooperation, collaboration and interdependence, it is extremely crucial that we, the teachers, assist our students in cultivating a global mindset. In a diverse classroom setting, students and teachers from diverse backgrounds should share differences and construct new knowledge on top of what has been taught. As you nurture each generation, it is our responsibility to continually learn and engage in discussion with your peers. Your experience will transform young minds who will then be able to conduct and reflect on how it would relate in a broader spectrum in economic justice, caring for the earth and caring for others including diversity. Students today will then understand the consequences of their actions.

Let this conference act as a platform for all of you here today to come together to share your knowledge and expertise with an open and fresh mindset to enable you to see things through new eyes.

We at Sunway see this alternative learning platform as an encouragement of multilateral information flow in its aims to address contemporary issues in higher education, while exploring new developments in teaching and learning methodologies.

We are here to support our teachers and lecturers on research developments and the exploration of introducing new active learning ideas in the classroom, where students are engaged in activities that provoke inquiry, imagination and deeper learning and understanding.

It is my hope that this conference will address many pertinent issues, current developments, as well as explore teaching and learning methodologies that can be used in or out of the classroom. You will be engaged, enriched, and empowered with valuable insights. You will take away thoughts and ideas that can be applied in your classroom for a more rewarding experience for both teachers and students.

Thank you and God bless.

Dr Elizabeth Lee
Senior Executive Director
Sunway Education Group and Sunway University

WELCOME NOTE

Welcome to the 5th Pre-University Conference!

Education in challenging times – engage, enrich, empower.

The 4th Pre-University Conference centred on the theme of seamlessly blending technology in teaching and learning practices. Picking up from the previous conference, it is important to further prepare both educators and learners to meet the demands of the new industrial revolution. Hence, the theme of this 5th Pre-University Conference emphasises on the need to equip individuals to continue adapting and innovating for the challenges of the future.

From the ancient civilisations to the modern world that we live in today, new ideas and technologies have been the hallmark of our development. Throughout this, people have always been at the core of this constant change and progress. Thus, it is vital that we engage, enrich and empower our people, educators and learners alike, to thrive in our ever-changing landscape. Today, we are proud to bring to you our guest speakers and presenters who will share their discovery from recent work and research.

A big 'thank you' to the committee members who have worked tirelessly over the past year in making sure this conference is a memorable academic experience for us all. This conference is undoubtedly the product of collaboration and hard work of everyone involved.

Thank you to our colleagues at Sunway College Ipoh, Sunway College Johor Bahru and Monash College, Melbourne for their continuous support.

We would like to extend our appreciation to all reviewers from Sunway College, Sunway University and Monash University for their valuable contribution and mentoring.

Special thanks to Mr Alan Goon, Executive Partner of Gartner Research and Advisory for being the keynote speaker today. We also want to express our appreciation to Tengku Nurul Azian Tengku Shahriman (Executive Vice President PEMANDU Associates Sdn. Bhd.), Mr Dzameer Dzulkifli (Co-founder & Managing Director, Teach for Malaysia) and Professor Abhimanyu Veerakumarasivam (School of Science and Technology, Sunway University) for sharing their perspectives on the conference theme.

Thank you Dr Elizabeth Lee, Senior Executive Director of Sunway Education Group for your endless encouragement.

Ms Cheng Mien Wee, thank you for your guidance. Your insight and drive for excellence has always motivated us to push our boundaries.

We hope you have a fruitful and enjoyable conference.

Suzana Ahmad Ramli
& Ruth Cheah Kah Yok
Chair & Co-Chair of Organising Committee

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Alicia Leong is a senior lecturer teaching Mathematics for three pre-university programmes. She is also a former Mathematics lecturer from Asia Metropolitan University. She obtained a master's degree in Mathematics Education from Universiti Teknologi Malaysia in 2014 and a Bachelor of Science in Biology and Chemistry from Campbell University, USA. She is currently the coordinator for the Cambridge A-Level Programme.

Alison Wong

Alison Wong is a lecturer in Corporate Law and Business Law at Sunway College, Malaysia. Her research interests are in pedagogical issues in the teaching of law subjects as well as refugee children and their accessibility to quality education.

Amanda Molnar

Amanda Molnar is a reformed accountant who received her CPA, CA designation in Toronto, Canada. She was the Lead Technology Coach for Sunway's Canadian Programme and is currently teaching in Lanciano, Italy. Amanda approaches teaching and learning through the lens of democratic-critical pedagogy and social justice.

Angelina Anne Balasundaram

Angelina, who is currently a chemistry lecturer at Sunway College Johor Bahru, is a Chemical Engineering graduate from UTM. She is an experienced educator who has ventured into the administration, editing and teaching of chemistry and other related sciences. This has fuelled her interest in researching an array of areas in her field of study so as to expound her knowledge from her findings.

Anjali Tikoo

Dr Anjali Tikoo (Dip. Ed; Ph.D.) has been a teacher of Chemistry and Biology at Monash College for the past four years. Before teaching foundation year students, Anjali was involved in tertiary teaching and biomedical research. She has worked at the cutting edge of cancer research at various institutes in Melbourne. Her work has resulted in numerous peer-reviewed scientific publications. Anjali has recently embarked on researching into improving learning and teaching outcomes.

Cecilia Gan Shyuan Fei

Cecilia Gan Shyuan Fei is a lecturer at Sunway College Johor Bahru. Throughout the ten years of teaching, she has helped many weak students to complete their programmes successfully. Apart from being a lecturer, she is also a Coordinator for Business Diploma Programmes, overseeing all student-related matters.

Chong Chai Hong

Chong Chai Hong is an English lecturer at Sunway College Johor Bahru. She graduated with a Bachelor of Arts in English Literature from Universiti Putra Malaysia and a Master in Teaching English as a Second Language from Universiti Teknologi Malaysia. She is interested in a genre approach to teaching and learner motivation.

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Chong Yee Ting is a teacher at Kuen Cheng High School. Previously, he taught Chemistry at Sunway College Kuala Lumpur and UTAR. He taught Pre-U and Foundation Programme Chemistry and is currently actively involved in training and creating e-learning materials.

Chua Ching Hao

Chua Ching Hao is a Mathematics lecturer in the Pre-University department at Sunway College Johor Bahru. He has a bachelor's degree and a master's degree in engineering. He decided to pursue a career in education because he believes that education is the key to enable people to succeed in life.

Emmy Jong Ee Mei

Emmy Jong Ee Mei is a full-time lecturer at Sunway College Johor Bahru and holds a Master in Teaching English as a Second Language from the University of Malaya. Emmy has 15 years of experience in teaching both local and foreign students. She is passionate about English, and she finds that helping her students gain mastery of it is a worthwhile effort as it makes a meaningful difference in their lives.

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Gloria Sivakumaran teaches English Language at the Sunway Foundation Programme, SCKL. She graduated with a Bachelor of Arts in English Linguistics and Master in Applied Linguistics from Universiti Putra Malaysia. Angelicia Anthony Thane is an English Language lecturer at the Sunway Foundation Programme, SCKL. She graduated with a degree and holds a Master in Applied Linguistics from University of Malaya.

Hii Shiun Leh

Hii Shiun Leh is currently a lecturer at Sunway College Johor Bahru. She earned her Bachelor of Science (Mathematics), as well as gained Master of Science (Mathematics) from Universiti Teknologi Malaysia. She has three years of teaching experience and a passion for teaching mathematics and enlightening young minds.

Jason Soh Chiaw Ker

Jason Soh Chiaw Ker is the lead lecturer for Accounting and Finance in the Australian Matriculation Programme, Sunway College Kuala Lumpur. He has a Master of Teaching and Learning from Taylor's University, and a Bachelor of Commerce with a major in Extended Accounting from the University of Sydney, Australia.

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Jeanie Lee Shu Shean graduated from Universiti Putra Malaysia with a Bachelor and Master in Applied Statistics. Currently, she holds the position of lecturer in the A-Level Programme at Sunway College.

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Jeffrey Ignacio is a Student Services Executive at Sunway College Johor Bahru and graduated with a Diploma in Tourism Management from Stamford College, Sabah. He is currently pursuing his Bachelor in Communications at Open University Malaysia. He has 16 years of working experience in the tourism and education industry. His current research interest is in the interpersonal communication and interactions between teachers and students.

Joanne Pan Wee Ching

Joanne Pan has a master's degree in Business Administration from the Management and Science University and her bachelor's degree is from the National University of Malaysia (UKM), majoring in Finance. Before joining Sunway College Kuala Lumpur, she was involved in the field of sales and marketing with the banking and pharmaceutical industries.

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Joseph Pang has a Bachelor of Science in Education (TESL) and a Master of Education (TESL) from Universiti Teknologi Malaysia. He is currently teaching Critical Thinking, Knowledge Management, ESP and EAP subjects at Sunway College Johor Bahru. Presently, his research interest is in the usage of video games in the classroom.

Karenjit Kaur

Karenjit Kaur has been lecturing at Sunway College Kuala Lumpur for 9 years and graduated from the University of Malaya with a bachelor's degree in Education (TESL), with a minor in Literature. She has also just completed her master's in World Literature from Universiti Putra Malaysia. She is passionate about researching mixed cultures and depictions of hybrid communities in works of literature.

Karthik Krishnan

Karthik Krishnan is currently working as a lecturer at Sunway College Johor Bahru. He received his master's degree from Universiti Teknologi Malaysia. He completed his Bachelor of Education in Mathematics from Universiti Teknologi Malaysia as well. He has been teaching Mathematics to young adults since 2017.

Krishnaveni Sritharan

Krishnaveni Sritharan's experience is both comprehensive and varied. With a Bachelor of Law and Master in Management, her illustrious career has developed throughout the 16 years with lecturing, training, administrating and developing programmes in the education sector. She has an engaging character and charismatic personality. With her superb communication and planning skills, she is considered by many as an interesting presenter and trainer.

Lawrence Tang Eng Loong

Lawrence Tang Eng Loong is a Mathematics lecturer in the Monash University Foundation Year (MUFY) Programme, Sunway College. He has been teaching in the programme for 10 years. His research interest is related to self-regulated learning, psychometric properties, and mathematical problem solving.

Leanne Magree

Leanne Magree is an Economics teacher in the Foundation Year Programme at Monash College, Melbourne. She has taught senior secondary students locally and internationally for over 20 years. Leanne has a Bachelor of Business and Education and has postgraduate qualifications in student welfare, curriculum development and TESOL.

Lee Pei Jayne

Lee Pei Jayne has worked in human resources as well as the education industry for the better part of the last decade. Her passion lies in the way humans interact with one another, both in person and across borders. Jayne currently teaches Business Management & Enterprise in the Australian Matriculation Programme.

Mangair Karasi Manickam

Mangair Karasi Manickam is a graduate from the University of Wollongong, Australia with a Bachelor of Internet Science and Technology (E-Commerce). She completed her Master of Science (Computer Science) at Universiti Teknologi Malaysia (UTM) with her research in Artificial Intelligence. She has 14 years of teaching experience with unique teaching strategies to effectively engage all students and foster a fun and fascinating learning environment.

Meera Rada Khrishnan

Meera graduated from University of Malaya with a Bachelor of Science (Hons) in Microbiology and is currently writing up her Master of Science dissertation. Meera has been in the Pre-University department of Sunway College Johor Bahru for the past 10 years, teaching Biology at the Cambridge G.C.E. A-Level and Monash University Foundation Year programmes. Meera finds immense gratification in being an instrumental element for motivating and triggering students to explore every academic and non-academic experience with an open, analytical mind.

Moy Tow Yoon

Moy Tow Yoon is a senior lecturer with expertise in statistics and marketing research at Sunway College, Malaysia. She has vast experience in teaching applied statistics and research methodology. Her main research interests are emerging social issues affecting students, students' engagement and preparedness for employability, and development of e-commerce.

Na-Dhira Kamal Ridzwa

Na-Dhira is an Accounting lecturer at Sunway College Johor Bahru. She holds a degree in Accounting in Business and is currently pursuing her final ACCA papers. Engaging students in learning has always been her passion. She believes quality classroom time has the utmost importance over quantity. Every student has the opportunity to succeed.

Nur Fatina Salwa Binti A. Jalil

Nur Fatina Salwa is currently a lecturer at Sunway College Johor Bahru, teaching compulsory subjects. She graduated with a Bachelor of Information Management (Library Science) and Master in Business Administration. She has 6 years of teaching experience and her passion to teach the youths has inspired her to write and present academic papers at both local and international conferences.

Paul Davidson

Paul Davidson is a senior lecturer at Sunway College Kuala Lumpur. He graduated with a Master in Science (National University of Singapore), and Post-Graduate Diploma in Education (National Institute of Education, Nanyang Technological University, Singapore). He teaches Grade 12 Biology in the Canadian International Matriculation Programme and is actively involved in training, creating e-learning materials and conducting educational psychology research.

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Pavinder Kaur Girn is a lecturer at Sunway College Johor Bahru. Her academic qualifications include a Bachelor of Arts in English Language from Universiti Tunku Abdul Rahman, Certificate (IV) Tesol and Master of Arts in Applied Linguistics from the University of Adelaide. She is interested in teaching and learning styles and systemic functional linguistics.

Phua Cun Uei

Phua Cun Uei is a Marketing lecturer at Sunway College Johor Bahru. He graduated with a Bachelor of Business Administration and a Master of Business Administration majoring in Marketing. He is a highly dedicated, professional and accomplished Marketing lecturer with 5 years of teaching experience.

Poh Boon Liang

Poh Boon Liang @ Poh Boon Lian is a passionate educator with 16 years of experience in the education field; teaching Economics subjects at Victoria University and Diploma in Business Administration programmes at Sunway College Johor Bahru. As a person who believes in life-long learning, she is currently pursuing her doctorate in Economics at Universiti Kebangsaan Malaysia (UKM).

Preedha R. Govindasamy

Preedha Govindasamy received her Bachelor of Science (Hons) in Computing from University of Portsmouth, UK. She is currently completing her Master of Science in Software Engineering. She has about 7 years of experience as an educator with Sunway Education Group, teaching various subjects in the field of Computing. Her past career experience includes holding managerial positions in several corporate companies handling software development projects.

Rachel Chamberlain

Rachel Chamberlain is the Learning and Teaching Development Leader at Monash College, Melbourne. She had previously taught humanities at Melbourne University and had worked in a number of learning and teaching roles in the tertiary and pre-tertiary sectors. Rachel has a Bachelor of Social Science (Hons) and a Graduate Certificate in Tertiary Learning and Teaching. She is currently completing a Master of Education (Policy and Leadership).

Rachel Chin May Ying

Rachel Chin is a graduate from the National University of Singapore with a Bachelor of Science (Mathematics, emphasis in Statistics). She also pursued a Master of Business Administration from the University of Southern Queensland, Australia. With more than 15 years' experience in the education industry, Rachel has taught a variety of subjects, from Mathematics and Programming to Marketing Research.

Rachel Tai Meng Chui

Rachel Tai Meng Chui is an A-Level Mathematics teacher in a college located in Guangzhou, China. She has taught A-Level Mathematics at Sunway College Kuala Lumpur and produced some video lectures to aid weaker students to cope with some challenging topics.

Rebecca Chin May Ping

Rebecca Chin is a graduate from the London Metropolitan University with a Bachelor of Science (Hons) in Computing & Information Systems. Rebecca has been lecturing for 13 years. As an educator, her aim is to kick-start ideas and encourage creativity in her students. She also enjoys stretching her creativity and artistic form of expression through art and dance.

Rosie Abbate

Rosie Abbate is an Accounting and Economics teacher in the Foundation Year Programme at Monash College, Melbourne. Rosie is a registered accountant and has worked in the corporate sector as an accountant before qualifying as a secondary teacher in 2005. Since then Rosie has taught Business subjects to senior secondary students. Rosie has a Bachelor of Business (Accounting and Business Law) and postgraduate qualifications in education.

Roy Tang Kok Ken

Roy Tang Kok Ken has served as a Pre-U Mathematics lecturer at Sunway College Johor Bahru since 2011. He was a panellist on the Cambridge Expert Panel to review the mathematics syllabi in 2015. He is an expert in developing class activities and engages students of different levels to reach their potential.

Saarah Mariee Arokeeya Samey

Saarah Mariee is an Accounting lecturer at Sunway College Johor Bahru. Saarah obtained a Bachelor of Science (Hons) in Applied Accounting (UK) and is currently pursuing her master's in Business Administration (Finance). Teaching is a passion of hers. She aims to mould and ensure continuous learning in students that will benefit their future.

Sathissan Ravagan

Sathissan Ravagan, a graduate from Universiti Malaysia Sabah (UMS) with a Bachelor of Science (Hons) in Mathematics with Economics and Master of Science (Statistics), has always been intrigued by Mathematics and Statistics and constantly strives to spread the word about its diverse applications. Approaching his tenth year of teaching, Sathissan is still passionate about satisfying the educational needs of his students whilst ensuring their overall well-being.

Shereen Kularajasingam

Shereen holds a degree in Information Technology and a Master in Business Administration. She teaches Computer Science and Information Technology at Sunway College Johor Bahru. She is a senior lecturer with more than 15 years of teaching experience. She is committed to teaching and believes she will make a positive contribution in her students' lives.

Sim Wan Jie

Having obtained first class honours in his Management degree, Dr Sim Wan Jie went on to pursue his doctorate at UTM on a full scholarship and graduated in 2015. He has also presented at two international conferences and published two journal articles during his doctorate studies. Sim has also initiated a number of interesting workshops in diverse areas for students, usually in collaboration with other colleagues.

Soon Pei Shan

Soon Pei Shan has lectured at the Victoria University Bachelor of Business programme at Sunway College since 2012. She has implemented blended learning in a few subjects such as Integrated Business Challenge and International Trade Practices. Her current research interest is related to e-marketing and consumer behaviour.

Sunitha Matthew

Sunitha joined Sunway College Johor Bahru as a Pre-University lecturer in 2012 and has taught Economics for the Monash Foundation Year Programme and the A-Level Programme. She obtained her Master in Economics from Universiti Putra Malaysia (UPM) in 2012 and her Bachelor of Economics from Universiti Malaysia Terengganu (UMT) in 2010.

Tan May Syuen

Tan May Syuen graduated from Taylor's University with first class honours in Bachelor of Arts (Hons) in Accounting and Finance. Before joining Sunway College Kuala Lumpur, she was a finance executive in the banking industry.

Thiruchelvi K. Murugiah

Thiruchelvi K. Murugiah joined Sunway College Ipoh in 2004 as a lecturer. She was the School of Business Programme Coordinator from 2009 to 2017. Currently she is a third-year doctoral candidate in Educational Management. In 2017, she published a book titled *The Development of 21st Century Skills for the Digital Economy in Malaysia.*

Wong Chee Seng

Wong Chee Seng is currently a lecturer at Sunway College Johor Bahru. Equipped with a Bachelor of Mechanical Engineering, Postgraduate Diploma in International Management and an MBA, he has 4 years of teaching experience and he encourages active learning among youths.

Wong Shae Lynn

Wong Shae Lynn is currently a senior lecturer at Sunway College Johor Bahru. She graduated with a Bachelor of Mechatronics Engineering and a Master in Technology Management, and has 14 years of teaching experience. Her love for teaching stems from her passion to work with youths.

Wong Sock Leng

Wong Sock Leng has been teaching Mathematics in the A-Level programme since 1998. She has moved on to teach Further Applied Mathematics from 2012 onwards. She graduated from the University of Malaya with a Bachelor of Science in Education (Mathematics) and holds a Master in Applied Statistics.

Yeoh Swen Hoo

Yeoh Swen Hoo has served as a lecturer at Sunway College Johor Bahru since 2010. Her passion for teaching and sharing has spurred her to research into experiential learning with students of different levels. She hopes to engage, motivate and inspire students to eventually create their own success stories.

Yong Yau

As Head of Mathematics in the Cambridge A-Level programme at Sunway College KL, Yong Yau is a senior lecturer with over 40 years of teaching experience, both at A-Level and Form 6 level, for which he was a principal examiner. He has also trained many teachers in both Mathematics and Further Mathematics.

A CASE STUDY ON THE DIFFERENCE BETWEEN STUDENTS OF SPM AND O-LEVEL BACKGROUNDS IN STUDYING MATHEMATICS IN THE A-LEVEL PROGRAMME

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Abstract

This study aims to understand the difference in the perceived and actual mathematics performance of the A-Level students from the SPM and O-Level backgrounds. Perceptions and expectations of lecturers are explored using an open-ended questionnaire. A comprehensive survey to understand the students' attitude, proficiency in the English language and other important predictors of academic achievement is also conducted. Content analysis is used to analyse the lecturers' feedback. Descriptive statistics, parametric and non-parametric tests are conducted to test differences between the two cohorts.

Keywords: A-Level mathematics performance, attitude, proficiency in English, predictors of mathematics achievement

INTRODUCTION

Our A-Level students are predominantly from the SPM or O-Level backgrounds. We observe that the SPM students have stronger mathematics background, are more disciplined and usually perform better in class tests. However, analysis of the May/June 2017 University of Cambridge Assessment International Education (CAIE) Mathematics and Further Mathematics exam results showed that there is no significant difference in academic performance between the SPM and O-Level cohorts.

METHODOLOGY

The unexpected finding that students from the SPM background did not perform significantly better in the May/June 2017 CAIE examination in both Maths and Further Maths, than those from the O-Level background prompted us to search further. Hence, we extended our study to determine the perceptions and expectation of the A-Level mathematics lecturers using a questionnaire comprising mainly of open-ended questions. The results of this study confirmed our initial hypothesis that the SPM cohort was expected to perform significantly better than the O-Level cohort.

The results of the lecturers' survey intrigued us further and we launched a comprehensive survey with 203 students from our 2017 intake. The purpose was to investigate plausible reasons we might be unaware of in understanding the differences or similarities of the two cohorts. Our literature review helped to broaden our perspective to look at plausible factors that other researchers have identified. The students' attitudes towards studying mathematics, and how attitudes are associated with their examination performance have been identified as significant predictors (Kusum, Granville & Dika, 2002; Brown, Brown & Bibby, 2007; Lourdes, Monteiro & Peixoto, 2012; Pendergast & Zhang, 2016). Howie (2003), found that language proficiency was a strong predictor for the students' success in mathematics. Veggel and Amory (2014), reported that maths support tutorials were highly crucial in helping mathematics students to perform.

RESULTS AND DISCUSSION

We were unable to conduct our studies using feedback from candidates who sat for the May/June 2017 CAIE examination, whose results prompted us to seek further insights. This cohort had left Sunway for further studies. However, the July 2017 intake whom we interviewed, shared similar characteristics with their seniors and we believe they are representative of the May/June CAIE examination candidates.

Lecturers' Perceptions and Expectation

90% Maths lecturers and 80% Further Maths lecturers felt that there was a difference in the A-Level academic performance for both Maths and Further Maths between the SPM and O-Level background students. Students from the SPM background were perceived to be better students in terms of mathematical skills, diligence and discipline and hence expected to perform better.

Survey: Students' Attitude, English Language Proficiency and Tuition

Our literature review indicated that the main factors that might affect the performance of the students in examinations are attitude, language proficiency and whether a student took tuition. These factors were investigated through the use of a structured questionnaire with 203 students.

Attitude
(Measured using the Likert Scale where 1 = Strongly disagree and 5 = Strongly agree)

Brown, Brown and Bibby (2007) conducted an extensive survey among 17 schools in the United Kingdom to determine the most common predictors for GCSE grades. We adapted the ten attitudinal predictors to explore the attitudes of our subjects. Positive attitudinal descriptors such as *enjoy*, *like* and *excited* recorded high average scores between 3.44 and 3.80. Feeling *worried* and *anxious* of not being able to do well in examinations attained averages between 3.44 to 3.66. This showed that in general, all the students were motivated and willing to push themselves to work hard to achieve good results in examinations. The results are summarised in Table 1.

To compare if the students from the SPM and O-Level backgrounds have different attitudes in studying mathematics, Chi-square tests were conducted for the two cohorts. The test results are summarised in Table 2.

Overall the SPM and O-Level students showed very similar attitudes. They differed only in four out of the ten attitudinal statements investigated as follows:

- I enjoy studying A-Level mathematics ($\chi^2 = 11.524$, p = 0.003).
- I like studying A-Level mathematics ($\chi^2 = 6.153$, p = 0.046).
- I find A-Level mathematics boring ($\chi^2 = 8.439$, p = 0.015).
- I find A-Level mathematics too difficult for me ($\chi^2 = 11.593$, p = 0.003).

The SPM background students reported a significantly higher degree of agreement to the first two statements and lower degree of agreement to the statements 'I find A-Level mathematics boring' and 'I find A-Level mathematics too difficult for me', revealing they have "better" attitudes for these four ranking for these four attitudinal statements than the O-Level students.

Table 1 Descriptive Statics for All Respondents – Ranking of Attitudinal Statements

Statement	*n*	Min	Max	Mean	S.D.
7.1 I enjoy studying A-Level mathematics.	200	1	5	3.80	.933
7.2 I like studying A-Level mathematics.	199	1	5	3.76	.939
7.3 I hate studying A-Level mathematics.	198	1	5	1.96	.942
7.4 I am excited to study mathematics in A-Level.	198	1	5	3.44	.915
7.5 I find A-Level mathematics boring.	198	1	5	2.21	1.004
7.6 I am frightened by the types of A-Level mathematical problems I have to solve.	199	1	5	2.94	1.173
7.7 I am anxious if I can do well in my A-Level mathematics examination.	198	1	5	3.43	1.163
7.8 I am worried that I might not achieve the grades I desire for my A-Level mathematics examination.	200	1	5	3.66	1.196
7.9 I find A-Level mathematics too difficult for me.	199	1	5	2.59	.990
7.10 I find A-Level mathematics easy.	195	1	5	2.71	.902

Table 2 Summary of Chi-square Tests – Attitude vs Academic Background

Statement	SPM[a]	O-Level[a]	χ^2-stats	*p*-value
7.1 I enjoy studying A-Level mathematics.	77.0	53.9	11.524	0.003
7.2 I like studying A-Level mathematics.	68.9	52.0	6.153	0.046
7.3 I hate studying A-Level mathematics.	2.5	6.7	4.091	0.129
7.4 I am excited to study mathematics in A-Level.	50.0	33.8	4.940	0.085
7.5 I find A-Level mathematics boring.	6.6	16.2	8.439	0.015
7.6 I am frightened by the types of A-Level mathematical problems I have to solve.	27.9	40.0	5.559	0.062
7.7 I am anxious if I can do well in my A-Level mathematics examination.	53.3	55.4	1.102	0.576
7.8 I am worried that I might not achieve the grades I desire for my A-Level mathematics examination.	60.7	6..2	3.52	0.172
7.9 I find A-Level mathematics too difficult for me.	13.1	18.7	11.593	0.003
7.10 I find A-Level mathematics easy.	17.4	9.7	3.673	0.159

[a] % Agree or Strongly agree with the statement

Language

49.4% of the respondents reported they used English for daily communication while 43.8% spoke Mandarin. The O-Level cohort rated better (mean = 7.56) than their counterparts (mean = 6.57) using a 10-point rating scale. Two sample T-test showed the mean difference between the two cohorts were significantly different ($t = -3.577$, $p = 0.000$). This might be a contributing factor that narrowed the gap of the examination performance of the two cohorts. The SPM students were perceived to be better by the lecturers but their lower command of English could affect their understanding of the examination questions, which had direct impact on their examination performance.

Tuition

It was interesting and delightful to discover that contradictory to our belief that students still take tuition, 95.5% of the students reported they did not. The reasons cited for not taking tuition were:

- 32.2% said the lessons provided were sufficient,
- 22.0% reported that they were confident with the lecturers,
- 20.3% mentioned tuition was costly; and
- 11.3% said they did self-study.

It appeared that the July 2017 intake were happy and confident with the teaching and lessons provided by the A-Level mathematics lecturers at Sunway College KL.

CONCLUSION

The two studies have helped us to gain unexpected but very useful and delightful insights to plausible reasons as to why students from the SPM and O-Level backgrounds did not perform significantly different in the examination. The common intrinsic motivations or attitudes they shared, such as *enjoy / like / excited* about mathematics appeared to be stronger driving forces for their common high achievement than their differences in academic background. They were more similar than we thought. And, it is certainly very motivating for the lecturers to know what we did not know before.

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PROMOTING STRATEGIC LEARNING APPROACH FOR PRE-UNIVERSITY STUDENTS IN MATHEMATICS

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Abstract

In many school settings, direct instruction by teachers could be the sole instructional feature to promote the mastery of strategies and to gain knowledge. However, direct instruction could not promote transfer of strategies across contexts and time. It also restricts opportunity to activate metacognition and to employ effective use of strategies. The study attempts to overcome these deficiencies by engaging in a series of instructional activities, which involve interaction between students and the instructor, role of students and questions asked by the instructor. The initial result shows that students employ more flexible strategies, have higher level of motivation, are much independent in solving a task and are better in communicating mathematical ideas at the end of the study.

Keywords: mathematical task, metacognition, strategy use, motivation

INTRODUCTION

In the history of classroom instruction from the 1970s to the early 21st century, direct instruction, such as a demonstration and lecture where teachers talk and students listen, was a main approach to transfer knowledge from teachers to students. Although evidence has suggested that direct instruction is effective for younger and low-achieving learners in knowledge acquisition and strategy use (Jones, Palincsar, Ogle & Carr, 1987), yet it may not promote strategic and self-regulation (cognitive and metacognitive) processes to improve mathematical problem solving (Montague, 2008). As learners have minimal opportunity to be strategic and independent in their learning, it is difficult for learners to transfer strategies used in one context to another context (Butler, Beckingham, & Lauscher, 2005). In addition, to be a strategic learner, the mediatory role of metacognition needs to be activated when effective strategy use is concerned (Paris & Paris, 2001).

The emphasis on two goals, self-regulated engagement in tasks and students' knowledge base and belief that support self-regulation, has produced promising outcomes as a way to succeed in dealing with some limitation of direct instruction (Butler, 2003). In this study, several instructional features are employed to achieve these goals (Butler, 1998): (1) students are supported to a range of cognitive processes central to self-regulation, (2) students are supported to complete tasks in a meaningful way, (3) social interaction between students and the instructor in developing students' self-regulation, (4) instructions are structured and explicit, and (5) instructions should be designed to promote metacognitive knowledge and positive beliefs among students.

METHODOLOGY AND PRELIMINARY FINDING

The experimental design is four parallel case studies embedded within a single-group design (the mode of instruction is one-on-one tutoring that involved four pre-university students). Two are local students and the other two are international students. Ages of these participants are from 19 to 26. These students failed the mathematics placement test prior to joining a pre-university programme at a private college. The number of sessions of tutoring completed by these students is between 8 and 14 and each session is about 30 to 45 minutes. Mathematical tasks come from their study guide provided by the pre-university programme. Content areas for tasks involve algebra, sequence and series, and business mathematics. For each session, completed mathematical tasks are photocopied and their behaviour (metacognitive and motivational perspective), and interaction with the instructor are recorded. At the end of each session, the instructor reflects what was provided to a student and writes it down.

There are three-fold instructional activities in these sessions, which are adopted from Butler (2003). They are:

1. collaboration between students and instructor: selecting a task, analysing the requirement of each task, employing appropriate approaches, evaluating outcomes, articulating task demands and strategy description;

2. collaboration among students themselves: where to start to solve a task, thinking through tasks, selecting strategies, articulating what is to be done next, self-monitoring and evaluating strategy; and

3. instructor asking questions: facilitating students' decision making built from what they know in terms of content knowledge and strategy use, promoting active reflection, solving tasks using multiple ways, promoting problem solving rather than telling them what to do, and providing clues when they are stuck.

Rich descriptions about task performance, strategy use, motivation and metacognitive is obtained throughout the study. The preliminary results show that these students improve in terms of task performance, metacognitive knowledge about tasks and strategies, motivational level, confidence in solving a task, and articulation of mathematical ideas at the end of the study.

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ESSAY-BASED ASSESSMENTS: PRE-U STUDENTS' PERSPECTIVE AND STRUGGLES

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Abstract

Students have been exposed to essay writing from primary to high school. However, they still find essay-based assessments a struggle at the pre-university level. To understand why this is so, 72 students from the Australian Matriculation Programme at Sunway College KL responded to a questionnaire that contained close and open-ended questions. A majority acknowledged the importance of prior knowledge as helpful in their current area of studies for essay-based subjects. Despite that, students found mastering answering techniques as well as memorisation challenging. As this study was conducted towards the end of their course, most students felt that greater support through guided practices contributed to an improvement in their performance. This implies that the lecturer has to take a proactive role while promoting student engagement in training them for essay-based academic writing, not only for pre-university assessments but also as preparation for their future undergraduate studies.

Keywords: essay, prior knowledge, practice support

INTRODUCTION

Based on constructivist learning theories, the student is "an active partner in the process of learning, teaching and assessment" (Struyven, Dochy & Janssens, 2003). Much research has been conducted regarding assessments and essay writing (Norton, 1990; Mahalski, 1992; Winarto, 2015). Most researches focus on effectiveness of assessments and learning strategies but there is a need to look at essay-based assessments in the context of pre-university education where students come from a variety of education backgrounds and assessment structures. The purpose of this study is to understand students' perspective on the value of prior experience and education background of students to their current area of studies in essay-based subjects, as well as common student struggles with essay-based subjects on the pre-university level and what support or strategies they consider useful.

METHODOLOGY

Students from the Australian Matriculation answered a questionnaire voluntarily. These students have completed at least seven months of studies and thus have a better perspective to give opinions and personal experience. A total of 72 students responded to the questionnaire that contained both closed and open-ended questions. Respondents' close-ended answers were automatically calculated (via Google Forms), while open-ended answers were analysed to discover emerging themes through grouping of keywords.

RESULTS

To understand the education background of the respondents, their Year 11 assessment background are categorised as follows: 63.9% – Sijil Pelajaran Malaysia (SPM); 29.2% – International General Certificate of Secondary Education (IGCSE); 4.2% – Others; 2.7% –International Baccalaureate (IB). A majority of 62.5% felt that their high school education provided some prior knowledge that helped in their current area of studies especially in essay-based subjects. In terms of language of instruction, 63.9% were taught in English; 26.4% in Malay; 8.3% in Mandarin; 1.4% in German. However, only 15.3% considered language was a challenge. By contrast, 76.4% identified "Mastering answer techniques" as their main challenge in essay-based subjects. When asked to give further explanation, many cited "memorising" as another major challenge. Almost all respondents felt that more detailed and directed guidance and practice could have assisted them. This is confirmed by the fact that 87.5% thought their competency in essay-based subjects have improved due to practices and exercises.

DISCUSSION

Based on the findings, it is quite apparent that despite perceiving prior experience as valuable, most students struggled with figuring out the proper answering techniques in essay-based assessments. It has been shown that guided corrective feedback can manifest improvements in writing skills and this is confirmed by the students' experiences (Gabinete, 2013). While the value of prior knowledge is indisputable, these experiences are varied and have to be strategically shaped to suit course requirements at the pre-university level and further into their undergraduate studies. In the earlier part of the year, students were not performing as well though they noticed an improvement towards the end. Krause (2001) noted that students must adjust their academic expectations as well as get help from examiners to demystify and clarify writing assessment since the grading system is often a mystery to students. The implication is that lower academic achievements in essay-based subjects early in the course should not discourage both students and lecturers. Concerted and directed effort is required on both parties, as per constructivist learning theories, to see an improvement in performance.

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AUTHENTIC TEXT VS CURATED TEXT: A CASE STUDY OF BUSINESS ENGLISH STUDENTS AT SUNWAY COLLEGE JOHOR BAHRU

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Abstract

One of the challenges students encounter in English as a Second Language (ESL) classroom is lack of motivation (Gilakjani, 2011). However, this is one of the vital keys to successful second language acquisition (Che Mat & Yunus, 2014). The use of authentic text in the classroom has a long history in which it is believed that it can effectively encourage learners in their learning process. This paper aims at reviewing the effectiveness of authentic text in motivating learners in their learning process. This research was conducted on 50 Diploma in Business Administration students at Sunway College Johor Bahru and it was found, almost 85% of the students surveyed were favourable towards the use of authentic texts in their Business English classroom. 91% of the students also stated that the usage of authentic texts would increase their motivation to learn and acquire the English language in the class. These findings suggest that the usage of authentic texts in an English for Specific Purposes class would be able to positively influence the students' internal motivation and lower their affective filter, thus, making the acquisition of English for Business more meaningful and impactful for them.

Keywords: ESL classroom, ESP, Business English, authentic text, motivation

INTRODUCTION

Before tertiary level, students learn the English language for six years in elementary school and five years in secondary school. Students learn English for two purposes, either it is in the curriculum or for future advancement (Ahmed, 2015). Thus, motivation is important for the learning process as it is the greatest factor affecting the learner's success (Che Mat & Yunus, 2014). The use of authentic text is claimed to function as a motivation drive as it proves that the target language is used as a real language in the real world. Therefore, it is vital to expose learners on how to target the language in the real world. Authentic material is the text taken from the real world and is not only for the purpose of language teaching (Abdul Hussein, 2014). The use of authentic text in the classroom is not a new issue. Research has been conducted to prove the effectiveness of authentic material in motivating students as it bridges the gap between the knowledge learned in the classroom and the real world. It is widely acknowledged that it helps learners to obtain the communicative competence in the target language as it proves the authentic function of the target language. Various research have been carried out to show the positivity of adopting authentic materials in the language classroom. Shoikova and Tikhonova (2014) conducted a research using authentic materials with the aim of assisting learners in developing the skills and their future professional activities. In addition, the positive effects of using authentic material in the listening class were proven by Zhafarghandi (2014). Ciornei and Dina (2015)'s research also revealed that using authentic text in class could increase the students' confidence in using the target language. Omid and Azam (2016), also described the effectiveness of incorporating authentic materials in motivating learners when learning a foreign language. Chan (2017) adopted authentic transcripts from the workplace in a Business English class and the results showed that learners found this authentic teaching material interesting, effective and motivating as compared to their previous course materials.

METHODOLOGY

This study was conducted on 50 Diploma in Business Administration students at Sunway College Johor Bahru. An online questionnaire of 19 questions which was adapted from *Investigating EFL College Teachers' and Learners' Attitudes Toward Using Authentic Reading Materials* in Misan (Ahmed, 2015), was the main instrument used in this research in order to gain information on students' attitudes towards using authentic materials in their class. The questionnaire asked a variety of questions on their own experiences in learning Business English and how the usage of authentic texts would be able to increase their interest level, motivation, comprehension, intrinsic feelings, as well as material preference.

FINDINGS

From our study, we found that from the majority of students surveyed, an overwhelming 91% showed positive reaction towards the usage of authentic texts with almost 100% of them strongly agreeing that real world texts would motivate them to read more materials outside of their prescribed texts and that the usage of authentic texts would make the class much more interesting and less intimidating. They also felt that real world texts would improve their overall English proficiency and would make them better prepared for their career compared to their current curated texts. They had also expressed dissatisfaction over their current Business English course materials, with 83% of them stating that it would not be similar to what they would be encountering in their career. In addition, 90% of the students agreed that authentic texts were much easier to understand compared to their usual curated texts. These findings suggest that students are becoming increasingly aware that most texts they encountered in their prescribed textbooks are not the same as what they would be encountering in their working environment and that they would be much engaged with the subject content if the texts are more relevant to their future career.

CONCLUSION

The benefits of using authentic texts in an ESP classroom are numerous based on the results. Currently, the texts used are curated and edited texts which has minimal impact in the students' acquisition of Business English. Thus, it would be ideal if future course materials could be modified to include authentic texts to maximise the learning potential of the ESP classroom to further enrich the teaching and learning experience.

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FOOD AND FEASTING: A STUDY OF HYBRID IDENTITIES AND MIXED CULTURES IN CHRISTOS TSIOLKAS' *THE SLAP*

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Abstract

One of the main means of social communication that we have are languages, music, arts and traditions. Gastronomy is another means through which we can discover our cultures and communicate socially. This paper will study the types of food and feasting depicted in *The Slap* by Christos Tsiolkas, after which the connection between types of hybrid identities, mixed cultures, food and feasting will be analysed. The role of food as a cultural depictor will be looked into and in studying this theme, Homi Bhabha's theory of hybridity will be applied. This theory was chosen because evidently, there is a strong connection between a human's innate need of food, especially culturally, to his or her roots and identity. It will demonstrate how food and feasting brings not only a mixture of culture, but a new culture altogether, by using Bhabha's notion of the *Third Space*.

Keywords: food, feasting, culture, hybrid, *The Slap*

INTRODUCTION

The study of mixed cultures has always revolved around the many ways in which mixed cultures are portrayed. However, in *The Slap*, it is evident that these mixed cultures have given way to new cultures and traditions made up of two or more cultures. This cultural need is further strengthened when one has migrated or gone to a foreign land, where food and feasting is not forgotten, but rather it is enhanced by the hybrid culture that has been created, having evolved through migration or mixed marriages. The characters in *The Slap* depict examples of hybridity through their food and also migrant or mixed-race families (Greek-Australian-Indian). The analysis focuses on how hybrid identities can come to be, through the study of the food and feasting that occurs in this novel, which is set in Australia.

METHODOLOGY

This research will study *The Slap* by Christos Tsiolkas, as well as delve into Homi Bhabha's Theory of Cultural Hybridity. Bhabha's theory involves the discussion of the *Third Space*, which is identified as a place where cultural exchanges happen. It is a thoroughly qualitative paper that will require making connections between food and feasting and hybrid identities. The discussion will be on the key notions behind hybrid communities within the discourse of cultural assimilation and food and feasting.

RESULTS

The result of the coming together of two cultures through food and feasting is a hybrid culture. The fusion of cultures need to be known as different from the parent cultures because they are unique and need to be acknowledged as such. This is because as is evident in *The Slap*, examples of a Greek-Australian-Indian hybrid is seen through gastronomy and feasting. This research has examined the examples and come to a conclusion that the hybrid culture presented in food and feasting is also an echo of the lives of these Greek-Australian-Indian people. The examples from this novel clearly show hybrid cultures through food and feasting because of the way the food is prepared, the ingredients used, food preferences and feasting manners. The people portrayed in the chosen novels now have created a culture of their own through a mixture of two cultures. These new cultures have come to be because of the *Third Space* that Bhabha extensively elaborates on in discussing his theory of cultural hybridity.

CONCLUSION

The outcome of this research shows that food and feasting plays a big part in the creation of hybrid identities as it is one of the aspects of human life that cannot be denied. The novel chosen also reflects this through a close application of Bhabha's theory of cultural hybridity. This means no hybrid culture will ever be the same as the one before it. It will now be known as something different.

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RISKY BUSINESS: ENGAGING STUDENTS IN THEIR ACADEMIC PROGRESS

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Abstract

In order to successfully transition into the Australian higher education system, students need to develop independent learning strategies and self-reflection skills. Whilst critical for success, these skills are often difficult for students to develop. Risky Business, was an action research project that sought to promote and develop these skills with a cohort of international students studying in a pre-university programme. This project piloted the use of a 'traffic light' self-reflection tool, and an 'independent learning cycle' resource to explicitly introduce, discuss and model reflective learning practices. The overarching aim was to improve student ownership of their learning. The data collected through an online skills audit, teacher observations, and the students' own written reflections reveal that, whilst students find self-reflection difficult, repeated use of the same tool can improve students' confidence and the accuracy of reflections. Overall, the results indicate that explicit modelling of independent learning strategies can improve student awareness of, and engagement in their academic progress.

Keywords: self-reflection, independent learning, transition pedagogy, action research

INTRODUCTION

In order to succeed in higher education, students must develop the skills that enable them to self-reflect, and to then identify and implement strategies for improvement. However, these independent learning skills are often difficult for students to develop, and international students often face the added challenge of having to develop these skills, whilst also transitioning to a new and often radically different learning environment (Ashton-Hay, Wignell and Evans 2016). The practice of reflection has long been recognised as a core aspect of effective learning (Kolb, 1984), and the inclusion of opportunities to reflect on academic development and learnings is known to improve the likelihood of successful transition into higher education (Kift, 2017). As Wingate (2007) has rightly argued, educators cannot simply assume that incoming students understand how to learn effectively, or that they have the skills to do this. Rather, educators working with students transitioning into higher education must create explicit opportunities for students to 'learn to learn'.

This Action Research (AR) project began to take shape in late 2016 in response to observations of that, Foundation Year students were unwilling or unable to engage in a formal 'students at risk' intervention process. Anecdotal evidence at that time suggested that many students were 'surprised' and 'shocked' to hear that they were at risk of not succeeding and appeared to lack the necessary skills needed to engage in an honest conversation about their academic performance and progress, and/or seek out the knowledge or support to improve.

METHOD

Burns (2009, p. 289) describes Action Research as "… the combination and interaction of two modes of activity – action and research". Burns argues that at the heart of this approach is the desire to improve outcomes by bridging "… the gap between the ideal (the most effective ways of doing things), and the real (the actual ways of doing things)" (Burns, 2009, p. 289). The 'gap' that this AR sought to bridge was between the ideal learner who is active, engaged and has well developed independent learning skills and the real learner who can be passive, disengaged and unclear on what is meant by independent learning.

In attempting to bridge the gap, this AR focused on investigating, trailing and evaluating a series of actions that positioned FY students as more active participants in their learning. The project was conducted in seven first semester units in the Business Faculty and involved 152 student participants.

Phase One: An online skills audit was administered to facilitate student reflection on study habits and to provide feedback on how these might increase or decrease the likelihood of success in FY (week 1).

Phase Two: Learning resources were developed to explicitly identify, model and promote independent learning skills. These were used in-class and referred to by teachers throughout the semester.

Phase Three: A 'traffic light' self-reflection tool was employed to facilitate student reflection on their understanding of concepts, their performance on assessment tasks and their study habits (week 7).

Phase Four: A second 'traffic light' tool was used to guide a student-teacher reflection and discussion on each student's academic progress (week 9).

In each phase, a mixture of qualitative and quantitative data was collected. This data included the online skills audit responses, teacher observations, student reflections and a student evaluation survey.

FINDINGS AND DISCUSSION

The existing study habits of participants and their expectations of the role of both learners and teachers was generally found to be inconsistent with the expectations of the FY programme. The explicit 'teaching' of independent learning and self-reflection did increase student awareness of these skills and whilst students were initially reluctant participants in self-reflection activities, the consistency and accuracy of their reflections improved with repeated use of the 'traffic light' tool.

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NON-LAW STUDENTS STUDYING A LAW SUBJECT: THEIR PERCEPTION AND ENGAGEMENT WITH LEARNING METHODOLOGIES

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Abstract

This study seeks to understand the challenges faced by non-law students in the Sunway-Victoria University Twinning Programme in studying business law which being a foundational subject is one that is compulsory. The research issue is to determine whether the current method of teaching using a combination of lecture-based learning (LBL) and problem-based learning (PBL) suits the learning styles of the students and is effective for student engagement with the subject. The results of the research conducted through a survey supported our expectation that the Combined Approach of the amalgamation of the LBL and PBL methods provide sufficient course related concepts and encourage students to undertake cooperative learning with course mates to develop content knowledge. The survey also yielded the existence of an expectation gap between students and the programme where the majority of the students perceived they have the capacity to reach the standard required, whereas this is not the outcome of the assessments especially in the area of analytical skills and academic conventions. The result of the survey will help us to develop strategies directed towards the improvement of those aspects where students are deficient.

Keywords: lecture-based learning, problem-based learning, combined approach

INTRODUCTION

Today, the study of law is no longer confined to those interested in pursuing a legal career. Business law is one among a number of law subjects that has been incorporated into degree programmes to satisfy the accreditation criteria of professional bodies. Additionally, an understanding of business legal principles/theories and practice provides students with a depth of knowledge and skill in the pursuit of their future careers especially in business and accounting. The added rationale for including this subject in the curriculum is the understanding that business school education is informed by the needs of the industry. Society recognises that the law impinges on every aspect of our lives, be it personal or professional and there is no human activity which the law does not touch on.

So our hope is that students will be able to engage with the law subjects that they are being taught (business law being one of them), critically analyse issues and develop problem-solving skills apart from embracing the ethical and lofty demands of the law through familiarity. In the narrow sense, the latter will constitute an element of a sound academic education and in the wider sense, it will also serve as the foundation for good citizenship.

The aim is not to turn our business students into lawyers but to introduce the legal environment to them to give them a more practical understanding of the law for future success in the business world. The idea is to facilitate their business decision making and to enable them to identify legal issues so as to reduce their exposure to liability in their careers or entrepreneurship (Braye, Preston-Shoot & Johns, 2006; Morris, 2007; Gerber, 2009).

NON-LAW STUDENTS' EXPERIENCE OF LEARNING BUSINESS LAW

Business law is a core subject taught during the second semester of students' first year at VU in Sunway. Students tend to look at this subject as an adjunct to the main purpose of their business studies and they already have a mental construct that this is a difficult subject, and thus, they feel disengaged with it (Dobson & Marsh, 2009). When non-law students study a law subject for the first time, they feel overwhelmed with the legal concepts, principles and jargon and the amount of reading required. Most of all, the majority doubt their abilities to grasp this discipline and struggle with how to master and pass this subject.

It has been recognised that non-law students require a different curriculum from that of students studying law purely for a legal career (Kariyawasam & Low, 2014). The teaching and learning approaches for these two categories of students have to be different as law students come to law schools with pre-existing attitudes, interest and qualities such as having developed linguistic skills and an aptitude for reading and writing. Non-law

students tend to perceive that these subjects are thrust upon them for which they feel ill-equipped as their aspiration or intention is to graduate with a business degree.

A different business law curriculum is drawn up that sets its context. A customised textbook that is more user-friendly is adopted, which explains in sufficiently simple terms the legal principles with a narration of the relevant case law to enable students to grasp how the legal principle is applied. Other learning resources include lecture materials with visually oriented diagrams and charts supplemented with video clips. Blended learning techniques and online quizzes that can be accessed via mobile phones are also incorporated to transform the classroom experience. Workshops are also conducted to facilitate learning, drawing attention of students to the approach in answering fact-based questions.

The business law subject at Sunway-VU is delivered by a combination of two one-hour lectures and a one-hour tutorial each week. The lecture materials and tutorial questions are available online. There is upward of 140 students per semester comprising of approximately 90% of local students with the remaining being international students.

The two hours of lectures otherwise known as Lecture-Based Learning is to impart the requisite knowledge of business law which researchers have shown is experienced by students as passive assimilation or passive learning. During lectures, lecturers give a conceptual framework to guide students for further reading. In tutorial classes, students undertake problem-solving as the methodology used is Problem-Based Learning. Students are given questions that relate to a factual business scenario and are then required on a group interactive basis to solve the legal problem in that context. Empirical evidence has shown that when students move from a passive environment of LBL to an active and participative mode in PBL, their success in comprehension and learning improves (Ewang, 2008). Generally, PBL aims at promoting deep rather than surface learning, while at the same time developing higher order thinking skills. The PBL method requires a combination of content and method, i.e. there is a demonstration of knowledge as well as an understanding of the law by a reasoned application of the law to the facts given in the question. Students take on an active role of being problem solvers for realistic problems. Through group work, they learn to work collaboratively to solve problems.

This study was predicated on efforts made to understand how students learn and whether our pedagogy meets their needs and facilitates deep learning as opposed to surface learning. This will also help lecturers to reframe their teaching by looking through the eyes of students (Monseau, 2005). Added to this, is the goal to determine whether our pedagogy satisfies good quality teaching because although the majority of students pass this paper, the programme considers that their performance can be further improved.

METHODOLOGY

A quantitative survey using a structured questionnaire adapted from Ewang (2008), as well as Poon and Kwong (2014), was conducted in Semester 2 of 2017. 51 out of 136 students who enrolled in the business law subject participated in the survey. Due to timing and logistical issues, the number of student participation was less than expected. The questionnaire was administered by the business law lecturer during tutorial classes. This method enabled the lecturer to give explanations wherever required and students to seek clarification as they responded to the questions.

RESULTS AND CONCLUSIONS

Perceptions of LBL, PBL and the Combined Approach (CA)

Perceptions of LBL, PBL and the CA were measured using the 5-point Likert Scale where 1 = Strongly disagree and 5 = Strongly agree.

- CA was the most preferred (mean = 3.78), followed by PBL (mean = 3.45). The least preferred was LBL (mean = 2.69).
- LBL was perceived as an inactive and passive approach (mean = 3.53) and boring (mean = 3.38).
- Students found PBL to be effective in enhancing teamwork (mean = 3.80) and helpful in improving their understanding (mean = 3.71).
- CA increased their knowledge (mean = 3.61) and competence (mean = 3.61).

Perception of Usefulness of LBL, PBL and CA

The students were asked to rate the usefulness of each approach using a 10-point scale where 1 = Not useful at all and 10 = Very useful. The results were compared using paired t-tests and summarised in Table 1.

Table 1 Paired t-tests for Usefulness of Different Approaches

Variable (mean)	Sample Size	*t*-value	*p*-value	Significant at α = 0.05?
LBL (5.64) – PBL (6.48)	50	−2.687	0.010	YES
LBL (5.53) – CA (6.84)	51	−5.165	0.000	YES
PBL (6.48) – CA (6.82)	50	−0.340	0.257	NO

The paired t-test results indicated that the Combined Approach was perceived as significantly more useful than the LBL approach but not significantly more useful than PBL.

The results point to the majority preference for the Combined Approach (62.7%), which is in tandem with the literature review that the dual approach of LBL and PBL is conducive towards student learning rather than either one alone. However, the statistics also show that students recognise that PBL cannot be studied in isolation without content knowledge and they are in favour of lectures being conducted as a contextual guide towards their acquisition of content knowledge although there was no significant difference in their preference for a Combined Approach and the PBL on a standalone basis. Under the Combined Approach, the passivity characteristic of LBL is neutralised and students benefit from the group dynamics of active involvement and self-directed learning since PBL begins with a problem.

Expectation Gap

The majority of students perceived that their command of the English language was sufficient to access the contextual understanding of business law as well as a critical engagement of the study of this discipline. On a 10-point scale, where 1 = Very poor and 10 = Excellent, the average rating for the command of oral English was 6.67 and written English was 6.74. In addition, of the eight common reasons associated with the difficulties and challenges of learning law, lack of proficiency in English was ranked seventh with 43.1% agreeing or strongly agreeing that this is the reason, whereas the difficulties of legal jargon was ranked first. This shows there is an expectation gap between students and the programme. Students expected to score high marks having regurgitated information gleaned from their lecture and textbook studies, whereas the programme considered that students had not correctly addressed the questions since the answers did not conform to academic conventions required in the study of law.

CONCLUSION

The conclusion from the survey is that students find the Combined Approach useful in providing content knowledge that had also formed a framework for their own personal study and also created opportunities for active learning and problem-solving on a collaborative and interactive basis. It would seem that students see the PBL method as a means of assisting them to relate to the subject matter in a purposeful manner thereby facilitating deep learning.

Notwithstanding that they had good perceptions of the Combined Approach which aided their learning, the overall performance of the cohort in question is reflective of past cohorts where the same pedagogy was applied. The level of their performance should definitely be enhanced if they saw the teaching methodology as adding value to their learning but the converse was true. The programme's assessment of this cohort like those of past cohorts showed that students have not demonstrated the disciplinary

characteristics required of this subject. Studying a law subject involves the mastery of certain 'threshold concepts' such as reading, specific disciplinary language and style of writing (Allen, 2007). Writing an answer to a business law question is unlike writing a business report. Past experiences have shown that the majority of students tend to merely recite the facts rather than analyse them which shows a lack of critical engagement with the issues. Also, they do not display a persuasive form of writing to put forward their arguments when they are called upon to apply the law. Effectively, this means they have not really answered the question fully albeit they may have been able to identify the legal issues and the applicable law. This is indicative that deep learning of the subject has not taken place. Perhaps, the fault does not lie with them because they are still in their first year of studies and their higher order thinking skills are not fully developed as yet.

The research therefore alerts academia to nurture their non-law students to understand the conventions required in the study of business law and any law subject for that matter, and to discern where their weaknesses may be so that they can fully comprehend that law is an argument and not a statement. Also, academia would do well to raise the awareness of students to not just learn the relevant law but also skills which would help them to reason. Legal problem-solving once mastered can equip our students with skills that are transferable to other disciplines of study (Ridley, 1994; Douglas, 2012). In any work environment, people have to ask questions, evaluate, analyse, assess, make decisions and solve problems.

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ENHANCING THE LEARNING EXPERIENCE OF COMPUTING STUDENTS THROUGH AUGMENTED REALITY (AR)

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Abstract

In recent years, education in the classroom has evolved and has become more digitally driven. Technology is now considered an integral tool for innovative teaching and learning methods. The millennial generation that educators encounter in classrooms are different from the generations before as they have greater exposure to technology from birth. Hence, it has become a greater challenge to keep students engaged in the classroom and to pique their interest in the areas taught. Development in the Augmented Reality (AR) technology has shown great potential of its use in education. This is especially so with the development of AR interfaces for devices such as laptops, smartphones and tablets which are accessible to both educators and students in their everyday lives. Augmented Reality technology has appealed to students of institutions that have experimented with it because it has the ability to seamlessly combine the physical and virtual worlds to provide a more exploratory learning experience compared to traditional chalk and board classrooms. This paper intends to investigate the ways in which Augmented Reality improves students' participation and engagement in the classroom and also assisting them with independent learning beyond the classroom.

Keywords: blended learning, foundation students, computing subjects, learning experience

INTRODUCTION

Augmented Reality has been a technology that was mainly used in areas such as the military and aviation in the past. With the boom of the gaming industry, Augmented Reality has managed to give avid gamers exhilarating experiences which draw a thin line between virtual and reality. The success of Augmented Reality in these areas has intrigued the possibility of paving Augmented Reality into education through integration with conventional learning methods.

Augmented Reality stems from Virtual Reality technology which was introduced by Morton Heilig when he created a device that gave the user the experience of riding a motorcycle through Brooklyn in the 1950s era (Rheingold, 1991). Augmented Reality will enable students to learn in a more visual and interactive manner because it has the ability to create a virtual environment that can be triggered with physical objects that can be controlled by educators and students. The concept of Augmented Reality typically uses camera-equipped devices which layers digital information onto real world at real time to make it possible to enhance reality (Teichner, 2014).

According to Fisher, Cavanagh, & Bowles (2005), the pertinent factors to be considered before introducing any technology in a classroom are how the chosen technological tool will improve the delivery of education services and its impact on students' performance. These are the primary concerns that were evaluated before deciding on this topic of investigation.

With the implementation of Augmented Reality through devices such as smartphones and tablets using apps which are easily downloadable, students are expected to gain a better understanding about the concepts taught by educators and at the same time experience a more engaging learning experience. Besides that, it aims to improve the retention rate of knowledge learnt in classroom environments. Apps that will be used for the purpose of this study will be Aurasma and Plickers.

RESEARCH METHODOLOGY

Research Type

A qualitative research methodology will be used for this research as it is more appropriate for the chosen topic. This will allow the research to be done in a more open and flexible manner. A hypothesis will be established once data collection is executed and analysed (Kumar, 2011).

Sampling and Data Collection

The chosen participants of this research will be students of the Sunway Foundation Programme that are taking Computer Science and IT subjects as their electives. Approximately 30 to 50 students will be a part of the investigation of evaluating the effectiveness of Augmented Reality in enhancing the students learning experience. The reason for a homogenous sampling group is because similar characteristics will ensure more reliable results. Due to a limitation of resources, non-random convenience sampling will be done for both the sampling groups and it should be adequate to produce reliable results. As there are no 'hard and fast' rules when it comes to sampling size, at the current point the proposed sampling size will be adhered to as the research is undertaken individually. The choice of data collection method to be applied may not permit the sampling of the entire foundation programme students within a short period of time (Aggrawal & Singh, 2001). The primary data collection methods used will be focus groups and questionnaires. Secondary data collection methods such as journals, articles and books will also be used as reference.

RESULTS

The final finding of the research paper 'Enhancing the Learning Experience of Computing Students through Augmented Reality', will seek to understand the effectiveness of using the technology for the improvement of teaching and learning methodologies. Besides that, the execution of the research will provide an insight into the features of technology that is most useful in delivering better quality education for Sunway Foundation Programme students. Educators who are keen to introduce Augmented Reality into their classroom will also be able to use it as a source of reference.

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A CASE STUDY: STUDENTS' PERCEPTION AND INTENTION TO USE BLENDED LEARNING

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Abstract

Blended learning has become increasingly prominent in higher education in recent years. Many universities have adopted this innovation to deliver course content. However, the process of embracing the new approach faces numerous challenges as it is difficult to gauge its effectiveness (Kintu, Chang & Kagambe, 2017). The purpose of this study is to examine students' perception on the use of blended learning and to assess their adoption of blended learning using the decomposed theory of planned behaviour introduced by Taylor and Todd (1995). It is hoped that the findings of this study would provide useful information to assist course instructors to better understand the students' attitudes and perception towards blended learning and enhance their decision in choosing more effective combinations of technologies to implement blended learning.

Keywords: blended learning, higher education, Decomposed Theory of Planned Behaviour (DTBP), technology adoption

INTRODUCTION

Blended learning is the thoughtful fusion of face-to-face and online learning experiences in which the strengths of face-to-face oral communication and online written communication are blended into a unique learning experience congruent with the context and intended educational purpose (Garrison & Vaughan, 2008). Blended learning has been widely adopted and changed the modes of course delivery, as well as course designs tremendously. The infusion of web-based technologies into the learning

and teaching process has created new opportunities for students to interact with their peers, faculty and course content, inside and outside of the classroom (Vaughan, 2007).

While there are myriad combinations of technologies that can be used for blended learning, it is important for course instructors to understand the impact or effectiveness of various emerging technologies with respect to the nature of the course, in order to optimise the potential benefits of blended learning (Graham, 2004). Hence, this research was conducted to examine the students' attitudes and perception towards blended learning based on the combinations of technologies used in one of their first year units. In addition, the students' intention to use blended learning as well as other plausible factors that may influence their adoption of blended learning were also investigated.

METHODOLOGY

This study was modelled after the Decomposed Theory of Planned Behaviour (DTPB) introduced by Taylor and Todd (1995). The DTPB explores attitudes, subjective norms, and perceived behavioural control by decomposing them into belief-based indirect measures (Sadaf, Newby & Ertmer 2012). This widely used and validated model provides a more precise understanding of behaviour intentions in both information technology and education studies (Taylor & Todd, 1995). Therefore, the DTPB model was selected to explain students' behaviour in this study.

A structured questionnaire was developed based on the constructs of the DTPB model. The study population was first year students enrolled in the Integrated Business Challenge course which used blended learning extensively. A total of 139 students participated in the survey in October 2016.

RESULTS AND CONCLUSIONS

The results indicated our subjects were generally positive with their blended learning experience. They were satisfied with the facilitating condition, found blended learning easy to use, had high self-efficacy, agreed with the relative advantage and compatibility to their lifestyle. They also had relatively high intention to embrace blended learning.

Regression Model (based on DTPB)

Behaviour Intention =

$$\beta_0 + \beta_1 \textit{Attitude} + \beta_2 \textit{Subjective Norm} + \beta_3 \text{Perceived Behavioural Control} + \varepsilon$$

Multiple regression analysis revealed that our regression model was significant (F = 61.744, p = 0.000, adj R^2 = 56.7%). The three predictors were all positively correlated with the dependent variable Behaviour Intention and were found to be significant in predicting Behaviour Intention (Table 1).

Table 1 Tests of Coefficients of Predictors for Model (1)

Model	Unstandardised Coefficients		Standardised Coefficients	*t*	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	564	.187		3.022	.003		
Attitude	436	.066	.486	6.631	.000	.579	1.726
SN	207	.056	.252	3.724	.000	.679	1.473
PBC	166	.057	.183	2.927	.004	.796	1.256

Our results revealed that blended learning was well-received by the students. It provided a good platform for learning to be more interactive, fun and made communication among the students and instructor much more effective. We highly recommend other instructors to explore the benefits of this innovation and hopefully, create a more conducive learning environment for our IT-savvy Gen-Z students.

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SOCIAL NETWORKING SITES (SNS) AS A LANGUAGE LEARNING PLATFORM

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Abstract

The Malaysian education system has been incorporating ICT in teaching and learning. The use of digital resources such as social media and blended learning tools greatly influences the pedagogy in institutions of higher education. However, limited studies are done in the area of linguistics and education. Hence, this paper aims to explore students' awareness on the implication of social networking sites (SNS) alongside its impact on their English language proficiency. Data was gathered from in-depth interviews and content analysis of 12 students' responses. The analysis suggests that while students are aware of the effects of SNS on their language proficiency, SNS are not used as a major platform in their language learning. Findings also discuss that SNS have a significant impact on their language proficiency. Interestingly, SNS do not only function as a communication tool but also provide an opportunity to move alongside with advancement to enhance the learning environment.

Keywords: social networking sites, English proficiency, Facebook, teaching and learning

INTRODUCTION

The advent of new technologies has insentiently created a world without boundaries where everyone is a global citizen. The status 'digital native' is made possible by various mediums of communication; with social media being one of the most prominent channels. Social media is most popular among the current generation of college students who are deemed as heavy users. These millennials engage in social networking sites to stay connected. Although a plethora of studies has been conducted on the use of social media in pedagogy, the integration of social media as part of teaching and learning in Malaysia remains relatively foreign. Familiar notions such as 'classroom technology' and 'blended learning' often includes the mention of e-Learning platforms like Moodle, eLearn, and Blackboard with the exception of social media. Therefore, the current study explores the efficacy of social media as a learning tool alongside its implication on English language learning of Malaysian college students. Largely focused upon the students' perspective, the significance of this research lies in its attempt to provide an insight into how social media functions can be leveraged and integrated into Malaysian pedagogy as part of classroom technology. Firstly, the researchers examined students' experience with social media and its language proficiency. Next, students' perceptions on social media as an effective learning tool were determined. Finally, the researchers unravelled the intrinsic connection between students' usage of social media and its implication on their language proficiency. Establishing this connection may then possibly provide some of the earliest leads in understanding the link between social media usage and significant pedagogical aspects in language learning such as student engagement.

LITERATURE REVIEW

The review of the literature commences with the definition of Social Networking Sites where the researchers choose to adopt the definition by Boyd and Elison (2008). The definition of English proficiency was also provided to establish the research scope. An extensive synthesis on the use of social media among college students was also included. Some of the motivation factors of social media usage among young college students are entertainment, social interaction and information-sharing. Contrary to popular belief, learners are fully capable of making SNS an effective learning tool when assigned a didactic space; indicating an opportunity for educators to utilise SNS as a medium of disseminating and sharing various learning resources conveniently.

METHODOLOGY

A total of 12 participants from the 2017 March Cohort of the Sunway Foundation Programme were recruited for this study. A Facebook group called, Mind Your English was set up for the purpose of this study. With the participants' permission, they were added into the Facebook group alongside the researchers who are also their English lecturers.

Following this, an in-depth interview was also conducted with four participants in the study to gauge their learning experience via SNS. The interactions on Facebook group and interview transcriptions were then analysed using the content analysis framework.

RESULTS AND DISCUSSION

Students' Usage of Social Media: Experience, Motivation and Perception

Experience: The more relaxed context of social media allows students to provide responses more freely. The latter responses will not likely be found outside social media due to social boundaries and formality.

Motivation: Students feel the need to belong to a community. In fact, both students highlighted in their interviews that it was slightly intimidating to share their thoughts openly with participants they are not well-acquainted with. Besides this, students also utilise social media to build rapport with their educators.

Perception: If social media was to be used as part of classroom technology, students would want to see a mixture of subject materials as well as glimpses of members' 'real life'. The reason for this is closely linked to the aforementioned students' motives of using social media. The combination of both educational resources and 'real world' creates a more effective learning environment as learning becomes more entertaining. Social media also seems to be more convenient for students.

Implications of Social Media Usage on Language Proficiency

Students are aware that their proficiency is shaped by their social media use. Various resources from texts to audio-visual materials are readily available on their SNS platform. Social media is also an avenue to express their thoughts and feelings freely through writing. Facebook statuses and Twitter indirectly encourage students to write more hence allowing them to practise their writing skills. With regards to students' perception of SNS on improving their confidence level, they felt that SNS are not a major factor.

CONCLUSION

Social Networking Sites are able to cultivate trust among its users which directly increases students' engagement. When students are at the receiving end and are open to learning from their lecturer, learning becomes easier. Students would also not feel hesitant to ask questions or even open up if they are facing challenges. Although there are concerns that there will be distractions on social media, students still acknowledge its convenience. Educators can leverage on this benefit and use it to improve language learning among students. The existing implications of social media may prompt educators to integrate social media in classrooms.

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ENRICHING STUDENTS WITH THE JIGSAW METHOD TO ACHIEVE 21ST CENTURY LEARNING OUTCOMES

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Abstract

Using the mix methods, this study explores the adaptation of the Jigsaw method to achieve 21st century learning outcomes from the students' perspectives. Lesson observations, surveys and interviews were employed in this study. This study showed that students have positive attitudes towards the use of the Jigsaw method. More specifically, the more hours the Jigsaw method was involved, the students felt a higher sense of achieving learning outcomes. Future improvements to increase the validity of the investigation were also discussed.

Keywords: cooperative learning, Jigsaw method, learning outcomes, 21st century learners

INTRODUCTION

According to the Malaysian Higher Education blueprint 2015–2025, it is encouraged that students from higher educational institutions be able to possess 21st century skills in order to increase their employability (Ministry of Education Malaysia, 2015). Syllabuses across the different pre-university programmes offered at Sunway College Johor Bahru such as Monash University Foundation Year programme, the Australian Matriculation

programme, or the Cambridge International A-Level programme, list over 30 skills or learning outcomes that their candidates will gain upon completion of the programmes. These learning outcomes aim to develop the students in acquiring the attributes of the 21st century learners (Ananiadou et al., 2009). This paper simplifies these learning outcomes into five categories, which are (a) Critical Thinking, (b) Problem Solving, (c) Creativity, (d) Collaboration, and (e) Communication.

However, learning models that are not up-to-date remain to be the main reason why such learning outcomes are not demonstrated by our students (John et al., 2013). Laal and Ghodsi (2011) cited that cooperative learning helps to develop effective learning communities in class. Wan and Lam (2015) mentioned that the use of the cooperative learning approach offers a paradigm shift from 'chalk and talk' individual learning to interactive, collaborative mode of social learning and teaching. Randall (2012) further elaborated in his book that all members of the group should be encouraged to express their ideas in many different ways and work under the learning environment where they can freely interact with one another.

The Jigsaw method was used as the cooperative learning activity as it was proven to be a useful technique to promote learners' participation and enthusiasm (Qiao Mengduo & Jin Xiaoling, 2010).

This paper aims at presenting the students' perceptions on how the Jigsaw method can assist them in achieving the 21st century learners' learning outcomes.

METHODOLOGY

The subjects of this research were 60 students from three different groups of the Australian Matriculation (WACE) programme and Monash University Foundation Year programme at Sunway College Johor Bahru. For this research, sampling was collected through the convenience sampling method. Results were collected by having the respondents answer a questionnaire with open-ended questions which was adapted from an education working paper written by Ananiadou et al. (2009).

The length of time that these three different groups were involved on a Jigsaw activity varied. On average, Group 1 spent one hour on a Jigsaw activity every three weeks. Group 2 spent one hour on a Jigsaw activity every two weeks. Group 3 spent one hour in a Jigsaw activity every week. The length of the implementation of the Jigsaw activities lasted for a semester of 14 weeks long.

RESULTS AND DISCUSSION
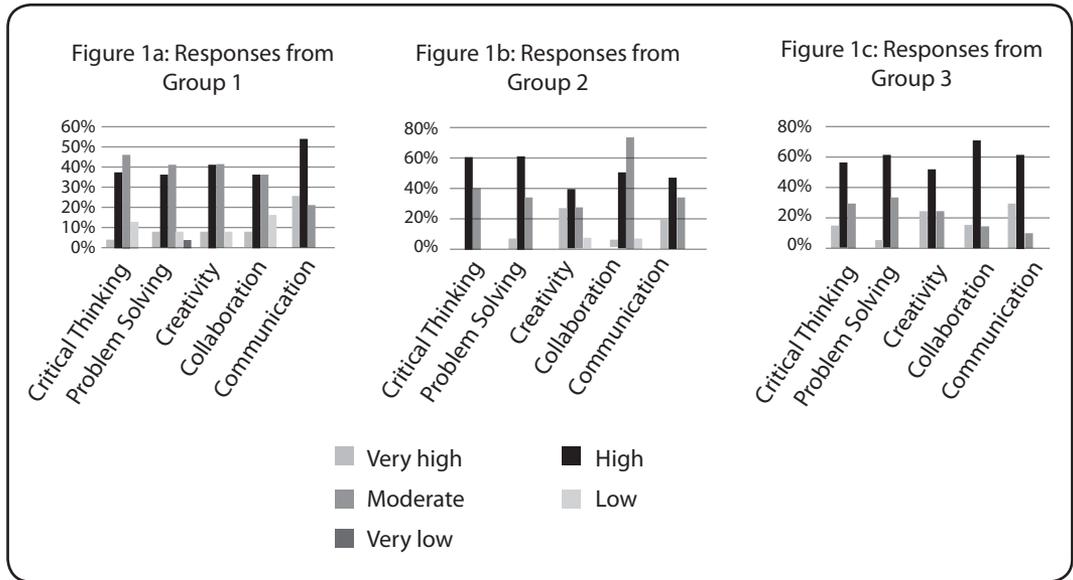
Figure 1: Collected responses from all respondents from different groups. Group 1 experienced one hour of Jigsaw activity every three weeks; Group 2 experienced one hour of Jigsaw activity every two weeks, and Group 3 experienced one hour of Jigsaw activity every week. Figures 1a, 1b, and 1c show that students believed that they could achieve a higher level of 21st century learning outcomes if more hours of Jigsaw activities were incorporated in the lessons.
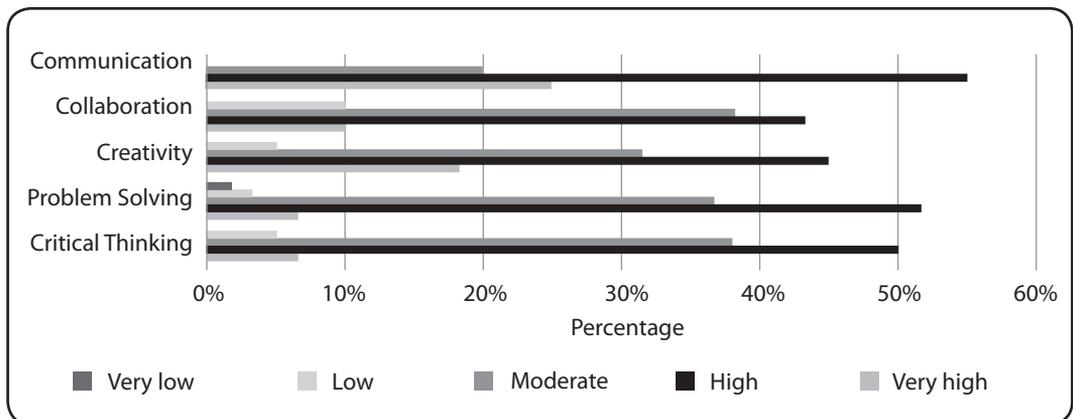
Figure 2: Collected responses from all respondents. All respondents had high levels of agreement that the Jigsaw method helped them in achieving 21st century learning outcomes.

According to Figures 1 and 2 presented on page 42, it can be observed that students generally have high levels of agreement that the Jigsaw method helped them in achieving the learning outcomes. The more hours of Jigsaw activity, the higher the level of agreement. Based on the focus group interviews, students also provided positive feedback towards the implementation of Jigsaw activities.

In order to improve the internal and external validities of the research design, probability sampling method across different programmes and a pretest-posttest design shall be conducted in a future study.

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TEACHING STYLE PREFERENCES AMONG PRE-U STUDENTS

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Abstract

This study was carried out to investigate Pre-U students' preferences in teaching style, particularly in Mathematics. The objective of this study is to find out which teaching method should be used by lecturers out of these four teaching styles: authoritative, facilitator, demonstrator and delegator. This study was conducted on Pre-U students at Sunway College Johor Bahru. The primary source for the preference of Pre-U students' study was collected through questionnaires. The data acquired was presented in the form of graphs. Then, the data was analysed and discussed. In this study, it can be concluded that students' preferences are playing a vital role in improving the quality of lecturing.

Keywords: teaching style preference, Pre-U students

INTRODUCTION

Every lecturer has their own teaching style, which determines the effectiveness and results of their teaching. This is because each student has their own learning style and ability in which the lecturer's teaching style must accommodate. According to Kyriacou (1986), teaching style is a combination of the personal way, manner and approach of a teacher in delivering their lessons to the learners, and the teaching style can be influenced by environment, the lesson and the learner. Teaching style is a collection of many attitudes and behaviours that the teacher employs to create the best possible conditions under which learning can take place (Wright, 1987). Here, the researcher states that personal behaviour and attitude are the key determinants in teaching style. Galton and Simon (1980) defines teaching style as "a set of teaching tactics in order to pass down information and knowledge". In this paper, four learning styles were focused on:

    1   Authoritative Teaching Style
    2   Facilitator Teaching Style
    3   Demonstrator Teaching Style
    4   Delegator Teaching Style

Authoritative Teaching Style

Authoritative teaching style is the teaching style where the teacher imposes the rules and regulations and yet encourages the students to work independently. The teacher will explain the rationale behind the rules and regulations.

Facilitator Teaching Style

The teacher with facilitator teaching style focuses more on interactions between the teacher and students. The teacher leads and directs students in their teaching by asking questions, suggesting certain alternatives and exploring a number of options (Grasha, 1996).

Demonstrator Teaching Style

Demonstrator teaching style is also known as personal model teaching style. The teacher will be the role model by demonstrating skills and this teaching style is teacher-centred. Based on Grasha (1996), the demonstrator teaching style uses personal examples and paradigms. Here, the teacher will be the main source of information for the students.

Delegator Teaching Style

The students are given a complex project to solve as their learning process. The teacher will play the role of consultant, consulting students regarding their learning project. Pajares (1992), stated that the students are able to learn more using this method than just specific course topics as they must be able to cooperate and work with the other students. The teacher will work together with students as a consultant to solve the complex project.

METHODOLOGY

The respondents of this study were students from Sunway College Johor Bahru who had taken Mathematics at Pre-U level (A-Level, Monash University Foundation Year (MUFY), and Australian Matriculation (AUSMAT)). The respondent sample was chosen by using simple random sampling. 65 respondents were involved in this research who gave written responses on questionnaires distributed to them. 18 AUSMAT, 16 MUFY and 31 A-Level students were selected for this study. All respondents had taken the Mathematics course offered in Sunway College Johor Bahru. The research instrument

that was used to collect the data was a questionnaire. This questionnaire contains 28 questions in total which is relevant to the objective of the research. The questionnaire that was used for this research was adapted from Chemaline (2011). This questionnaire contains 25 questions, where the first question required the background information of the respondents. The other 24 questions are to analyse the teaching style that the respondent preferred.

RESULTS AND DISCUSSION

Table 1 shows the results of the survey conducted among Sunway College Johor Bahru Pre-U students regarding their teaching style preference. Based on the survey conducted, on average 33.63% Pre-U students, 33.60% MUFY students, 29.96% AUSMAT students and 33.96% A-Levels students prefer the demonstrator teaching style. MUFY and A-Levels students do not prefer the facilitator teaching style, whereas AUSMAT students do not prefer the delegator style. The Malaysian students are taught using teacher-centred techniques during their primary and secondary education. This is supported by Ismail et al., (2018), who states that this is because "in Malaysia, the culture of 'spoon-feeding' during primary and secondary school and an examination-oriented curriculum in the education". Therefore, the students prefer the same method and are more dependent on teachers even though they are in tertiary education, (Keat et al., 2011). Rao et al., (2000) and Lim (2001), found that the learning theories and models which are developed in western countries might not be suitable to be practiced in eastern countries. This has been supported by Holtbrugge and Mohr (2010). The researchers identified that learning style preference varies according to an individual's cultural values.

Table 1 Teaching Style Preferences among Sunway Johor Bahru Pre-U Students

Style	MUFY		AUSMAT		A-LEVELS	
	Number	Percentage (%)	Number	Percentage (%)	Number	Percentage (%)
Authoritative	56	22.40	55	21.40	99	23.19
Facilitator	51	20.40	60	23.35	87	20.37
Demonstrator	84	33.60	77	29.96	145	33.96
Delegator	59	23.60	65	25.29	96	22.48

CONCLUSION

The main purpose of the study is to find out the most preferred teaching style among Pre-U students of Sunway College Johor Bahru. This study concluded that the majority of Pre-U students preferred the demonstrator teaching style.

APPENDIX: QUESTIONNAIRE

Teaching Style Preferences Among Pre-U Students

This study is conducted to survey the teaching style preferences for Mathematics among Pre-U students.

Instruction: Read the following questions carefully and choose a more suitable answer corresponding to the question.

1   What is your programme of study?

AUSMAT ☐   MUFY ☐   A – Levels ☐

Level of agreement

1 – Strongly Disagree   2 – Disagree   3 – Neutral   4 – Agree   5 – Strongly Agree

No.		Level of agreement				
		1	2	3	4	5
2	The lecturer should instruct students to work by themselves in the class.					
3	The lecturer should provide learning tasks for small groups of students.					
4	The lecturer should monitor closely students' assignments or class work.					
5	The lecturer should step back and become the facilitator.					
6	The lecturer should make sure that students feel good about his/her teaching.					
7	The lecturer should provide a lot of hands-on tasks for students.					
8	The lecturer should provide possibilities for students to visualise what they have heard, seen or read.					
9	The lecturer should use a lot of visuals (such as pictures, mind maps, graphics, wall charts, and videos) in their teaching.					
10	The lecturer should allow students to talk to themselves (out loud or in their head) to better understand what they are learning.					
11	The lecturer should insist that students participate in class/group discussions.					
12	When teaching something new and difficult, the lecturer should lecture the whole class, standing in front of the black/white board.					

No.		Level of agreement				
		1	2	3	4	5
13	The lecturer should expect students to strictly follow rules and regulations set by the institution and by themselves.					
14	The lecturer should teach according to the students' learning needs.					
15	The lecturer should use creative ideas in their teaching.					
16	The lecturer should be concerned about curriculum content and follow his/her lesson plans strictly.					
17	The lecturer should give students clear guidelines and instructions for carrying out difficult learning tasks.					
18	The lecturer should teach impersonally, focus more on facts and data rather than his/her own experiences.					
19	The lecturer should use tests to grade students only on details and factual knowledge.					
20	The lecturer should use personal experiences, practical exercises (hands-on activity) and overviews in their teaching.					
21	The lecturer should allow his/her students to socialise and report personal experiences.					
22	The lecturer should use tests to grade students on general concepts.					
23	The lecturer should insist that students reflect and think things through before they give answers to begin a task in the class.					
24	The lecturer should teach in a logical sequence.					

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DETERMINANTS OF STUDENTS' MOTIVATION: AN IMPACTFUL TEACHER

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Abstract

Higher education institutions have a majority of students whom are Millennials. The characteristics of this generation is unique and very much different from previous generations. As lecturers, we often come across students whom with time are not as motivated to continue learning. Whereas, some students are not motivated to learn from the very beginning. A lack of motivation by students most often adds to the educators' frustration because the main objective of an educator is to produce students who have interest and knowledge in their subjects. The outcome of this research paper will be a guideline to lecturers on improving teaching pedagogies and approaches where applicable, based on determinants that drive students' motivation so that we can be more impactful educators by further enhancing the learning-teaching experience. If the motivation determinant is within the control of educators, lecturers can put in more emphasis on that particular determinant. This paper focuses on both intrinsic and extrinsic motivations. Intrinsic motivation refers to behaviour that is driven by internal rewards and self-satisfaction, whilst extrinsic motivation refers to behaviour that is driven by external rewards such as money, fame, grades, and praise. Primary data was used to gather information from students throughout three pre-university programmes. The outcome is in line with the characteristics of the current generation. Students ranked that having attractive and easy to understand notes, enthusiastic lecture delivery and feedback from lecturers as the top three most impactful determinants. From this paper's results, it can be concluded that lecturers are key contributors in enhancing student's extrinsic motivation when it comes to learning. Intrinsically however, students are highly motivated when they challenge themselves to achieve personal goals. Although there are contradicting studies on correlations between extrinsic motivation and intrinsic motivation, latest studies support that extrinsic motivation can enhance intrinsic motivation. This is applicable to our current situation as we have students from the current generation in higher learning institutions. Hence, it is believed that both

significant intrinsic and extrinsic determinants are correlated when viewed as a whole picture. Lastly, after the results were tabulated, students were asked to give suggestions and more research was done on how lecturers could improve on the top three extrinsic determinants.

INTRODUCTION

Millennials are a unique and influential group whose behaviour is often discussed but not fully understood (Smith, 2012). Students from this generation are the biggest occupants of higher learning institutions now. However, unlike prior generations, students now are deemed to have different points of view, perceptions, drives and motivating factors. As mentioned, millennials are said to be unique (Carlson, 2005) because they are more family-centric, ambitious and optimistic and prefer different learning styles as compared to prior generations. However, a potential downside of millennial students is that they are always looking for something interesting, new and better if they are bored with what they are currently doing (Kane, 2017). This also means if they are motivated they will give their all and leave when they lose interest. This is also a generation that needs affirmation and recognition on achievements. As observed in classrooms, it is quite often that lecturers come across students who start out very ambitiously but lose motivation with time and eventually may end up with students not pulling themselves up to do better, giving up on examinations or even dropping the subject all together.

This research is designed to investigate determinants of students' motivating factor. Several theories on motivation and how students react to situations were considered for this study, such as McGregor's Theory X and Theory Y, Maslow's Hierarchy of Needs and Herzberg's Two-Factor Theory. Herzberg's Two-Factor Theory was used as a basis to this research and questionnaire. Frederick Herzberg (1984) separates motivation into two categories; intrinsic and extrinsic. Deci defined intrinsically motivated behaviours as those that are engaged in for their own sake, in other words, for the pleasure and satisfaction of performing them (Deci, 1971). These are the activities that people voluntarily perform in the absence of material rewards or constraints (Deci & Ryan, 1985), while extrinsic motivation is driven by external rewards. In order to motivate employees, they should be given interesting, fulfilling work in which they can take pride in.

Hence, the objective of this research is to aid lecturers to further understand their students' driving factor and to help lecturers be more impactful mentors. Past experiences and feedback from lecturers concluded three groups of learning styles in students. Firstly, there are students who are consistently motivated to do well in their subjects. Secondly, students who start off strong but have declining grades with time and lastly, students who have an inconsistent pattern when it comes to showing interest in learning. From the results of this research, lecturers may be able to effectively motivate students to continue in persevering throughout the duration of the programme. Outcome from this research may also help decrease failures in examination and student's retention from subject or programme.

METHODOLOGY

Primary data was used for this research. A survey was done on 66 students who are enrolled in the following courses: Cambridge A-Levels (ALE), Australian Matriculation (AUSMAT), and Monash University Foundation Year (MUFY) at Sunway College Johor Bahru. Students were given a simple questionnaire by several subject teachers and were briefed to rank the most impactful motivating factor to the least impactful motivating factor in descending order. Each student was only allowed to participate in one survey to avoid overlapping of results as surveys were done by different subject teachers in the same intake to ensure adequate sample size. Rankings were done on two groups of motivations according to the Hertzberg's theory (Intrinsic and Extrinsic Motivations). Students were told to rank the most motivating determinant in the intrinsic group and to do the same for the extrinsic group. Three intrinsic motivating factors and nine extrinsic motivating factors were presented for ranking.

RESULTS

Table 1 Percentage of Each Determinant According to Intakes

Intakes / Determinants	ALE January 2017	ALE March 2017	ALE March 2018	AUSMAT September 2017	MUFY January 2018
Intrinsic Motivation					
Challenge myself to achieve personal achievements	42%	100%	100%	46%	61%
Competing with peers	32%	0%	0%	8%	28%
Pride after achieving goals	26%	0%	0%	46%	11%

Intakes Determinants	ALE January 2017	ALE March 2017	ALE March 2018	AUSMAT September 2017	MUFY January 2018
Extrinsic Motivation					
Feedback from lecturers on performance	11%	0%	0%	21%	17%
Enthusiastic delivery of subject by lecturer	5%	50%	100%	17%	0%
Attractive and easy to understand notes	26%	50%	0%	33%	39%
Good relationship with lecturers	0%	0%	0%	0%	11%
Rewards	21%	0%	0%	4%	0%
Working in teams (study buddy)	16%	0%	0%	13%	6%
Recognition of achievements from family	10%	0%	0%	12%	17%
Recognition of achievements from peers	11%	0%	0%	0%	0%
Recognition of achievements from lecturers	0%	0%	0%	0%	10%

The table above was tabulated according to intakes and results are shown in percentages to enable comparison as number of students in each class differs. As seen above, amongst the three intrinsic motivations, more than 50% of students ranked challenging themselves to achieve personal achievements as their highest motivation. For extrinsic motivation determinants, it was clear that lecturers play a crucial part in motivating students' learning. Majority of the students ranked enthusiastic delivery of lecture by lecturers as the most impactful determinant of motivation. This is consistent with prior studies done by (Keller, Morger & Hensley, 2014). This is followed by attractive and easy to understand notes prepared by a lecturer as motivation when it comes to continued learning. Thirdly, feedback from lecturers on student's performance was also one of the highly ranked determinants. A small number of students also stated that recognition from family on their achievements was their biggest motivation in learning. The rest of the determinants were not as significant to this research. Limitations from this method is that smaller populated classrooms have a significant increase in percentage for certain determinants as compared to a bigger-sized classroom. This may lead readers to believe that many students have ranked a certain determinant based on the high percentage figure.

CONCLUSION AND DISCUSSION

From the results obtained, it can be seen that lecturers play a big part in motivating students to continue having interest in their subjects. As mentioned earlier, affirmation and needing to keep things interesting is a key driving factor for our current students. Besides that, being motivated by extrinsic factors may lead to or enhance being motivated internally. Lecturers can aid how students feel about themselves by impacting them externally. Although other external determinants were provided in the survey, when it comes to learning motivation, it is clear that lecturers play a very big part. Therefore, it is important for lecturers to constantly evolve and be innovative. How to be an impactful lecturer that motivates students? Students' discussion and more research done after the results were tabulated, highlighted a few key points that can be considered by lecturers. When it comes to enthusiastic delivery of subject, the lecturer's facial expression in class sets the tone of the class. Besides that, chapters that are associated to real-time examples and prior knowledge are very much appreciated by students. When it comes to having attractive and easy to understand notes, lecturers can consider keeping notes simple, embracing space, showing contrast and separating sections clearly. Lastly, lecturers should be aware of the difference between recognition and feedback. Recognition such as praise is meant to be encouraging but it can actually convey an educator's low expectations. In fact, this determinant was the least scoring determinant in the extrinsic motivation category. Feedback on the other hand should be given throughout learning, making it personal and linking feedback to set learning and behaviour goals. To conclude, with just a few changes to adapt to the current generation's needs, there is a significant change in students' motivation in learning. At the end of the day, having highly motivated students can lead to highly motivated lecturers, looking forward to continue inspiring young minds.

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FACTORS INFLUENCING STUDENTS' ENROLMENT IN ACCOUNTING AND FINANCE

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Abstract

In recent years, the number of students enrolling into accounting and finance-related subjects or courses have increased. Past studies have shown that personal interests, career opportunities and social influences are key contributors towards a student's decision to choose accounting and finance courses. The objective of this study is to identify the factors contributing to students' enrolment in the accounting and finance course in the Australian Matriculation programme in Sunway College. This quantitative research examines the relationship of variables, such as, personal interest, job prospect, as well as social influence on students' decision in choosing the Accounting and Finance ATAR Year 12 subject.

Keywords: accounting and finance, personal interest, job prospect, social influence

INTRODUCTION

In the past decade, a number of studies have been conducted to examine the factors influencing the students' choice of accounting as a major. Some of these studies were conducted in developed countries, for example, in Australia (Sugahara, Boland & Cilloni, 2008) and in the United States (Porter & Woolley, 2014); in developing countries such as Kuwait (Alanezi et. al., 2016), Iran (Dalcı et. al., 2013), Malaysia (Ali & Tinggi, 2013) and

Botswana (Wally-Dima, 2013). However, there are limited studies conducted in Malaysia on pre-university students. This research is to examine the factors influencing students' enrolment in the Accounting and Finance ATAR Year 12 subject. The variables identified are personal interest, job prospects, as well as social influence.

LITERATURE REVIEW

A number of studies have been conducted to examine the factors influencing students' selection of accounting as a major course of study at a tertiary level (Sugahara, Boland & Cilloni, 2008; Porter & Woolley, 2014; Alanezi et. al., 2016; Dalcı et. al., 2013; Ali & Tinggi, 2013), and in Botswana (Wally-Dima, 2013). These researches had pointed out some of the most common factors which would affect students' choice of accounting as a major course; which are personal interest, job prospects and social influence.

Personal Interest

Personal interest includes interest in the subject matter, the subject field and the opportunity for professional advancement (Edmonds, 2012). Past studies showed that one of the most significant factors that influences students' choice of major is their interest in the subject (Dynan & Rouse, 1997; and Lewis & Norris, 1997). Based on the research conducted by Fortin and Amernic (1994), interest and aptitude for the subject matter is one of the significant factors behind the students' choice of accounting as a major.

Wally-Dima (2013) had concluded that some of the major factors influencing students to choose accounting includes personal interest in the subject as well as a passion for the accounting profession. Moreover, research conducted by Alanezi et al. (2016) had shown that being an interesting subject was one of the three most important factors influencing students' choice of an accounting major.

Job Prospects

Over the years, the accounting profession is ranked as one of the most preferred careers by the public and private university students in Malaysia (Samidi & Tew, 1995; Said et al., 2004; Ghani et al., 2008). Job prospects, such as career opportunities and future earnings, have the highest and most significant influence on the students' choice of accounting as a major course (Lowe & Simons, 1997; Dalcı et al., 2013; Ali & Tinggi, 2013; Alanezi et al., 2016).

A study conducted by Uyar, Gungormus and Kuzey (2011) among Turkish University students had shown that students who are interested to work in the accounting field assume that accounting provides good job opportunities and the field matches with their personal interest. Porter and Wooley (2014) conducted a research on accounting and non-accounting students in a US university to examine the factors that affect students'
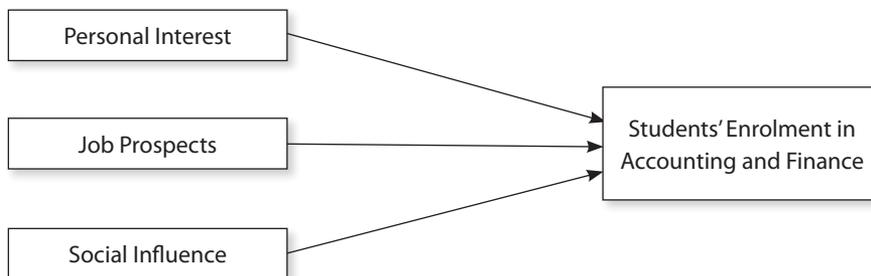
choice of an accounting major and they found that accounting is seen as a major that will provide extrinsic benefits such as financial benefits and career opportunities.

Social influence

Social influence includes influence from family members, teachers, peers and mass media (Ali and Tinggi, 2013). According to Ali and Tinggi (2013), parental influence is an important factor affecting students' achievement, their future study as well as their choice of major, particularly in Asian countries. Research from Alanezi et al. (2016) and Ali and Tinggi (2013) had shown that parental, teacher and peer influence were the least important factors influencing students' choice of accounting as a major. Based on Macionis and Jansson (2000), mass media is a significant factor influencing students' choice of major. Besides, Linda (2006) had found out that mass media, such as the internet, television and radio advertisements influence students' behaviour in their selection of major, because students can obtain various information regarding universities, courses offered and potential fields from these sources before choosing their major.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

The conceptual framework for this study lays out the foundation in which the whole research is built on. Understanding the associations and the relationships of the variables enables hypotheses to be developed for the purpose of this study, and then to be tested on their significance (see Figure 1).

Figure 1 Conceptual Framework

In this research, a total of 3 hypotheses were formulated based on the objective of the research and research questions.

Hypotheses

> **H1:** There is a relationship between personal interest and students' enrolment in Accounting and Finance.
> **H2:** There is a relationship between job prospects and students' enrolment in Accounting and Finance.

H3: There is a relationship between social influence and enrolment in Accounting and Finance.

Research Questions

1 Is there a relationship between personal interest and students' enrolment in Accounting and Finance?

2 Is there a relationship between job prospects and students' enrolment in Accounting and Finance?

3 Is there a relationship between social influence and students' enrolment in Accounting and Finance?

METHODOLOGY

A total of 268 students who enrolled in Accounting and Finance from Australian Matriculation (AUSMAT) completed an online questionnaire in class. The questionnaire, which has been adapted from a sample questionnaire used from Ali & Tinggi (2013), has undergone a pilot study to test the validity of the variables. This questionnaire composed of two parts. The first part is about the students' demographic profile and their background. The second part has all three variables in the research model with 14 statements in total. General information includes gender, age group, highest education level, ethnic group. Background information is previous knowledge of Accounting and Finance. Nominal scale is used for obtaining the profile of the respondents. The second part consists of questionnaires which obtain information on personal interests, job prospects, social influence and students' enrolment in accounting and finance. These sections used the Likert Scale to examine the degree of the respondents' agreement or disagreement with the statements given based on a 4-point scale. This scale ranges from 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree. The responses of respondents are summed up and analysed to understand the variables of the research (see Table 1).

Quantitative research was employed where data was gathered through structured questions to explain the variance in the dependent variable and to understand the relationship between the independent variables and the dependent variables. Data obtained in this research were from both primary as well as secondary sources. Primary data is the main source to determine what factors influence students' enrolment in the Accounting and Finance subject. Therefore, it helps the data analysis to be more reliable, authentic and objective (Sekaran & Bougie, 2016). In this study, secondary data was collected from online journals and books on factors influencing students' enrolment in accounting and finance-related courses. Data gathered through the questionnaires were analysed via Statistical Package for Social Sciences (SPSS) software version 20.0.

Table 1 Summary of Questionnaire Layout

Variables	No. of Items	Question No.
First Part		
Gender	1	1
Age Group	1	2
Nationality	1	3
Ethnic Group	1	4
Highest Education Level	1	5
Previous Study in Accounting and Finance	1	6
Second Part		
Personal Interest	5	7–11
Job Prospects	5	12–16
Social Influence	5	17–21
Students' Enrolment in Accounting and Finance	5	22–26

DATA ANALYSIS AND DISCUSSION

The first analysis of the chapter presents the demographic profiles of the students in this research study. The response rate is at 100 %. Table 2 illustrates the distribution of students according to demographic factors below.

Table 2 Summary of Demographic Profile

Demographic Variables		Frequency	%
(a) Gender	Male	99	37
	Female	169	63
Total		268	100
(b) Age Group	15–16	9	3.4
	17–18	233	86.9
	19–20	25	9.3
	Above 20	1	4
Total		268	100
(c) Nationality	Malaysian	263	98.1
	Others	5	1.9
Total		268	100

Demographic Variables		Frequency	%
(d) Ethnic Group	Bumiputera	11	4.1%
	Chinese	237	88.4%
	Indian	14	5.2%
	Others	6	2.2
Total		268	100
(e) Highest Education Level	SPM	183	68.3
	IGCSE	72	26.9
	O-Level	6	2.2
	UEC	1	0.4
	SIS	6	2.2
Total		268	100
(f) Previous Study in Accounting and Finance	Yes	137	51.1
	No	131	48.9
Total		268	100

The results for the Cronbach's alpha for all the variables in this study (see Table 3) showed that all the variables meet minimum criteria to be accepted as internally consistent and reliable.

Table 3 Reliability of the Variables

Variables	No. of Items	Cronbach's Alpha	Result
Personal Interest	5	0.833	Acceptable
Job Prospects	5	0.607	Acceptable
Social Influence	5	0.601	Acceptable
Students' Enrolment in Accounting and Finance	5	0.859	Acceptable

The second analysis is a Factor Analysis by measuring it with Kaiser-Meyer-Olkin Measure (KMO) of Sample Adequacy.
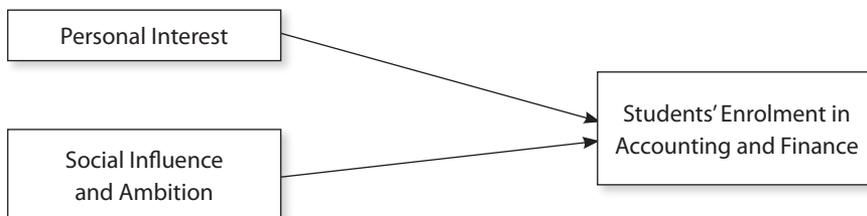
Using Factor Analysis, Personal Interest Q1, Personal Interest Q2, Personal Interest Q3 and Personal Interest Q4 are maintained and combined with Job Prospects Q1 as one factor called as Personal Interest, while Personal Interest Q5 is dropped. As for Job Prospects, Q3 and Q4 did not pass the Factor Analysis test. Social Influence Q1, Social Influence Q2

is combined with Job Prospects Q2 into a renamed factor called Social Influence and Ambition, with a KMO of 0.85 (see Table 4).

Table 4 Factor Analysis Results

	Rotated Component Matrix[a]	
	Component	
	1	**2**
PI2	.865	
PI1	.853	
PI4	.783	
PI3	.709	
JP1	.561	
SI1		.838
SI2		.792
JP2		.539
Extraction Method: Principal Component Analysis		
Rotation Method: Varimax with Kaiser Normalisation[a]		
[a]Rotation converged in 3 iterations		

At this point of the research, the conceptual framework after Factor Analysis is modified (see Figure 2).

Figure 2 Modified Conceptual Framework

In exploratory data analysis, frequency and normality test will be used to know the distribution percentage among the sample group and identify whether the data is normal or not normal, symmetrical or asymmetrical, and recognise the mean and median of each variable (see Table 5).

Table 5 Summary of Descriptive Statistics for Each Variable

Variables	Mean±Standard Deviation	Min	Max	Range	Skewness	Kolmogorov-Smirnov Test of Normality
Personal Interest (PI)	2.95 ± 0.66	1.2	4	2.8	−0.201	0.163
Social Influence and Ambition (SIA)	3.10 ± 0.59	1.67	4	2.33	−0.099	0.081
Enrolling in Accounting and Finance (EANF)	3.10±0.42	1	4	3.0	−0.95	0.144

Personal Interest

The mean level of personal interest among the valid 268 students is 2.95 with a standard deviation of 0.66 (2.95 ± 0.66). The maximum and minimum levels are 4 and 1.2, respectively. The range is 2.80. The median level is 3 indicating at least 50% of the students have personal interest that is more than 3. Since the mean and median values are very close, perhaps the data is symmetrical. The skewness value is −0.201 which is within ±1, hence the data is symmetrical. The Kolmogorov-Smirnov test of normality on personal interest gives a p-value of 0.163, which is more than 0.05. Therefore, the data is normally distributed.

Social Influence and Ambition

The mean level of social influence and ambition among the valid 268 students is 3.10 with a standard deviation of 0.59 (3.10 ± 0.59). The maximum and minimum levels are 4 and 1.67, respectively. The range is 2.33. The median level is 3 indicating at least 50% of the respondents have social influence and ambition that is more than 3.0. Since the mean and median values are very close, perhaps the data is symmetrical. The skewness value is −0.099 which is within ±1, hence the data is symmetrical. The Kolmogorov-Smirnov test of normality on perceived value gives a p-value of 0.081, which is more than 0.05. Therefore, the data is normally distributed.

Enrolling in Accounting and Finance

The mean level of enrolling in accounting and finance among the valid 268 students is 3.10 with a standard deviation of 0.42 (3.10 ± 0.42). The maximum and minimum levels are 4 and 1, respectively. The range is 3. The median level is 3 indicating at least 50% of the respondents have enrolled in accounting and finance that is more than 3.0. Since the mean and median values are very close, perhaps the data is symmetrical. The skewness value is –0.95 which is within ±1, hence the data is symmetrical. The Kolmogorov-Smirnov test of normality on perceived value gives a *p*-value of 0.144, which is more than 0.05. Therefore, the data is normally distributed.

The results from the regression analysis are also analysed and discussed as below (see Tables 6 and 7).

Table 6 Multiple Linear Regression Analysis between Independent Variables with Attitude

Multiple Linear Regression Analysis Coefficients[a]						
Model	Unstandardised Coefficients		Standardised Coefficients	*t*	Sig.	VIF
	B	Std. Error	Beta			
1 (Constant)	3.71	0.148		25.52	0.000	
Personal Interest	0.111	0.044	–0.173	–2.544	0.012	1.272
Social Influence and Ambition	–0.013	0.048	–0.019	–0.0277	0.7821	1.272
[a]Dependent Variable: Enrolling in Accounting and Finance						

The first regression is multiple linear regression between the independent variables with the dependent variable. Highest variance inflation factor (VIF) is 1.272 which is less than 5. Thus, there is no problem with multi-collinearity. The Kolmogorov-Smirnov test of normality of residuals gives a *p*-value of 0.058, which is more than 0.05. Thus, the assumption of normality of residual terms is met. The model above is accepted. Looking at significant level of $p < 0.05$, Personal Interest is a significant predictor for enrolling in Accounting and Finance. After dropping off Social influence and Ambition from the equation, a simple linear regression for enrolling in Accounting and Finance subject is analysed.

Table 7 Simple Linear Regression Analysis between Personal Interest and Enrolling into Accounting and Finance

Coefficients[a]						
Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
1 (Constant) Personal Interest	3.446 0.116	0.116 0.039	0.0182	29.649 3.019	0.000 0.003	1.000
[a]Dependent Variable: Enrolling in Accounting and Finance						

The regression equation for enrolling in Accounting and Finance = 3.446 + 0.116 Personal Interest. For every unit increase in Personal Interest, enrolment in Accounting and Finance is expected to be higher by 0.116 units. Based on the *p*-value regression coefficient in regression analysis for enrolment in Accounting and Finance ($p < 0.05$), only Personal Interest is a predictor for their enrolment into accounting and finance (see Table 8).

Table 8 Summary Results of Hypothesis Testing

Attitude		
Hypothesis	**Description**	**Accepted/Rejected**
H-1	There is a relationship between 'Personal Interest' and Enrolment in Accounting and Finance	Accepted
H-2	There is a relationship between 'Job Prospects' and Enrolment in Accounting and Finance	Rejected
H-3	There is a relationship between 'Social Influence and Ambition' and enrolment in Accounting and Finance	Rejected

CONCLUSION

From the research study, data analysis revealed that there is a relationship between students' personal interest and their enrolment in accounting and finance. Job prospects, as well as social influence and ambition seem to have no relationship towards students' enrolment in this subject. As this is a study done on a group of pre-university students from a particular programme, the results shown may not be applicable to students from other programmes or education levels. Therefore, future research can be conducted by considering other variables and forms of testing in order to gain more insights into the factors influencing students' enrolment in accounting and finance.

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IMPACT OF TECHNOLOGY ON PEER RELATIONSHIPS AND INTERPERSONAL DEVELOPMENT (TO BETTER ENGAGE, ENRICH AND EMPOWER MODERN LEARNERS)

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Abstract

In line with Malaysia's need for a highly skilled labour force for the digital economy in the year 2050, instructors are constantly reviewing pedagogies to support the effort. The objective of the study is to explore the learning experiences of modern learners who are post-secondary students in using the Padlet software and app, as an intervention to traditional teaching. An interpretative phenomenological research approach is employed to understand the learning experiences modern learners have using the Padlet in class. An interpretative phenomenology analysis method is employed to gain insights into how the use of the Padlet can improve peer relationships and interpersonal development. The purposeful sampling involves a heterogeneous class of ten senior students with the common experience of using the Padlet in class for the first time. The research duration was for seven weeks and in the final week, each student was asked to write a reflective paper guided by four reflective questions. The preliminary findings indicate an increase in a majority of students' peer relationships and interpersonal development. However, a small number of students appear to resist change which calls for further study with the aim to widen participation using the Padlet in teaching and learning at post-secondary level to advance skills development for the digital economy.

Keywords: Padlet, modern learners, peer relationships and interpersonal development

INTRODUCTION

A white paper by Will and Bruce (2017) notes that modern learners are a 'relational' generation requiring instructors to relook teaching methods to develop teaching styles that engage, enrich and empower students to be self-directed learners.

The Padlet is a software with a visual bulletin board that provides for sharing in real-time. The Padlet is inclusive, collaborative, flexible and portable with iOS and Android apps. The platform is user-friendly where students can access through QR code or password to the canvas designed by the instructor. The Padlet provides students the opportunity to engage by posting their views and engaging with fellow students and instructors on the topic area.

Modern Learners, Peer Relationships and Interpersonal Development

Will and Bruce (2017) claim that modern learners have grown up with ubiquitous technologies and are capable of taking control of their own learning. However, Price (2017), an academician observed that modern learners learn differently and are often misunderstood by instructors. She suggests instructors adopt new teaching and learning methods that facilitate conducive learning experiences that will lead to better management and understanding of their students. The indicator being improved peer relationships and interpersonal development (Price, 2017).

METHODOLOGY

The study supports Moustakas (1994), that research should be conducted at the site of the phenomenon and therefore the researcher takes on a phenomenological approach to explore learning experiences using Padlet in class. In addition, Patton (1990) states that qualitative data collection method is valued by exploring the respondents' depth of emotion. Therefore, the research approach taken is to 'reveal' insights into students' experiences when using the Padlet, particularly in the context of enhancing peer relationships and interpersonal development. This study is conducted on a heterogeneous class of ten senior post-secondary students, with a common experience of using the Padlet for the first time. In the final seventh week, the students submitted a reflective paper guided by four reflective questions. The questions solicit factual, divergent, convergent and evaluative type of answers to identify the development of skills.

FINDINGS AND CONCLUSION

The respondents' unanimous response is that the Padlet being ubiquitous is easy to use for group and individual tasks and learning in and outside class, even for first timers. While 20% of students stated they prefer traditional class teaching to using the Padlet, the remaining 80% agree that there is better understanding of what their peers are thinking, leading to a better grasp of the lessons and confidence to complete tasks successfully. However, this being a preliminary study, there is need to identify the reasons for the 20% showing resistance to change. The study also indicates the wider potential of using the Padlet to encourage wider participation, extending the learning beyond the confines of the class. Further study needs to be carried out to encourage wider participation between various programmes/instructors and community to encourage creating personal learning environments for lifelong learning and improved skills development (Mason et al., 2011).

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CASE STUDY: INVESTIGATING THE ACCEPTANCE OF MOBILE LEARNING AMONG LEARNERS OF SUNWAY COLLEGE JOHOR BAHRU

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Abstract

Mobile phone has been pervasive and nifty to learners. The attractive features of the mobile phone could embolden learners to use it for learning. Thus, this quantitative research utilised the Unified Theory of Acceptance and Use of Technology (UTAUT) as a theoretical basis to conduct a descriptive research to test the factors that influence students' acceptance and use of mobile learning at Sunway College Johor Bahru. Performance expectancy, effort expectancy, facilitating conditions and social influence were the moderate determinants of mobile acceptance. Although social influence was significant to this study, it was less influencing; due to the lack of encouragement and support from the lecturers. Further research should focus on students' acceptance of mobile technology with increasing usage and experience in learning by utilising longitudinal studies. Since learners show a high intention of utilising mobile phone for learning, the stakeholder should encourage the move.

Keywords: acceptance, mobile learning, learners, UTAUT

INTRODUCTION

Mobile phone has ubiquitous access to remote resources, thus it has become an integral part of our daily lives. It has been reported that 19.06 million Malaysians have accessed the internet through their mobile phone until the third quarter of 2017. This figure is projected to increase to 21.29 million in the year 2020 (Statista, 2017). Mobile phone and its features have developed very quickly; it has very distinctive features that can be utilised as a learning tool (Trifonova, 2016). The flexibility of the tools makes it convenient for learners to enhance their learning of subjects (Motiwalla, 2015). Mobile phone provides a multimedia-access tool, connectivity tool, capture tool, representation tool and analytical tool (Churchill et al, 2012). Mobile phone supports learning by convenient gathering and sharing of information (Lan, Sung, & Chang, 2015), exploratory learning within and outside the classroom (Liu, Lin, Tsai, & Paas, 2014) and game-based learning (Klopfer, Sheldon, Perry, & Chen, 2012). Mobile phone provides a better communication platform and researchers affirm that it can cultivate interest in learning (Kennedy, 2008). Therefore, mobile phone has great potential to help subject content learning, problem-solving and other high-level skills among learners (Warschauer, 2016).

The Unified Theory of Acceptance and Use of Technology (UTAUT) model has been used widely to measure the acceptance modelling (Venkatesh et al, 2003). UTAUT was formulated based on eight conceptual and empirical studies on the technology acceptance model; Theory of Reasoned Action (Fishbein & Ajzen, 1975), Social Cognitive Theory (Bandura, 1986), Technology Acceptance Model TAM (Davies, 1989), Model of PC Utilization (Thompson et al, 1991), Theory of Planned Behaviour TPB (Ajzen, 1991), Motivation Model (Davis et al, 1992), Combined TAM & TPB (Rogers, 1995) and Innovation Diffusion Theory (Rogers, 1995). UTAUT has explained 70% of technology acceptance behaviour (Masrom, 2008).
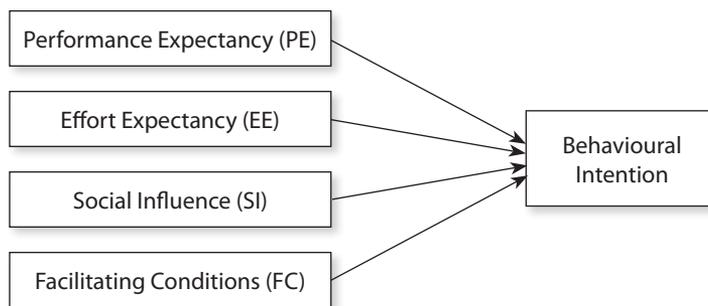
PURPOSE OF RESEARCH

The study focused on the following areas:

(i) analysis of the performance expectancy (PE) of utilising mobile phone for learning among learners in Sunway College JB.

(ii) analysis of the effort expectancy (EE) of utilising mobile phone for learning among learners in Sunway College JB.

(iii) analysis of the social influence (SI) of utilising mobile phone for learning among learners in Sunway College JB.

(iv) analysis of the facilitating condition (FC) of utilising mobile phone for learning among learners in Sunway College JB.

RESEARCH FRAMEWORK AND HYPOTHESIS

The researchers selected and adopted UTAUT model in this study. The model consists of four key concepts (Venkatesh & Davis, 2000): The first is the degree to which an individual believes that utilising the system will help to attain job performance (performance expectancy, PE); Second key is the degree of ease associated with the use of the system (effort expectancy, EE); The third key is the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system (social influence, SI) and the final key is the facilitating condition that has direct influence on intention to use it (facilitating condition, FC). The four variables (PE, EE, SI, and FC) directly affect intention and the control variable, like age and gender being voluntary directly affecting behavioural intention to use the system (Venkatesh et al, 2012).

Source: Adapted from Venkatesh & Davis, 2000

RESEARCH HYPOTHESIS

H1: Performance expectancy will have a positive influence on behavioural intention to use.
H2: Effort expectancy will have a positive influence on behavioural intention to use.
H3: Social influence will have a positive influence on behavioural intention to use.
H4: Facilitating conditions will have a positive influence on behavioural intention to use.

METHOD

A quantitative approach with the use of a close-ended questionnaire was applied in this research. Judgement sampling was used in this research, whereby a total of 150 second-year Diploma students from Sunway College Johor Bahru completed the questionnaire. The questionnaire was developed in accordance with the procedure prescribed by Venkatesh & Davis (2000) and literatures involved the UTAUT model.

The aim of this questionnaire is to investigate the effects on students' learning acceptance via mobile technology. The questionnaire measures four key areas which are performance expectancy, effort expectancy, social influence, and facilitating conditions. The respondents were required to indicate whether their level of agreement with the statements provided with regard to the usage of mobile devices in the studies using the 5-point Likert Scale.

Descriptive analysis used in this research is explained and evaluated by frequency, mean and standard deviation. In this study, mean values were used to explain the average value of respondents that agree with the item that are most descriptive to the research.

RESULTS

Mobile learning has moderate influence on performance expectancy, effort expectancy, and facilitating conditions. H1, H2 and H4 were partially supported and this might be attributed to the fact that no consistency in usage behaviour, or students will no longer use mobile phones once the semester is over. H3 states that social influence is less determinant on the intention to use mobile learning, due to the lecturer's perception of mobile phones during the learning process.

The study found that the mobile phone is always fun and interesting in student learning, due to the user-friendly features of the mobile phone. Most of the learners agree that utilising mobile phones will increase their performance in learning.

CONCLUSION

The study was limited to acceptance and ease of use of mobile technology in learning. In addition, further research should focus on students' acceptance of mobile technology with increasing usage and experience in learning by utilising longitudinal studies. Since learners show a high intention of utilising mobile phones for learning, thus the stakeholder should encourage the move.

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TECHNOLOGY IS NOT ENOUGH: ENGAGING LEARNERS IN MODERN CLASSROOM

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Abstract

Technology has been brought into classrooms as a tool for conveying information and instruction. At the initial stage of learning, students will receive and try to understand the learning context in the system as they interact with it. Interaction is limited to a certain key button on the learning platform within the technology. The technology programme judges the learner's response and provides feedback, most often about the correctness of the learner's response (Jonassen, Carr and Yueh, 1998). It is argued that technology should not be used in classrooms to instruct learners, but rather should be used as a tool to engage learners and engage learning activities. Clark and Mayer (2002) identify two pitfalls in online learning environment: failure to accommodate the learning process to the targeted learners and failure to contextualise the learning activities. These pitfalls may stem from misassumptions of teachers towards students. This paper attempts to identify and address assumptions that a teacher may have of students to create a more engaged learning process with the presence of technology in classroom. This study was carried out among students in Sunway College Johor Bahru. A review was then carried out to access students' engagement and performance in classrooms with the presence of technology, and assessing the effectiveness of addressing the teacher's misassumptions. The outcome gave a more engaged learner in the overall learning process and an improvement in their overall assessment scores.

Keywords: technology, engaging learners, learning environment, technology in classroom

INTRODUCTION

Today, information, communication and technologies (ICTs) infiltrate classrooms around the world at an exceedingly rapid pace. In the wake of this influx, educators face growing challenges as they teach a very 'wired' – and more and more 'wireless' generation of students using technology that is evolving every day (IEAB). With the wide opportunities technology has to offer for learning, educational institutions have focused on getting the right technological learning platforms and tools, software and internet bandwidth to help millennial learners. These modern learning infrastructures however, only provide the necessity conditions of having technology in classrooms. It does not ensure students know how to use information or are willing to engage in the learning activities and to build their knowledge in their field of studies. The rapid growth in information and technology advancement may overload the student and he/she may not see the relevant concepts and theories presented and that results in disengagement.

METHODOLOGY

A total of 44 students undergoing Monash University Foundation Year and Diploma programmes at Sunway College Johor Bahru were used for this research. This research experimented on strategies to overcome assumptions made about students. The observation criteria were based on three assumptions that instructors may have of learners (Lim, 2004). The assumptions are: students have acquired the learning strategies, students have acquired the knowledge to learn from the learning components and platform (i.e. Moodle, Google Doc & Microsoft 365) and lastly, students have the right attitude towards learning. Strategies have been put forward to address these assumptions so that the learner is more engaged when using technologies in classrooms. Lack of learning strategies were addressed by having a 'learn how to learn' session. As for addressing the lack of knowledge, we had facilitated discussions and dialogues (teacher-student discussions, student-student discussions and guidance from other students), as well as posted conflicting views to elicit thinking and reflection. Lastly, to address the lack of appropriate attitude, we have problem-solving activities and simulation activities. Students' learning engagement was observed for a semester across the two programmes. Students' performance was reviewed through assessments (each programme had its own set of assessments). Results were compared with the previous semester students where misassumptions were not addressed. Students were also asked to participate in a survey regarding their understanding of the whole learning process with the presence of technological tools.

OUTCOME

Based on this observation, learning has become a clearer path for both students and teachers. Technology is no more a tool to convey information, but instead, it has been used to engage them into critical thinking when used wisely and collaboratively. Technology, with the presence of lecturers and active peer-to-peer learning, promotes effective and more engaging blended learning. A majority of students performed better as they put forth interests in classroom which promote good and effective learning. A small group of students with limited aptitude on the subject were able to cope better. Although comparisons were made on students who have the opportunity to have technology in classrooms, some were at a different age group and at different levels of studies. These posed as limitations in the outcome of this research.

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ENGAGING STUDENTS IN BIOLOGY AND CHEMISTRY CLASSROOMS VIA ACTIVE LEARNING STRATEGIES

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Abstract

In an age when interest in STEM (science, technology, engineering and mathematics) education is declining, there is a need to transform instruction into an engaging experience to captivate and retain student interest and enjoyment. This article documents several active learning strategies employed to engage student interest in Biology and Chemistry conventional pre-university courses. It outlines the design of such activities according to Multiple Intelligences (MI) Theory and presents preliminary student feedback.

Keywords: science, learning, engagement, motivation, active learning

INTRODUCTION

Student numbers taking pure science in Malaysia have fallen 50% to under 21% in the past decade (Thestar.com.my, 2017a). Perceived factors influencing this global and local trend include constant curricula and examination changes making adaptation difficult, perceived course difficulty, and poorer career progression as compared to the arts and social sciences. Yet, STEM (science, technology, engineering and mathematics) education is pivotal to Malaysia's economy in the 21st century (Thestar.com.my, 2017b). Deputy Education Minister, Datuk P. Kamalanathan had been reported as saying, "To ensure that STEM education is truly exposed to students, the passive teaching method in the classroom needs to be transformed into active learning that emphasises creative ideas
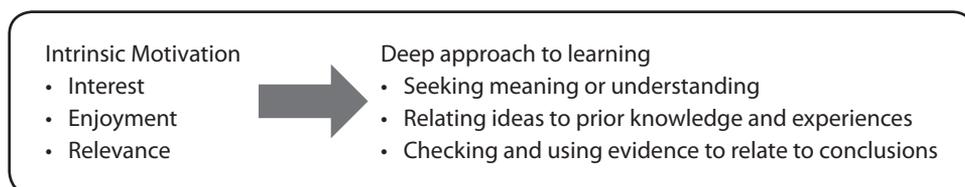
and higher order thinking skills." Cambridge International Examinations (Cambridge, 2014), defines active learning as a "means that learners take increasing responsibility for their learning, and that teachers are enablers and activators of learning, rather than lecturers or deliverers of ideas." This article highlights selected activities entailing active learning for 2 STEM courses, namely Biology and Chemistry, from the viewpoint of MI Theory which identifies 10 intelligences (Linguistic/Verbal, Logical-mathematical, Visual/Spatial, Bodily/Kinesthetic, Musical, Interpersonal, Intrapersonal, Naturalist, Existential, Spiritual; Gardner, 1999).

SAMPLE DESCRIPTION

Students involved in the following active learning strategies ranged from 20 to 200 per session of instruction from different Malaysian institutions. These students were from local pre-university courses (Foundation and a UK-based programme). The course mode followed a largely conventional instructional format. The methods covered a variety of topics in Biology and Chemistry. Instructions were provided before the execution of each strategy. Where available, videos and photographs of such were scheduled for screening during paper presentation.

STRATEGIES

At the heart of employing active learning strategies is the intention to evoke students' intrinsic motivation to stimulate quality learning as exemplified by the deep approach to learning (Figure 1).

Intrinsic Motivation
- Interest
- Enjoyment
- Relevance

Deep approach to learning
- Seeking meaning or understanding
- Relating ideas to prior knowledge and experiences
- Checking and using evidence to relate to conclusions

Figure 1 Conceptual Model of the Relationship between Intrinsic Motivation and the Deep Approach

The following outlines a variety of methods used to cater to multiple intelligences inherent in the classroom.

Model Building

Molecular modelling was carried out for Biology and Chemistry in order to deliver via a blend of teacher- and student-centred hands-on approach, specific topics and using Molymod Molecular Model Kits to construct organic molecules. Students were divided into smaller groups to construct models of organic molecules, covering topics such as

carbohydrates, proteins and isomerism. Brief teaching was followed by model building. For Biology, peer assessment (as learning), under teacher supervision, was employed to verify if models were constructed correctly. For Chemistry, students had to predict the structures of molecules given certain conditions.

Problem-based Strategies

Activities which promote higher-order thinking and stimulate interest have the potential to induce Deep Learning (Davidson et al., 2014; Senko et al., 2013). Two different instructional methods were used. For Chemistry, students were divided into small groups and given real-life daily applications. As students were required to search for additional information beyond the textbook, most searched online with smartphones and laptops. For Biology, the case method was employed, whereby students discussed several case studies related to cell biology and biochemistry.

Commerce

A *pasar malam* (night market) game with elements of trading was introduced in order to enable students to identify the cellular structures. Currency comprised of cellular components common to one or all organelles. Students used them to purchase coloured printouts of a variety of cellular organelles which made up plant and animal cells. Winners were those who bought the most number of cell types.

Playing Cards

Playing cards normally used for casual playing were used to get students to demonstrate an understanding of meiosis. Students were provided with pairs of cards of different designs to represent chromosome types. One member of each student pair had to explain to the other why and how they enacted chromosomal segregation during different meiotic stages. When one faltered, the other member would take over to resolve the processes.

Role Play

Students acted the roles of various elements of the immune system with constant questioning of the audience in order to elicit and test for understanding of various stages in biological processes.

Music

Musical demonstrations involving different sounds of the guitar and piano were used to illustrate hormonal action and nuclear division.

Dance

All students were invited to dance to a variety of music to demonstrate understanding of membrane fluidity and components at different temperatures.

FEEDBACK

Overall, qualitative and quantitative exit surveys conducted for Biology based on the selected activities above indicated high levels of student satisfaction. For strategies involving modelling, commerce and case studies, favourable responses to items averaged 70%–80% indicating slight to strong agreement. The following Tables 1 and 2 present student ratings for selected activities for which surveys were carried out.

Table 1 Proportion of Favourable Student Responses to 2 Activities

	Pasar Malam ($n = 43$)	Modelling ($n = 21$–34)
Learning outcomes achieved	90.7	86.3
Fun	90.7	91.2
Recommended	79.1	76.5

Table 2 Proportion of Favourable Student Responses to the Case Method ($n = 184$)

	Ave. %
Problem solving skills enhanced	78–85
Critical thinking skills enhanced	81
Enjoyment	59–76
Communication skills enhanced	71–77
Educational value	52–81
Interpersonal skills enhanced	53–65

Sample qualitative responses from students are given as follows (grammatical errors retained for authenticity):

> *"The interactive sessions make us to be physically connected to what the lecturer is teaching, having your ownself included in the teaching process indirectly causes you to take in more and understand more than the other students even though that particular student haven't studied much beforehand."*

"I also would like case studies in my Degree. This is because during the test, the students only write the answers as it is in the lecture slide or textbook, while in the case study the student use his opinion based on combination of other subjects and also based on general knowledge."

CONCLUSION

Active learning strategies employed were shown to be not only possible in conventional courses in a Malaysian but also well-received, overall, by the majority of participants in preliminary surveys. These measures are reflective of the level of student engagement, endorsement and satisfaction, ingredients vital to retaining student interest and participation in science into tertiary education and beyond.

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TRANSFERRING LEARNING OWNERSHIP TO INSPIRE FREEDOM TO EXPLORE

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Abstract

An educator is constantly in the position of controlling the direction of the teaching process and thereafter the learning outcomes. This role of power can be used to effectively influence a culture where learning is of the utmost priority. The journey towards learning can be an enjoyable, memorable experience for students if they are given the freedom to think creatively. One effective way to accomplish this is to encourage a sense of ownership amongst learners. Essentially, this transfers ownership over learning and applying core concepts to students in order to promote a sense of accomplishment and individuality in context of understanding. In order to shift the learning paradigm towards a more authentic student-centred approach, it is imperative to modify the role of the educator from being merely a teacher to being an active facilitator. A variety of methods can be employed to inculcate this approach towards learning, such as faded scaffolding by teachers, empowering students to choose their own activities, using technological devices to gather information and be assessed in different modes. The aim of this study is to investigate whether transferring ownership of learning to students does enhance student engagement, motivation and competency amongst pre-university students. 38 pre-university students from the Cambridge GCE A-Level programme were studied during their first semester (traditional teacher-student dynamics) and second semester (ownership transferred to students). Overall results show that most students are receptive to this idea and their final examination grades showed improvement over the duration of the study. This substantially indicates that while it is challenging to hand over control, giving students ownership over their own learning, empowers them to explore their potential in a very personalised, meaningful manner, that eventually translates into enhanced performance and engagement.

Keywords: empower, ownership, engage, faded-scaffolding

INTRODUCTION

In this fast-paced era of technological advancement, it is imperative to reflect upon the dire need for evolution of educational approaches. The idea of encouraging a sense of ownership amongst learners although not novel, has not been put to practice by many educators. This idea transfers ownership over learning and applying core concepts to students in order to promote a sense of accomplishment and individuality in the context of understanding. Many studies have shown the significance of ownership as an effective strategy leading to outcomes surpassing expectation. According to Ball et. al. (2017), ownership strongly influences conceptual understanding, proficiency, motivation, engagement and confidence.

The traditional classroom dynamics emphasises on teacher-perfected skills taught to students in order to produce desired outcomes of learning. Teachers dispense information, thus directing the subject matter, resulting often in apathetic learners unwilling to actively partake, think creatively and understand the meaning of a project (McElhany, 2016). This tears away the vast potential of developing students' own individuality in understanding concepts and deprives students of ownership of their learning. Therefore, in order to shift the learning paradigm towards a more authentic student-centred approach, it is imperative to modify the role of the educator from being merely a teacher to being an active facilitator. This is the first step towards awakening the diverse imagination and opinions of students, thus providing a more democratic and engaging learning experience for them (Svitak, 2012).

Empowering students by giving them ownership of their learning does not mean abdicating control whatsoever, but rather guiding students to take control of their own education. There are many methods to begin this transition smoothly. The use of verbal prompts, guiding cues and follow-up questions in the classroom are great ways to achieve learning objectives as well as to improve learners' content understanding, metacognitive skills and appropriation (Kelly, 2014). The extent to which an educator supports the learners' autonomy also plays a large role in enhancing learners' competence and interest. Studies have documented the benefits of providing options, flexibility and freedom for students to make choices in curricular activities (self-determination), where students are able to master core concepts in their own individual manner (Ball, 2017).

In addition, encouraging meaningful technological use in the classroom opens up limitless avenues for students to explore the branches of core concepts (Jeno, 2017). Non-conventional assessment that is relatable to real-life situations helps students realise the significance of what they are learning, rather than just memorising facts to ace an exam (Svitak, 2012). Furthermore, it has been shown in numerous studies that self-determination (Adams, 2017) and faded active scaffolding work simultaneously

to empower students into taking ownership of their learning. Essentially, this means gradual withdrawal of active guidance as learners exhibit progress towards achieving learning objectives (Ball, 2017). These steps pave the path towards students eventually taking responsibility of their learning.

METHODOLOGY

This study was conducted on 38 pre-university students from the Cambridge GCE A-Level programme. The students initially underwent their first semester learning in a conventional manner where the teacher acted as the sage on stage. The teacher designed activities and lessons as well as formative and summative assessments (tests). Learning was steered by the teacher and instructions were followed by students. During their second semester, students were given the power to choose between a few optional activities that best suited their learning preference. Some activities involved designing videos, some included model-making and some were discussion forums. In line with the Bring Your Own Device initiative of the pre-university department, students were also given the opportunity to use their phones or laptops to explore various aspects of concepts learnt. Topical tests were substituted with presentations using the students' mode of choice. At the end of the duration of the study, students were surveyed on the effectiveness of taking ownership of their learning process. Their results for the first semester and second semester final examination were also compared to gauge the improvement in their academic performance.

RESULTS

Results indicated that when students were provided choices to design their own learning, 84% of the students felt accomplished, while 79% felt the teacher listened to and respected their mode of learning. 82% of students agreed that the level of interest in the concepts increased, while a whopping 92% of students felt that they were able to creatively explore concepts and apply them correctly due to the appropriate feedback, cues and prompts by the teacher. 84% of students felt that using technology in the classroom made learning faster, albeit 32% felt slightly overwhelmed by the seemingly limitless information. However, all students agreed that with faded scaffolding from the teacher, they were able to focus on correctly prioritising relevant information for the syllabus requirement, while 82% felt more independent in coming up with multiple approaches to solve problems. 84% of the students felt more confident and engaged in the classroom, while 87% felt it was easier to pick up new concepts when they were able to relate it to familiar situations. 54% of the students agreed that realising the significance of the concepts learnt made them feel that their learning mattered, while 82% of the students felt that they were more motivated to learn when their assessments

were judged using their preferred presentation mode. Overall, comparison between their first and second semester final examination showed an increase in the average marks of all students, with a mean increase of 5 to 6% indicating their competence and critical thinking skills were also sharpened.

DISCUSSION

Based on the results, it is clear that teachers hold the power to create a learning environment that makes students feel like they matter and are empowered to take responsibility of their own learning process. Students react positively when they are allowed some leeway to be themselves and this enhances their creativity and critical thinking. When decision-making is put into the students' hands, with options for them to make informed choices, this helps increase their confidence and overall self-image. Furthermore, unlimited access to their electronic devices provides infinite opportunities for students to widen their horizons and explore the concepts. Although some students still feel overwhelmed by the vast endless information available to them, faded scaffolding on the part of the teacher allows room for students to still refer to the teacher for some minimal guidance that helps keep track of syllabus relevance and standards to help them eventually become self-reliant. According to Salmon, G. (2013), teachers need to assure the students of their roles as moderators to provide necessary feedback at specific times in order to overcome students' apprehensions especially during the initial stages. Only half of the cohort surveyed felt that their learning mattered and this is primarily due to time constraints and emphasis on grades. As shown by the results, when teachers acknowledge and judge the achievement of students consistently without bias, students feel more competent and capable, thus motivating them to be more willing to learn while actively participating in the classroom.

LIMITATIONS AND RECOMMENDATIONS

Although this study showed positive outcomes, this may have been attributed to the small sample size. Future studies should also include the feasibility of this approach in larger groups of students.

CONCLUSION

It is paramount for teachers to reflect on their pedagogies and teaching practices, especially since students have such diverse learning styles. Teachers must gradually transform into a facilitator or guide rather than the 'director' of learning. This allows students the freedom and space to design their own kind of learning process that is more effective for each individual. Teachers nudge students gently towards the learning objective, but give the reigns to students to control and take ownership of their own

learning. Undeniably this process is time consuming and requires commitment both from the teacher and the student. However, with dedicated teachers willing to evolve into guides, the benefits and gratification of this approach is far beyond imagination, as teachers unlock and unleash the true potential of each student, giving rise to more empowered, proactive students eagerly ready for their learning exploration.

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OPTIMISING TEACHING STYLE

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Abstract

Students have different learning style preferences, and preferences may be different between students from different programmes of study as well. In order to find out whether or not students from different programmes of study have direct effect on learning style, this research was carried out to find out the implication of programme of study on the learning style preferences of undergraduates at Sunway College Johor Bahru. Respondents were chosen from three different diploma programmes, which are Diploma in Hotel Management (DHM), Diploma in Business Administration (DBA) and Diploma in Information Technology (DIT). The participants responded to a 14-item questionnaire. The questionnaire was adapted from Fleming & Miller (1992), VARK's inventory. The data collected was analysed to find out which modality (Visual, Auditory Read/Write and Kinaesthetic) the students preferred and whether they preferred single mode modality or multi-mode modality and how it effects teaching and learning style.

Keywords: learning style, VARK's inventory, teaching style

INTRODUCTION

It is immensely important to understand the preference of learning style among undergraduates at Sunway College Johor Bahru. This is because learning style has a direct impact on students' academic performance. Moreover, employers and postgraduate educators assume that undergraduates already have the entire prerequisite or skill required for them to serve them in their chosen career or in a postgraduate education. Thus, it is crucial to improve the quality of learning and retention in the process of learning so that students are well prepared and capable of handling obstacles and challenges they will face in the future, either in postgraduate studies or future careers. Moreover, one of the ways for instructors to improve students' learning, retention

and motivation is by adapting teaching methods to meet the various learning style preferences of learners (Wehrwein, Lujan, & Dicarlo, 2007).

METHODOLOGY

The participants were chosen randomly by stratified sampling. Participants in this study consist of Sunway College Johor Bahru undergraduates from three different programmes, mainly Diploma in Hotel Management (DHM), Diploma in Business Administration (DBA) and Diploma in Information Technology (DIT). 10 participants were chosen randomly from each programme which makes it 30 participants in total.

The VARK's inventory was developed by Fleming & Mills (1992), to measure four perceptual preferences: Visual (V), Audio (A), Read/Write (R), and Kinaesthetic (K). The VARK questionnaire developed by Fleming & Mills (1992), was adapted to create a questionnaire that will be able to detect which mode the participant prefers. The VARK questionnaire adapted is a semi structured survey, accommodating both the qualitative and quantitative aspect of the research.

Students chose from 14 multiple-choice questions to match their preferred learning style with multiple options of A, B, C, D. Options are drawn from real-life examples and situation. Students were allowed to pick 2 options if a single option did not match their preference. Option A denotes the Visual (V) mode, Option B represents the Audio (A) mode, Option C signifies the Read/Write (R) mode and Option D specifies the Kinaesthetic (K) mode.

1 You are about to purchase a new laptop. Other than price, what else would influence your decision?
   A It looks very sleek and fashionable.
   B The salesperson telling you what you want to know.
   C Reading details about it.
   D Testing the laptop's functionality.
2 You want to learn something new, e.g. dance or a new board game. You learn best by
   A visual-clues-pictures, diagrams and charts.
   B listening to somebody explaining it to you.
   C written instructions.
   D doing it or trying it on your own.

Figure 1 Sample of Questions Adapted in the VARK Questionnaire

Data is analysed by looking at the numerical dominance of one mode over others. In this study, modes were divided into single sensory modality and multi-sensory modality. The follwing table shows the list of modes used to analyse students' preference.

Table 1 List of Modes Used Based on the VARK's Inventory

Single Mode	Visual (V)	Audio (A)	Read/Write (R)	Kinaesthetic (K)		
Multi-mode	Visual-Audio (VA)	Visual-Read/Write (VR)	Visual-Kinaesthetic (VK)	Audio-Read/Write (AR)	Audio-Kinaesthetic (AK)	Read/Write-Kinaesthetic (RK)

RESULTS

Diploma in Business Administration students showed high preference for the multi-mode instead of the single mode. The multi-modes of Visual-Read/Write and Audio-Read/Write were the top choices both obtaining 15.9% each, whereas the least preferred choice was single mode Read/Write.

Diploma in Hotel Management students showed 58.6% preference for the single mode modality and 41.4% for multi-mode modality. The disparity between modes were not that great like DBA and DIT. The highest preference was given to single mode of Audio which obtained 22.9% score, whereas the least preferred choice was given to multi-mode of Visual-Read/Write.

Diploma in Information Technology students showed high preference of 96.5% for multi-mode modality compared to single mode modality that obtained 3.5% score collectively. The highest preference was given to the multi-modes of Audio-Read/Write and Audio-Kinaesthetic. They were the top choices since both obtained 19.3% each, whereas the least preferred was given to single mode Audio.

Table 2 Frequency of Student's Preference Based on Programme of Study

Programme of Study	Single Mode (%)	Multi-Mode (%)
Diploma in Business Administration	17.9% Highest: K – 7.9% Lowest: R – 2.1%	82.1% Highest: VR & AR – 15.9% Lowest: RK – 10.0%
Diploma in Hotel Management	58.6% Highest: A – 22.9% Lowest: V – 8.6%	41.4% Highest: AR – 12.2% Lowest: VR – 3.6%
Diploma in Information Technology	3.5% Highest: K – 2.2% Lowest: A – 0.0%	82.1% Highest: AR & AK – 19.3% Lowest: RK – 9.3%

DISCUSSION

The results showed an evident difference between all three programmes. Thus, it can be deduced that students from different programmes of study do have different learning style preference-based on the frequency of modes selected.

Diploma in Business Administration students' interest towards Visual-Read/Write and Audio-Read/Write, and disinterest towards Read/Write indicates that even though they least prefer reading and writing, they seem to be more in favour of Read/Write mode when paired with Visual or Audio mode. This shows that they prefer learning through images, diagrams and charts and through reading materials and writing down notes in their programme of study.

Diploma in Hotel Management students showed strong inclination towards Audio and insignificance towards Visual-Read/Write. This is very much related to their programme of study as well. In the hospitality and tourism industry, being a good listener is deemed necessary as students deal with customers and providing good customer service is top priority. Therefore, their inclination towards Audio was predictable. Thus, they prefer learning through lectures or instructions via spoken words.

Diploma in Information Technology students gave top preference to Audio-Read/Write and Audio-Kinaesthetic and least preference towards Audio. This illustrates that even though they least prefer listening, they seem to be in favour of Audio when paired with Read/Write and Kinaesthetic mode. This indicates that they prefer learning through direct contact with the material by using experience, mobility or writing and reading concurrently while listening as they interact computers and softwares in their programme of study.

CONCLUSION

If we are attentive to their preferences, we can help them excel. It is important to be aware of each and every one's learning style in order to adjust study techniques to fit their preferences individually, so that no one is left out. Besides that, by identifying the imperative differences, instructors/teachers will be able to tailor their teaching style and assessment to meet the student's learning style preference. We are also able to find out which sensory modality they prefer when they receive new information or deal with challenges and obstacles in order produce a more comprehensive learning and teaching environment.

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CASE STUDY: ENGAGING IT STUDENTS WITH WORLD CAFÉ DISCUSSION AND KAHOOT! SUNWAY COLLEGE JOHOR BAHRU STUDENTS' AND TEACHERS' PERPECTIVES

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Abstract

A key focus of student-centred learning is the engagement of students in the learning process. The case study is focused on two aspects of learning: peer learning and IT tools of learning for Diploma in Information Technology students. World Café Discussion reinforced learning among peers through brainstorming, discussion and inquiry. As for the use of IT in enhancing learning, Kahoot! was chosen as a tool to improve the delivery of tutorial sessions in the form of fun and engaging quizzes. Self-administered questionnaires were used to determine the students' perspectives for both tools of engagement. As for the teachers' perspectives, observations were used. Overall, the students and the teachers found both methods useful in increasing student participation and motivation.

Keywords: engagement, peer learning, IT, World Café Discussion, Kahoot!

INTRODUCTION

This case study is focused on effective engagement of Diploma in Information Technology students. As IT educators, we noticed an imbalance in the learning approach of the IT students as their mode of learning is mostly related to student-computer interaction such as programming. We decided to explore the use of World Café Discussion to improve student-student interactions and also enhance their learning experience through using fun games such as Kahoot!.

To engage more students in active dialogue, an intake of students were exposed to the World Café Discussion method to promote in-class dialogue. Based on the definition from the online Oxford dictionary, a dialogue ("Dialogue", n.d.) is a discussion between two or more people or groups, especially one directed towards exploration of a particular subject or resolution of a problem.

World Café Discussion is an 'innovative approach to large group dialogue' and "In a World Café dialogue, small, intimate conversations link and build on each other as people move between groups, cross-pollinate ideas and make new connections around questions …" (Farr, 2013). The World Café Discussion was modified from the standard model to take place in a classroom setting with each group handling a different topic.

The World Café Discussion also encourages students to be more independent in their learning approach, whereby the lecturer is there only to facilitate, not to lecture and the students are encouraged to engage with their peers. A previous study stressed the importance of World Café Discussion in encouraging appreciative inquiry (Hornett, 2007). The students are encouraged to share their findings and views and also ask questions to clarify matters.

Kahoot! is a popular eLearning tool that can easily be used to add vitality, student engagement, and metacognitive support in higher education classrooms with limited instructor or student training required (Plump & La Rosa, 2017). Kahoot!'s official website (Kahoot!, 2018), confidently outlines benefits of using their game platform for both educators and students. This easy-to-use, flexible, diverse, engaging, global and free platform has changed the way quizzes are delivered in classes. It is a good way to engage students through the use of technology as they are able to participate anonymously in a quiz and get immediate feedback on their performance. It encourages students to be competitive in a more relaxing environment. All in all, the use of technology and games is crucial in livening up the learning experience.

METHOD

During each activity, the teachers made observations, while taking note of the level of engagement and participation of the students.

With regards to the students' perspectives for both World Café and Kahoot!, the data collection method used was self-administered questionnaires (one set for each method) to Diploma in Information Technology students for two theoretical subjects, resulting in a sample size of 42 for each method.

The questionnaires for both World Café and Kahoot! had 5-point Likert Scale questions, and one open-ended question regarding the students' experiences in that particular method. For the simplicity of analysis, 'agree' and 'strongly agree' were grouped together as 'agreed'.

RESULTS

Students' Perspectives

Approximately 76% of the respondents enjoyed the World Café Discussion. Out of 42 respondents, 71.4% felt that the discussion encouraged teamwork. 69.1% agreed that there was active discussion among team members. Interestingly, only 57.1% believed that it increases participation but approximately 88% felt that they were contributing to their team. As for the open-ended question, most had positive comments such as "It was fun", and "I hope there is a next time". However, there were a few who wished that there was more time given for the discussion.

As for Kahoot!, at least 90% of the respondents enjoyed playing Kahoot!. In terms of increased interaction and participation in class, 90.5% of the respondents agreed with each aspect. Approximately 88% agreed that Kahoot! helped them understand concepts, and 78.6% felt that Kahoot! helped them remember concepts. In the open-ended question, most gave positive comments such as "Helps me to learn", and "With the participation in this activity I became attentive and energetic". However, one commented that "The time mode makes me stressed".

Teachers' Perspectives

From the teachers' viewpoints, World Café Discussion provided an avenue for IT students to be engaged in classroom discussions. In general, most students were eager to participate, regardless of whether they were hosts or participants. As time progressed, the hosts became more confident with sharing and the participants were generally active in their contributions. Also, this discussion method enabled the students to digest the facts shared during the discussion. It was also observed that only a handful was not so interested. There were also a few who were shy to contribute in the beginning and

it took them some time before they were more involved in the discussion. Although World Café has its benefits, it also has its drawbacks. Due to the nature of World Café Discussion, it is not always possible to use in every IT subject and can be used only in certain topics.

During the Kahoot! activity, the students were generally energetic and excited. Even students who are introverts played the game excitedly. Since Kahoot! allows participants to provide nicknames, the shy and academically weaker students were more confident with this anonymity. Also, the students asked more questions as they wanted to know why their answers were wrong. Quizzes like Kahoot! provide a good way in breaking the monotony of any class.

CONCLUSION

The study indicates that IT students of Sunway College Johor Bahru enjoy activities such as World Café Discussion and Kahoot!. These activities are useful tools to get the students engaged and involved, and provide a good break from the typical monotony of a classroom.

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UNCONSCIOUS BIAS IN THE CLASSROOM: ARE YOU UNKNOWINGLY VICTIMISING YOUR STUDENTS?

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Abstract

In a nation like Malaysia, teaching is not only limited to content and syllabus delivery but it is also about connecting effectively with a variety of backgrounds, cultures and religions. The spectra of diversity are wide and it has many positive implications as well as negative ones.

Our brain, as revealed by psychologists, is capable of processing approximately 11 million bits of information every second in which, part of this information is processed out of the conscious awareness (Kahneman, 2011). Concerning this, even though educators have the noble intentions of treating all students fairly, at times, the implicit associations which we have gained from many experiences in life and which are beyond our conscious awareness may affect our judgement unknowingly. In retrospect, this has left students being sidelined or misjudged even though the educators did not have the ill-intentions in the first place.

In line with these background studies mentioned above, this research aims to look at the teachers' perspective of unconscious bias. This was done by studying the teachers' perceptions of different cultural, religious and educational backgrounds, the correlations between the teachers' perceptions and their unconscious actions in the classrooms were discussed. The findings discover that the teachers do not have the intentions to act biasly against their students in general. However, bias against certain groups of students is still prevalent unconsciously.

Keywords: classroom, unconscious bias

INTRODUCTION

From the study of cognitive science and social psychology, we understand that unconscious bias or implicit bias is evident in our daily lives. Unconscious bias is a tendency by which an automatic stereotype is generated against others; affecting the actions, understanding and decisions unconsciously (Banaji & Greenwald, 2016). Banaji and Greenwald further added that these stereotypes are more detectable in certain characteristics such as age, gender, socio-economy status and religion.

This unconscious bias results in unknowingly creating an 'in-group' of favourites, while relegating the others as the 'out-group'. This bias occurs when a person, (a) automatically or unconsciously classifies a person as a member of a group; (b) applies stereotypes to the others based on their group membership; and (c) makes decisions based on these stereotypes. In general, educators want the best for their students but these implicit biases create invisible walls that hinder opportunity and achievement for some students. This is because these unconscious biases can shape the expectations of the educator towards his or her students (Linda et al., 2010).

Therefore, the unconscious bias in the classroom is definitely a matter that requires immediate action but as important as it is, a solution is not that easy to acquire. It was stated by Shore et al., (2009) that in order for us to move beyond bias, we have to alter our original sphere of thoughts, which in certain paradigms are negative, and to explore our differences more openly and positively. It was proven through research that the only method to reduce unconscious bias is to counteract the influence. This is by creating awareness among the educators to identify any discrepancies that may be prevalent between automatic implicit associations and conscious ideals, thus, teachers can take conscious efforts to better align both of these thinking processes. For example, teachers may engage with individuals from different identities on a regular basis to reduce unconscious bias. By doing so, new associations about particular groups of people are created and existing implicit associations are torn down (Linda et al., 2010).

METHODOLOGY

This study focuses on the responses and feedback of 37 lecturers at Sunway College Johor Bahru. Their responses were collected based on their past experiences in dealing with individuals from various backgrounds. The research was conducted by having the respondents answer a questionnaire through cross-sectional survey, which had been adapted from the article *Building Awareness, Celebrating Uniqueness* (York Jewish Community Center Diversity Programs) in which modifications were made according to the setting and demography of our study. The responses comprised both open-ended and Likert Scale responses. There were three sections in the questionnaire. The first section was to collect the data of the respondents with regards to demography; the
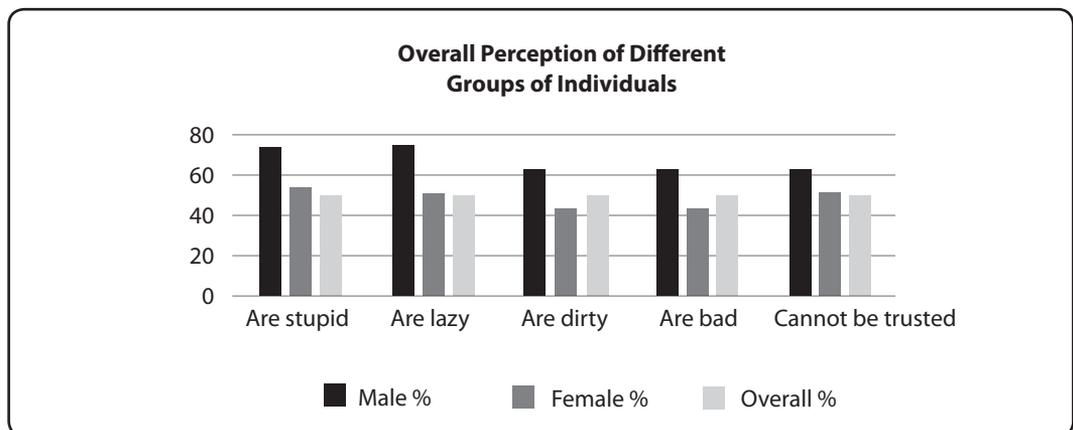
second section were questions asking the respondents for their implicit thoughts that were built by experiences and environment; and in the third section the respondents were given scenarios which implicated certain strata biasness and they were to give their view and response.

The data collected was used to analyse two main elements in this study; (a) the degree of bias due to experiences; and (b) the degree of unconscious bias of teachers at Sunway College Johor Bahru.
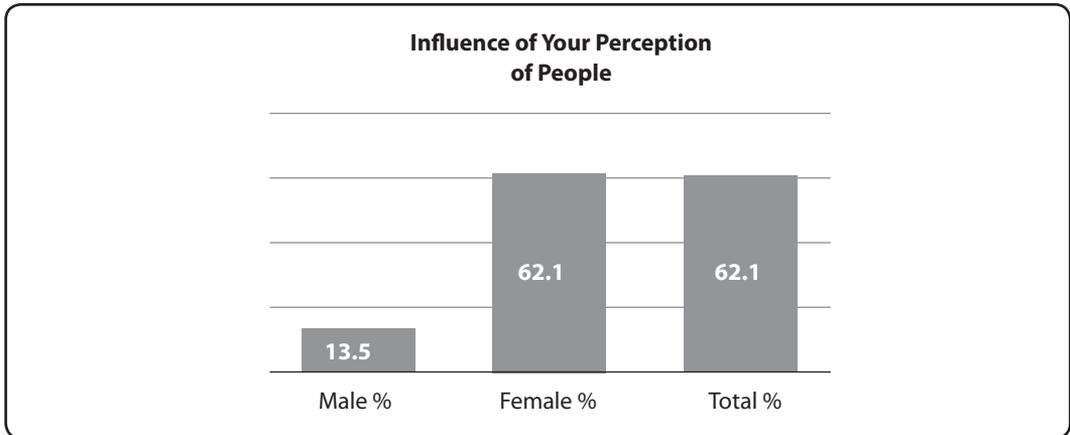
The limitation of this study is the lack of teacher observation in the classroom to note their responses to different groups of students. In addition, a pretest was not done to validate the responses due to time constraints and limitations in the number of respondents.

RESULTS AND DISCUSSIONS

From the results, it was noted that a vast majority of teachers possess implicit bias against certain groups of people. It was also noted that more than 40% of the respondents inclined towards the thought that certain groups of people were less adequate in certain areas (Figure 1). This was more prominent in the male gender compared to the female. Males were more prone to categorising people according to their social status and ethnic groups compared to females. However, when their implicit bias against others was translated into influencing their perception of groups in class, females were more susceptible to do so (62.1%) (Figure 2).

Figure 1 Perception of Groups of Individuals Due to Past Experiences

Figure 2 The Influence of Past Experience Translated to the Perception of Students in Class

CONCLUSION

In general, it was noted that the respondents have various unconscious biasness towards certain groups of individuals and it was due to their past connections and experiences with certain groups. It was also seen that these unconscious bias also translates into the class and affects the judgement of teachers, though unknowingly and unintentionally.

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ENGAGING, ENRICHING AND EMPOWERING HIGHER EDUCATION INSTITUTION STUDENTS THROUGH PASTORAL CARE

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Abstract

Improving student academic performance is one of the key objectives for higher education institutions as it not only leads to student retention but most notably, boosts their confidence in performing reasonably better than before. The probability of the students continuing the programme is high should they experience some improvement in their academic performance. Hence, intervention to assist at-risk dropout students is important. Inspired by Hawthorne Studies, an evaluation of pastoral care intervention was trialled among 30 Diploma in Business Administration (DBA) students at Sunway College Johor Bahru. Students from various intakes were selected based on their first semester academic results. Those with poor academic performance were chosen for this research. In evaluating the impact of the intervention trial, it is found that the intervention was a qualified success. It is both simple and cost-effective and should be considered for wider implementation and further evaluation.

Keywords: pastoral care, academic performance, at-risk dropout students, Hawthorne Studies, higher education institution

INTRODUCTION

Every semester, in higher education institutions, there will be students who fail some modules and/or withdraw from the programme. Despite the various interesting methods used by the academic staff to deliver the contents of the modules to these students, there will still be some students who face challenges in passing the modules and completing the programme. Hence, intervention from higher education institutions is needed to aid these students to complete the programme smoothly and successfully.

METHODOLOGY

A qualitative research using naturalistic observation (an observational approach) was initiated to study the effectiveness of pastoral care provision on students in this programme.

The trial provision of pastoral care was undertaken in the 2014 and 2015 academic years. In this experiment, students were chosen based on their first semester academic performance. Those who failed more than half of the allocated modules were included in this research. With this selection criterion, 30 samples were selected. Upon selection, each of the chosen students was approached by the author individually for a heart-to-heart talk before the commencement of the following semester (semester 2).

RESULTS

At the end of the experiment, the result had shown that out of the 30 at-risk dropout students, 21 (70%) of them had completed the programme on time and successfully; 5 (16%) of them still had one or two failed papers to be taken in the subsequent semester(s) before completing the programme; and 4 (13%) of the students dropped out from the programme.

This is a tremendous improvement if a comparison is made with the result of 2013 at-risk cohort in terms of programme completion percentage prior to the intervention. Before the provision of pastoral care, out of 24 at-risk students, only 3 (12.5%) of them managed to complete the DBA programme. The remaining 21 (87.5%) students had dropped out from the programme.

DISCUSSION

The result has revealed pastoral care intervention to the at-risk dropout students is effective. With the attention given to these weaker students, it can be seen that 70 percent of them were able to complete the programme smoothly and successfully. This has shown that these students enjoyed the attention given by the staff of the College.

Although the result of this experiment has revealed success of this research, there are some critiques to the provision of pastoral care to at-risk dropout students. Some researchers raised the concern of whether providing pastoral care to these weak students will do them more good than harm, or more harm than good.

CONCLUSION

Whether pastoral care provision does more good than harm or otherwise, there are always two sides of a coin to a decision. Hence, it is paramount for a higher education institution not to 'overdo' when it comes to pastoral care provision. In a nutshell, although the sample size was small, the trial pastoral care initiative was a qualified success. Students who have experienced the provision of pastoral care are able to perform better in their academic progression.

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EMPOWER, ENGAGE AND ENRICH STUDENTS THROUGH GROUP ASSIGNMENTS – A CASE OF ACADEMIC RESEARCH SKILLS OF DIPLOMA STUDENTS

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Abstract

Education institutions endeavouring to bridge the gap between expectation of students and provision of holistic education may gauge students' needs and concerns through their academic writings. Engagement of students are fostered via the free choice of team members for group assignments and they are empowered to generate their topics for the subject of Academic Research Skills. These topics are categorised to identify the areas of students' campus life where actions may be taken to enhance their learning experience. This paper explores the possibility of improving students' campus life by channelling information of students' needs and concerns to the appropriate departments.

Keywords: group assignment, campus life, enrich, learning experience, students' needs

INTRODUCTION

The largest population of Sunway College Johor Bahru consists of students in the diploma programmes. Students from the Diploma in Business Administration (DIPBA) programme enrol for six subjects during the long semester which is equivalent to twenty-one learning hours per week. Other than students who live in the hostel, time spent in the college doing assignments, lecturers' consultations and students' activities

constitute the major part of a student's life. Therefore, it is essential for the institution to understand the quality of the students' campus life. It is the responsibility of all the members in the institution to ensure the quality of students' campus life by fulfilling the students' actual needs and concerns.

This paper focuses on how a group assignment could help the institution to better understand its students' concerns. In this case, Academic Research Skills (ARS) is the chosen subject to be studied as it is a highly empowering subject, designed based on student-centred learning or often referred to as Project-Based Learning (PBL). Students are asked to form groups of five to execute a mini research under the supervision of their lecturer. Allowing students to choose their own groups could increase their engagement and motivation to learn and improve academic performance (Belanger, 2016, Sormunen, Tanni, & Heinstrom, 2013). Students are granted ultimate freedom to choose any topic which concern them the most. Engaging students in group projects will enable them to attain a higher level of achievement by venturing beyond their comfort zone in pursuit of the tasks they themselves have chosen (Overby, 2011). Since it is a research-based assignment, all the feedback provided by the students are empirically tested and feedback from the assignments would have higher validity and reliability.

Problem Statement (Law, 2017) (Murugan, 2017) (Low, 2017) (Wong, 2017) (Yap, 2017) (Goo, 2017)

Students' written works provide a precious firsthand information of their needs and concerns. Often lecturers come across creative ideas or constructive suggestions in their assignments. However, these are normally returned or filed away in the storeroom. Is it possible that these voices are heard by the right person? Meanwhile, MyQUEST evaluates students' satisfaction using an index based on facilities and support services which reflect the experience of students throughout their two years of campus life. Enriching the campus life of students is thus one area for Sunway College Johor Bahru to look into for continuous excellence. According to Kavatekar & Vijaya (2017), there are gaps between students' expectations and what educational institutions are providing. Bridging these gaps and enhancing the quality of education as a whole are the challenges faced by all educational institutions. This gap also exists in Sunway College Johor Bahru. Since we always have the chance of discerning the students' needs and concerns through their written assignments, why don't we harness this information to bridge the gap?

Research Objective

This study focuses on understanding how empowerment and engagement in students' group assignments can help to enrich students' campus life.

RESEARCH METHOD

This exploratory research relies on qualitative approach which is flexible in nature and the results of the study are not generalisable to the population (Sekaran & Bougie, 2016). The various topics generated in the assignments help to identify the students' concerns from different angles and perspectives. The population for this case study is 50 students from the DIPBA programme, August 2016 batch who undertook Academic Research Skills for the session from August to December 2017 under the supervision of the second author. Total sampling method is applied in this case study; all fifty students were divided into groups of five. A total of ten sets of data is collected at the end of the semester.

There are three steps in qualitative data analysis: data reduction, data display, and the drawing of conclusion (Miles & Huberman, 1994). All ten sets of data are coded and categorised. All the data is then tabulated according to their title, findings and recommendations. This data display may help to draw conclusions based on the pattern in the reduced set of data.

RESULTS AND DISCUSSION

Six reduced sets of data are selected from the students' assignments for this paper. The topics are categorised into two areas: college administration and student lifestyle as shown in Table 1.

Table 1   Topics of the ARS Group Assignments

Areas	College Administration	Student Lifestyle
Topics	• Cashless payment	• Dress code • Alcohol consumption • Game addiction • Text neck • Sexting

Each topic is analysed and discussed in detail. For example, under the topic of alcohol consumption, it is found that more than 50% of the respondents have drinking habits after school and 29 of them drink once a week. The main reasons for drinking are identified as emotional problems and influence of friends. The recommendations given by students include, among others, to increase the operation hours of recreational facilities in campus such as basketball, Futsal and table tennis courts. This reflects their need of an avenue to have physical exercise as an outlet of their emotional frustration or as a healthier alternative to going to the pubs which are available within the vicinity of the college especially in the evenings. The college may have built many facilities but

they are not opened to the students during hours they are needed. This is an area for consideration of improvement in the direction of enhancing students' campus life.

CONCLUSION

The assignment topics generated by the diploma students reveal the concerns or issues faced by them and their recommendations reflect their subconscious needs. Harnessing this information as guidelines for our institution to respond accordingly, would improve students' campus life quality which could in turn impact the students' satisfaction index during MyQUEST's audit.

This case study research approach shows us some insights into the situation. However, it cannot be generalised for the population. A quantitative research is hereby recommended to study the students' satisfaction index in the future which is crucial to measure the outcome of the responses implemented.

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MS TEAMS AND GOOGLE CLASSROOM: PRELIMINARY QUALITATIVE COMPARISONS AND USER FEEDBACK

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Abstract

Microsoft Teams and Google Classroom represent two education apps, with the former being new and the latter more established. At Sunway College's Canadian International Matriculation Programme (CIMP), Google Classroom is the predominant e-platform for the dissemination of instructional material. Both education apps have been trialled for the instruction of A-level (ALE) Biology in 2015–2017. This article presents a qualitative assessment of the unique strengths of Microsoft Teams and Google Classroom from the viewpoint of instructors from both CIMP and ALE programmes. User feedback from the viewpoint of students is also reported.

INTRODUCTION

Google Classroom (GC) and Microsoft (MS) Teams are learning management systems designed to facilitate the creation, distribution and grading of assignments electronically (Google, 2017). GC made its debut in 2014 (Wikipedia, n.d.). While MS Teams debuted only in 2017, MS began to roll out its suite of education apps from the middle of 2016, including MS Classroom, which was succeeded by MS Teams midyear. MS Teams is the 'new kid on the block' and studies on its efficacy vis-à-vis GC are warranted due to the relative nascency of the former.

METHODOLOGY

A total of 98 students were studied. GC was trialled among Sunway College Kuala Lumpur (SCKL) A-level students of the January 2015 intake ($n = 65$), while MS Teams was used for July 2016 and September 2017 students ($n = 33$). Both platforms were used to disseminate Biology instructional material, collect and assess student work. User experience was gathered via quantitative self-report online questionnaires.

COMPARATIVE ANALYSIS

At the time of writing, common functionalities between both GC and MS include document collaboration, instructor's comments on assignments that cannot be erased by students and instant notifications. The unique strengths of both apps are tabulated below (Table 1). A detailed comparison of associated apps used along with Teams and Google are reported elsewhere (Davidson, P., Chong, Y. T. & Sidek, N., 2017a, b; Davidson, P. & Chong, Y. T., 2017b).

Table 1 Unique Strengths of Both Microsoft Teams and Google Classroom

	Microsoft Teams	**Google Classroom**
Unique strengths	• Instructor-led instantaneous student registration • Offline functionality available after syncing of associated apps (e.g. OneNote, Class Notebook, OneDrive) • Compatible with all 3 major platforms (PC, Android and iOS), finger/stylus functionality on any device with MS apps	• Admin-led mass student registration • Easy access to submissions via app or browser • Variety of 3rd party associated apps (rubrics, appending peer/instructor feedback to assignments) • Assignment filename auto-renamed with students' names

A comparison of both systems are tabulated as follows in Table 2.

Table 2 Summary Comparison of MS Teams and Google Classroom

Teams	Microsoft Teams	Google Classroom
Student registration	• Instructor is admin • One at a time • Instantaneous	• Instructors dependent on admin • *En masse* • Waiting time: 1 day
Student assignment submission	Student can't edit/delete document including instructor comments after submission	Student can't edit/delete document including instructor comments
Accessing submissions	• On PC only • Not yet if via app on handheld device (e.g. can't open Word)	Yes, via app or browser
Rubrics for marking	Not known	Yes, via 'Goobrics' app
Appending peer/ instructor feedback to assignment file	Not known	Yes, via 'Docappender' (import from G-forms) as exit survey/feedback, etc.
Student submission	Filename change manual	Filename auto-renamed with student's name
Connectivity	• Internet connection not required after syncing of OneNote, Class Notebook, OneDrive • Internet connection required only for apps other than OneNote, Class Notebook, OneDrive • Finger/stylus functionality on any device with MS Office	• Internet connection required always • Finger/stylus functionality only via GC app, not Chrome browser
Document collaboration	Yes	Yes
Graded work	• Instructor's comments can't be erased after posting • Note: student can 'Turn in Again' before deadline	• Instructor's comments can't be erased by students after 'returning to student' • Student can only edit after clicking "unsubmit" button • Graded submission converted to pdf, instructor's amendments allowed before and after 'returning to student', 'returning' multiple times allowed, updates saved
App availability	PC, Android and iOS	• Android and iOS • If PC, only via Bluestacks, with limitations (e.g. assignment not viewable in full screen mode if finger/stylus functionality used)
Instant alerts	Yes	Yes

Table 3 compares the storage drives associated with MS Teams and Google Classroom and represents an extension of the comparison of associated apps from Davidson and Chong (2017).

Table 3 Storage Drives Associated with MS and Google Classroom

Item	Microsoft Teams	Google Classroom
Subscription	Institutional	Institutional subscription
Drive	• Personal (e.g. OneDrive personal) or institutional subscription (e.g. OneDrive for Business • Can't upload multiple folders • Limited file number upload • Operable on non-MS OS • On PC, can copy all the file types to another location	• Institutional subscription only (Google File Stream) • Can upload multiple folders • Unlimited file number upload • Operable on non-Android OS • On PC, can only copy non-Google docs to another location (error message: Can't create G files ... yet) • Inconsistency in accessibility of unknown origin detected depending on network and/or location • G drive appears inconsistently, i.e. accessible at times, but not always (tested on 2 different PCs) • Folders created online not synced to PC (absent)

USER EXPERIENCE

Students were polled on their experience of using either OneNote (the predominant app used here under MS Teams) or GC. Items which garnered an outright favourable majority were for accessibility and future relevance (Table 4).

Table 4 Student Experience of Either OneNote or Google Classroom (*n* = 98)

OneNote/Google Classroom	Percentage (%)		
	Disagree mostly	Neutral	Agree mostly
... is an effective way to access materials	33	22	45
... enables me to access learning anywhere and anytime	17	16	66
... gives me more chances to attempt practice questions	22	41	37
... becomes more relevant if my future university conducts e-learning	11	22	66
... diminishes the importance of attending classes	38	26	37

A more detailed treatment of preliminary technical issues pertaining to MS Teams have been documented elsewhere (Davidson and Chong, 2018).

CONCLUSION

Despite entering the education arena relatively late, MS Teams and its related apps have proven to be a close rival to dominant systems such as Google Classroom and its associated apps. While MS Teams and other MS's education suite of apps are limited in variety, one major drawback of Google Classroom is the lack of a book-like centralised platform feature which enables offline working on a variety of associated apps to the degree that MS apps allow. This is where MS apps associated with MS Teams are unrivalled (e.g. OneNote and Class Notebook). While in the future the gap between both GC and MS Teams is expected to narrow, decision on its use eventually rests on user's needs, preferences, platforms and devices accessible.

DISCLAIMER

This report may have been limited by the time during which the authors accessed the apps, which might have undergone improvements after the time of writing.

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TECHNOLOGY-EMBEDDED ASSESSMENT IN MAKING LEARNING VISIBLE

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Abstract

The aim of this study is to examine the importance of technology-embedded assessments and its efficiency in assessing and assisting students' learning as a whole. The 'Bring Your Own Device' (BYOD) initiative in Sunway College Johor Bahru has primarily increased the need for lecturers to shift their traditional teaching and assessment pedagogy to a revolutionised modus operandi of delivering the lecture and measuring students' understanding. This paper focuses on the various technology-embedded assessments that lecturers are exposed to during the development of this initiative and their feedback gathered at the end of the year on implementing these methods in their teaching especially in conducting continuous formative assessments that embed technology. Three factors were identified by the lecturers as the main indicators of how technology-embedded assessment makes learning of the students visible – (i) lecturers are able to provide and receive instant feedback, (ii) elevate students' engagement in the classroom and, (iii) mounting formative assessments beyond the classroom setup. Based on these results, another survey was designed to collect data from the students to further support the findings.

Keywords: BYOD, technology, assessment

INTRODUCTION

According to UNESCO (2005), assessment is the most common yet reliable tool in measuring students' learning. Assessment in a bigger picture allows those in the education system to diagnose, monitor and improve teaching and learning which heightens the quality of education as a whole. Therefore, it is vital for educators to understand the importance of the assessment so that it will be best used not only to measure the knowledge and skills that students learn but to also provide feedback to the educators if their teaching is parallel to the learning outcome.

Formative assessment is designed to provide continuous feedback in achieving everyday lesson objectives which is often informal. Alternatively, summative assessment is designed to give accurate judgement of knowledge and skills learnt in very formal procedures such as examinations under strict conditions. The extent to which an assessment measures what is intended is known as its validity, and how accurately it measures is known as its reliability. The aim of every assessment is to have maximum validity and reliability, but in practice this is often difficult to manage for reasons such as time limitations (Paul, 2015).

A study conducted by Zhu (2010) in China, reveals that in this world of technology, the education sector is no exemption when it comes to adopting and shifting its paradigm towards more innovative strategies in delivering knowledge and assessing students in the classroom. However, this can be a real challenge without proper guidance and training for the educators. Davis and Roblyer (2015), confirmed that there is a need to create an environment that provides facilities and training that will expose educators to understand the need for this paradigm shift, and consequently to adopt significant innovation into their teaching and creating the assessment for their students.

Implanting technology into any assessment task is purposeful, and this proves as somewhat of a challenge for educators to gain the necessary pedagogical knowledge, technical competence and most importantly, confidence to implement productive technology-based tasks in their classrooms. This approach to assessment provides an opportunity for students to develop and demonstrate standard and subject-specific learning outcomes in an engaging way as well as gain experience with appropriate technologies. Best of all, it would be applicable beyond the narrow scope of the subject syllabus (Natalie, 2009).

METHODS

The 'Bring Your Own Device' (BYOD) project was initiated at Sunway College Johor Bahru in 2017 to encourage Pre-University students to bring their own electronic devices tailored to suit the pedagogical approaches of the 21st century classroom which mainly focus on creativity, critical thinking, communication and collaboration.

30 lecturers teaching three Pre-University programmes, namely, Monash University Foundation Year (MUFY), Australian Matriculation (AUSMAT) and A-Levels were exposed to various workshops throughout the year providing knowledge and skills in adopting technology-incorporated lessons. The workshops also focused on introducing numerous technology-supported assessment methods and mobile applications that help to gauge the students learning in the classroom. Lecturers were exposed to various technology-embedded assessment methods such as, but not limited, to OneNote, Socrative, Plickers, Kahoot!, Vizia, BookWidgets and Padlet. A survey was conducted at the end of the year to gather feedback from these lecturers on how these workshops benefited them and their students in terms of teaching and learning while meeting the expectations of the project. Another survey was also conducted to gather data from 142 students fairly distributed among the three Pre-University programmes to further support the findings.

RESULTS AND DISCUSSION

Lecturer's survey showed that 87% of the lecturers agreed that the workshop sessions were informative and useful. 73% of the lecturers agreed that the workshops were tailored to their needs in implementing the BYOD project. 67% of the lecturers agreed that the BYOD project has revolutionised teaching and learning in class, whilst also meeting individual subject-specific learning outcomes, whereas the remaining 23% were neutral about this.

Student's survey showed that all the students have a smartphone, 82% of them own a laptop and 28% of them own a tablet. 93% of the students have agreed that these devices are used in the classroom for teaching and learning purposes. Students have also indicated that they are very comfortable in using these devices frequently mainly to find information related to subject matter, to complete and submit internal assessments in class and to communicate with peers and lecturers regarding the subject matter.

From the lecturer's survey, the lecturers have indicated the following three factors as the main indicators of how technology-embedded assessment makes learning of the students visible.

(i) Lecturers are Able to Provide/Receive Immediate Feedback

Lecturers are able to monitor and gauge students learning by giving multiple technology-embedded formative assessments which enabled them to provide instant feedback. This also helps the lecturers to systematically plan and alter their teaching based on students' response, performance and need. Student's survey showed that 89% of students have agreed that technology-embedded assessment enabled students to receive immediate feedback from their lecturers.

(ii) Students are Engaged in Learning Using Various Mobile Learning Applications

Lecturers' feedback that students' engagement in class have significantly increased when lessons and assessments are integrated with technology. Student's survey showed that 78% of students show great interest in participating and completing the tasks using mobile devices and mobile applications.

(iii) Assessment Beyond the Classroom Setup

Technology has wrecked the barrier of classroom-setup formative assessments and has evolved to measure students beyond the classroom. Student's survey further showed that 90% of students are agreeable that they are assessed not merely on their knowledge but also their capability of applying their understanding in real-life situations and with the help of technology these are not bounded within the vicinity of the classroom.

CONCLUSION

Technology-embedded assessments can often accommodate more complex tasks, enabling more aspects of the students' performance to be captured while making their learning visible. Although the lecturers may seem reluctant to adapt to such approaches in the beginning, with proper exposure, guidance and training, lecturers are able to familiarise and instrument these methods not only to teach but also to monitor and improve students' overall performance.

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INVESTIGATING THE BEHAVIOURIAL INTENTION OF STUDENTS TO PURSUE PRE-U PROGRAMMES VIA DISTANCE LEARNING: A CASE STUDY OF SUNWAY COLLEGE JOHOR BAHRU

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Abstract

This research aims to investigate the factors influencing the intention of students to pursue pre-university (Pre-U) programmes via distance learning. The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model was adopted after reviewing previous studies on distance learning and technology acceptance models. Primary data was collected via a questionnaire survey and analysed using the Statistical Package for Social Science (SPSS,2015) software. The analysis is divided into two major categories, namely descriptive statistics and inferential statistics (Chua, 2013). The description of characteristics of the respondents is provided using the descriptive indices such as frequency, percentage and mean scores. On the other hand, the analysis on the correlation of the variables and model validity is carried out using inferential statistics such as reliability test and Pearson correlation co-efficient analysis. The significance level for this study is determined at $p < 0.05$ based on 95% confidence interval to determine whether a significant relationship exists. The correlation coefficient (r) is used to measure the strength of the relationships between the variables. The value of r is between +1.00 and –1.00. Negative r represents the negative correlation where the relationship is inversed. The results showed a significant influence in most of the constructs such as performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation and habit on behavioural intention to pursue Pre-U programmes via distance learning, except for price value. Theoretical and practical implications of the research findings were discussed, particularly in terms of the factors that should be considered before launching distance learning programme.

Keywords: Pre-U programmes, distance learning, Unified Theory of Acceptance and Use of Technology 2 (UTAUT2)

INTRODUCTION

The Pre-U programmes provided by the college are delivered using face-to-face (F2F) methodology, which requires physical attendance of students at the college. Although many academic programmes are still delivered using the F2F methodology, more and more students are now nudging into learning that involves a variation of 'self-supported study' and flexible study patterns (Law, 1997). This is because students today are more technologically savvy and hence technology-based learning is becoming more popular at the university level (Gammie et al., 2002). According to Wang and Liu (2003), learners are able to embrace technology-based learning with the aid of sophisticated information technologies. The students are able to learn at his/her own pace, from anywhere and at anytime with no limitations on time and location of study. The distance learning programmes are student-centred learning methods which focus on the role of the student who plays the main role in learning. The learners will be able to enhance their self and time management skills via distance learning programmes. This gives rise to the possibility of conducting Pre-U programmes using a new, technology-based approach that empowers the students for 'self-supported study' and flexible study pattern.

METHODOLOGY

Based on the literature on UTAUT2 (Venkatesh et al., 2012), the research has identified the factors that affect the intention of students to enrol in Pre-U programmes via the distance learning mode. This research theorises on factors such as performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value and habit, and their effects on behavioural intention. This study applies the quantitative method which is a systematic empirical investigation using mathematical approaches to determine the relationships between the variables. In this context, various statistical analyses are carried out in order to confirm the influence of the constructs towards the dependent variable. The primary data collected from the survey are analysed using SPSS and Microsoft Excel software. Hence, the quantitative method enhances the foundation of the hypothetico-deductive approach (Sekaran and Bougie, 2013). The sampling design for this research is based on the simple random sampling of probability sampling. The population (N = 238 students) represents the total A-Level students in Sunway College JB. According to Sekaran and Bougie (2013), the appropriate sample size that should be taken is 148 students. A-Level students are chosen for the survey because they represent the majority of all the Pre-U programmes. The questionnaires are distributed to the students in different classes. All students are literate and volunteered to take part in the survey.

RESULTS AND DISCUSSION

The result shows that performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation and habit have significant influence on behavioural intention in pursuing Pre-U programmes via distance learning. However, only price value has no significant influence on behavioural intention in pursuing Pre-U programmes via distance learning.

Habit is ranked first in the correlation analysis, significant at the 0.05 level. The correlation strength is medium, yet very significant. This implies that habit has a strong effect on the intention of students to pursue Pre-U programmes via distance learning. However, this would only be applicable to students with previous online learning experience. Therefore, habit could be a critical construct to pay attention to when launching the distance learning programmes.

Performance expectancy is ranked second in the correlation test, also significant at 0.05 level. Likewise, the correlation strength is medium but very significant. Therefore, how the students perceive Pre-U programmes via distance learning is useful to their study, to be able to help them complete classwork more quickly and improve their productivity in their studies, would affect their behavioural intention.

Social influence is ranked third in the correlation test, significant at 0.05 level. Although the correlation strength is medium, it is very significant. The result implies that the intention of students to pursue Pre-U programmes via distance learning would be influenced by people who are connected to them, such as people who are important to them, people who can influence their behaviour and people whose opinions they value.

Hedonic motivation scored an r value of 0.454 with significance at 0.05 level. The correlation strength is medium, but significant. The result suggests that the feelings of fun, pleasure, enjoyable and entertaining derived at from using the distance learning platform play a significant role in determining the behavioural intention of students to pursue Pre-U programmes via distance learning.

This is followed by facilitating conditions with the correlation score of 0.379, significance at 0.05 level. The correlation strength is weak, yet it is significant. The result suggests that the intention in pursuing Pre-U programmes via distance learning is affected by the facilitating conditions, such as resources to use the platform, knowledge to use the platform, compatibility with other technologies and the help received from others when facing difficulties in using the platform. This might be due to the generation of the students who are more technologically savvy and who might have used any technology

similar to the distance learning platform. In addition, whilst the students have the experience, they are confident in using it and they know how to solve problems by themselves rather easily. Therefore, this explains why the correlational strength is weak.

The correlational strength between effort expectancy and behavioural intention is weak, but it is still significant. The result implies that the respondents are not affected strongly by this construct. This is probably due to their technologically-savvy background and hence, they are confident that they can handle the distance learning platform without any difficulty although they may not have used any distance learning platform before. The reason is similar to facilitating conditions as evident from the medium and significant correlation between the two constructs.

Finally, the result shows a very weak and insignificant correlation between price value and behavioural intention. This suggests that price value is not an important determinant in influencing the intention of students to pursue Pre-U programmes via distance learning. This may due to the fact that tuition fees are paid by their parents. Therefore, they cannot see price value as an issue to them.

CONCLUSION

The research has met its objectives in examining the factors influencing the intention of students in pursuing Pre-U programmes via distance learning. It is hoped that the findings and recommendations provide a useful guide to Sunway College JB in their decision to develop and offer Pre-U programmes via distance learning in the future. Future studies are required to further understand this emerging topic, taking into consideration the limitations inherent in this study.

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BLENDING PEER-TO-PEER LEARNING AND VISIBLE THINKING

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Abstract

Student disengagement is a global issue that is faced by many educators today. Student engagement has been the focus of most educational instituitions as a means to combat passive response to learning such as withdrawal and apathy. The emphasis on active learning places the responsibility of learning on the students' shoulder pushing them to engage in classroom discussions as well as activities involving listening and thinking (Upadhyaya, 2013), thus compelling them to take ownership of their own learning. The author proposes blending peer-to-peer learning and visible thinking to promote student engagement.

Keywords: student engagement, peer-to-peer learning, visible thinking

INTRODUCTION

Student engagement is a complex issue and a subject of on-going research. To be able to address the problem of student disengagement, educators must first be able to identify signs that indicate students are disengaged. Lane & Harris (2015), outlined some of the classical behaviours that indicate students are disengaged. These include zoning out in class, off-task behaviour and being distracted by another student.

To cover course content in a time-efficient way, many educators resort to lecture presentation and homework questions based on Bloom's taxanomy which students have to complete individually. However, these lectures promote passive learning where students view, listen and take notes (Felder & Brent, 2009) without being given

opportunities to explain any alternative ideas. In addition, the homework questions are only used to practice replication of facts and skills.

To address the topic of student engagement, we must first look at its definition. Gunuc and Kuzu (2014) defined student engagement as "... cognitive, emotional and behavioural reactions to the learning process as well as to in-class/out-of-class academic and social activities to achieve successful learning outcomes". For deep learning to take place, students must be actively engaged with their learning material. Bonwell & Eison (1991) claim that active learning involves dialogue, debate, writing, and problem solving, as well as higher-order thinking.

Peer-to-peer learning is defined as "the use of teaching and learning strategies in which students learn with and from each other without immediate intervention from the teacher" (Boud, Cohen & Sampson, 1999 p. 413). This involves students working in small groups to learn to solve a problem, share ideas and defend their views and grow as learners.

Visible thinking is "a conscious, deliberate set of actions that provides clear evidence of the current level of student knowledge and understanding" (Don S. Balka et al., 2011 p. 12). Visible thinking as applied to a group setting involves students demonstrating their thinking by orally articulating their thinking process as well as their peers, listening to their explanation on how the given problem was solved.

This paper looks at blending visible thinking with peer-to-peer learning – two active learning instructional strategies that could be used to maximise student learning. These activities share a common element, that is involving students in doing things and thinking about the things they are doing (Bonwell & Eison 1991).
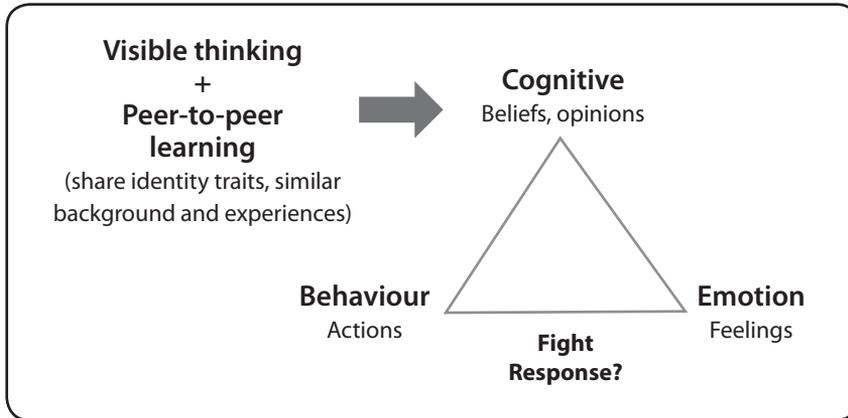
Research Questions

- Does blending visible thinking and peer-to-peer learning engage students' behaviour, cognition and emotions?

- Does blending visible thinking and peer-to-peer learning have a positive impact on their academic performance?

METHODOLOGY

This research involves pre-university students drawn from two classes – the Mathematics and Computer Science class. Classroom observation and tests were the primary sources of data used for this study. Classroom observation is used to note the pattern of student behaviour that is used to define engagement (Lane & Harris, 2015). Tests were used to make comparisons between direct teaching and blending the two active learning strategies mentioned above.

Observation

The three dimensions of engagement were used to measure student engagement. Students were given tasks that involved summarising and verbalising their understanding of the given problems as well as engaging in intellectual work using visible thinking routines to engage their cognition.
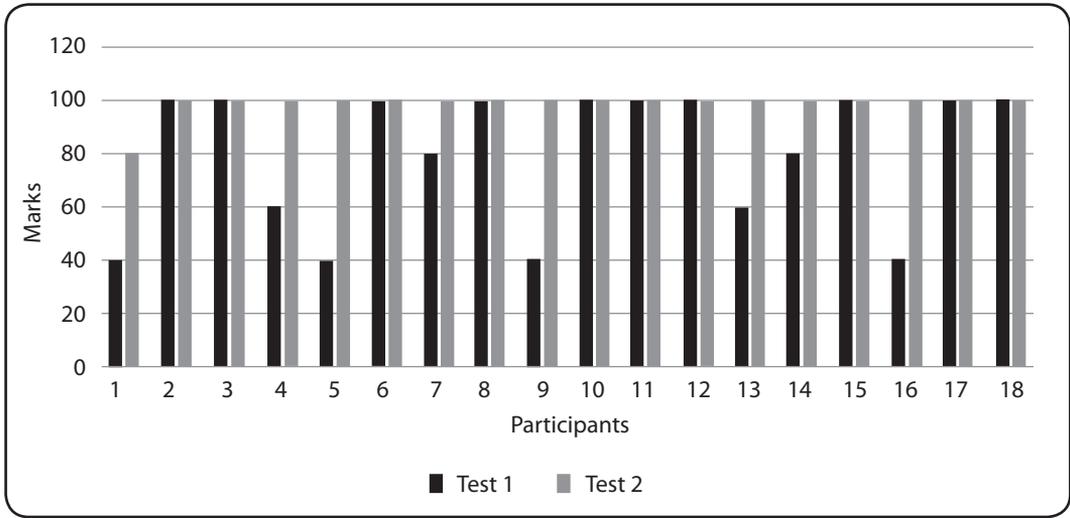

Figure 1

To ensure their fight response is triggered, instead of their flight response, peer-to-peer learning is combined with visible thinking when students were provided with cognitive learning activities. Students in-class behaviour were observed and classified in the following table.

Table 1 Description of In-class Behaviour that Indicates Students are Engaged
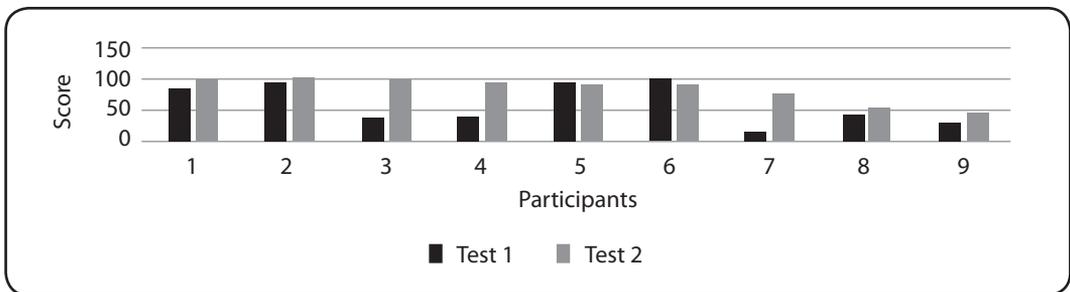
Listening	• Students were listening to their peers' ideas and strategies on solving tasks. • Appropriate gestures such as leaning forward and maintaining eye contact with peers.
Writing	• Students were solving problems based on in-class activities given by educators. • Sample program was written using computer programs (solutions were transcribed back on paper or captured and stored on cloud drive). • Students put their solutions online (Padlet).
Peer-to-peer interaction	• There was interaction going on between peers working in groups of two on related subject materials. There was also interaction going on in different groups where various ideas were exchanged. • Students who presented their solution on the whiteboard vocalised his/her cognitive understanding on how they approached the given problem and the steps they took to solve it.
Valence (used for measuring emotional engagement)	• Most of the students were giving their full concentration on the task at hand. There were no cases of yawning or zoning out. • There were some instances of talking with a friend – mostly passing a comment but their attention quickly went back to the task at hand. • There were instances of the A-ha moment when peer explained to weaker students certain steps used to solve problems.

Class Test

As this is a preliminary study, class tests were used to ascertain whether there is a positive link between blending peer learning and visible thinking, and academic performance. Test 1 was conducted after direct teaching was used, whereas Test 2 was conducted after blending peer-to-peer learning with visible thinking strategy.

Figure 2 Pre-Test and Post-Test Comparison: Mathematics

Figure 3 Pre-Test and Post-Test Comparison: Computer Science

The post-test results indicate a significant improvement in students' test results after blending the two active learning strategies. Blending visible thinking and peer-to-peer learning has a higher impact on students' academic performance compared to direct teaching.

CONCLUSION

The findings suggest that blending visible thinking and peer-to-peer learning does have a positive influence on the three dimensions of engagement. This in turn creates a positive impact on students' academic performance. The implication of this study suggests that instructors need to move from direct teaching to empowering their students by focusing on transferring the responsibility of learning to their students.

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STUDENTS' PERCEPTION OF LEARNING THROUGH REFLECTION USING 3-2-1 STRATEGY

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Abstract

Reflection is one of the vital parts of the active learning process and has escalated interest among researchers to produce literature highlighting the benefits of reflection. Learning through reflection is said to be the most interesting way of learning and a beneficial tool for self-assessment among students (Costa and Kallick, 2008). Reflection is basically a process that begins with looking back on a situation, pondering over it, learning from it and then using the new knowledge to help you in future similar situations. The purpose of this paper is to report students' perspective on reflection in learning using 3-2-1 strategy. The study used a quantitative and qualitative method to analyse the students' perception of learning through reflection, using a 19-item questionnaire. The study was conducted over a duration of 6 weeks. The participants were a group of 25 students who took the Mathematics subject in the Cambridge International A-Level Programme at Sunway College Johor Bahru. The study obtained positive results, in that the students perceived learning through reflection as an effective way to promote their metacognition and enhance their habits of learning. In addition, students responded that they have better control and participation in their learning.

Keywords: reflection, quantitative method, habits of learning

INTRODUCTION

Critical thinking, problem solving, communication and collaboration are deemed to be the 21st century skills that students must possess if they want to succeed in today's world. Nowadays the education system requires students to acquire new information as problems arise and then connect the new information with the knowledge they already know and apply it to solving the problem at hand. Studies show that reflective learning helps students to develop critical thinking skills and improve their learning experience. It is a very good tool for self-assessment learning (Costa and Kallick, 2008). Reflective learning gives students the opportunity to explain their thinking and problem-solving strategies; it also encourages students to become more self-aware and supports their ability to connect theoretical concepts to practical experiences (David, 2015; Dunlap, 2006). Reflection is basically a process that begins by looking back on a situation, pondering over it, learning from it and then using the new knowledge to help you in future similar situations. Generally, reflective learning can be implemented in many ways such as discussions, interviews, questioning, logs and journals. Studies show that the 3-2-1 strategy is an effective approach to encourage learners to think independently and to be engaged personally (Alsamadani, 2011). This strategy promotes students' reflection and metacognition. In addition, studies show that students who learn reflection skills in their undergraduate studies and continue to perfect those skills after graduation, have more success with professional growth and competencies than those who do not (Murphy, Halton & Dempsey, 2008; Ruch, 2002). However, little is said about the outcome of reflection from the perspective of students. The purpose of this paper is to report students' perspective on reflection in learning using the 3-2-1 strategy. This study used a quantitative and qualitative approach. The study obtained positive results, that the students perceived learning through reflection as an effective way to promote their metacognition and enhance their habits of learning. In addition, students responded that they have better control and participation in their learning.

RESEARCH PROBLEM

This study sought to find answers to the following research question:

How do the students perceive the use of 3-2-1 strategy in learning A-Level Mathematics?

OBJECTIVE OF THE STUDY

The research objectives of this study are to:

1   Understand the students' affective acceptance of using the 3-2-1 strategy in learning A-Level Mathematics.
2   Understand the students' perception of learning improvement in A-Level Mathematics by using the 3-2-1 strategy.

RESEARCH METHODOLOGY

This project used a quantitative and qualitative approach to analyse the students' perception of learning through reflection, using the 3-2-1 strategy. The setting of the project was a Mathematics (9709) class, involving a total number of 25 students. These students, are enrolled in the Cambridge GCE A-Level Programme at Sunway College Johor Bahru. The students represented a broad spectrum of cultural and socioeconomic backgrounds. The study was conducted over a duration of 6 weeks. One of the researchers, who was the subject lecturer, has employed the 3-2-1 strategy, twice in each week, at the end of the lessons. The 3-2-1 strategy included 3 reflective problem statements that required the students to record some main concepts, connected ideas of the syllabus contents or some specific exam techniques that was learnt in a lesson (Dunlap, 2006). The lecturer reviewed the students' work and gave feedback to the students for any misconceptions of the lesson taught. On the seventh week, the participants filled out a questionnaire to inform their perceptions of learning through reflection using the 3-2-1 strategy. The questionnaire comprises 18 close-ended questions and 1 open-ended question. The close-ended items are based on the 4-point Likert Scale (1, 2, 3 and 4) indicating strongly disagree, disagree, agree and strongly agree, respectively. The open-ended question asked for the students' comments and suggestions about the 3-2-1 strategy. The questionnaire was designed by the researchers with some inspiration from Leong's (2016) study. The questionnaire measured students' perception in accordance with the two objectives. Questions 1 to 10 measured the first objective about students' affective acceptance of the 3-2-1 strategy, and questions 11 to 18 examined the second objective about students' perception of learning improvement by using the 3-2-1 strategy. The data was analysed using descriptive statistics and Cronbach's alpha value, α.

RESULTS AND DISCUSSION

Table 1 The Students' Affective Acceptance – Positive Dimension

No	Students Affective Acceptance – Positive Dimension	*α* 0.77	Mean 2.84	SD 0.72
	Descriptions	**1 – Strongly disagree 2 – Disagree**	**3 – Agree 4 – Strongly agree**	
1	I find it easier to consolidate the important points of a lesson using 3-2-1 strategy.	30%	70%	
2	As a method of reflection, I think 3-2-1 strategy is simple.	22%	78%	
3	I feel more comfortable to inform my teacher about my learning, by using 3-2-1 strategy.	22%	78%	
4	3-2-1 strategy provides me with a two-way communication with my teacher.	30%	70%	
5	There are lots of advantages in using 3-2-1 strategy as a tool of reflection.	30%	70%	
6	I feel encouraged to participate in class and respond to my teacher.	26%	74%	
7	I want to use 3-2-1 strategy in other subject/s.	61%	39%	

The results displayed a noteworthy pattern of students' perception. Those items in Table 1 obtained *α* = 0.77, indicating that these items have an acceptable reliability in measuring the students' affective acceptance in the positive dimension. The mean (2.84) and the percentages uniformly showed that students have positive acceptance of the strategy. The items in Table 2 obtained *α* = 0.67, which is slightly lower. It could be due to a small number of items being measured in this dimension. However, the mean (1.97) and the percentages strongly supported the results in Table 1. Table 3 has also indicated that

Table 2 The Students' Affective Acceptance – Negative Dimension

No	Students' Affective Acceptance – Negative Dimension	*α* 0.67	Mean 1.97	SD 0.64
	Descriptions	**1 – Strongly disagree 2 – Disagree**	**3 – Agree 4 – Strongly agree**	
8	Using 3-2-1 strategy to reflect on my learning is a waste of time.	87%	13%	
9	3-2-1 strategy is time consuming.	70%	30%	
10	In the future, I do not want to use 3-2-1 strategy.	87%	13%	

Table 3 The Students' Perception of Learning Improvement by Using 3-2-1 Strategy

Students' Perception of Learning Improvement by Using 3-2-1 Strategy		*α*	Mean	SD
		0.80	2.72	0.65
No	**Descriptions**		**1 – Strongly disagree** **2 – Disagree**	**3 – Agree** **4 – Strongly agree**
11	3-2-1 strategy is effective, overall, in helping me to learn the subject.		39%	61%
12	3-2-1 strategy provides me with good learning opportunities that I have never tried before in usual mathematics classes.		30%	70%
13	It is easier for me to understand the class notes after practising 3-2-1 strategy.		43%	57%
14	3-2-1 strategy helps me to understand the conceptual knowledge better.		43%	57%
15	3-2-1 strategy encourages me to think on my own.		26%	74%
16	3-2-1 strategy helps me to understand what is expected of me in preparing for examinations.		35%	65%
17	When I use 3-2-1 strategy to reflect on my learning, I'm more able to solve post-class activities.		39%	61%
18	When I use 3-2-1 strategy to reflect on my learning, I've improved my test performance.		48%	52%

students perceived that they have learning improvement after using the 3-2-1 strategy, with *α* = 0.80 and mean (2.72). For item 15, 74% of the students seem to feel that the 3-2-1 strategy encourages them to work on their metacognition. 70% of them agreed that the strategy has given them a good learning opportunity which is effective in helping them to learn the subject. The reason may be because they find it easier to understand the class notes and thereafter they can understand the conceptual knowledge better. The students also agreed that the strategy makes them understand what is expected in an examination. Therefore, they perceived the individual ability to solve post-class activities and the performance in assessments has improved. The quantitative results were supported by the students' comments and suggestions. Students mentioned that the strategy has helped them to conclude and reflect on what they have learnt. They found it useful to summarise the main points and to find out what they do not know. The results of this study has answered the research question. This study obtained positive response from the students as most of them welcomed and accepted the 3-2-1 strategy in learning Mathematics. This positive feeling influences the students' learning and contributed to the students' improvement (Odafe, 2007). This study provides a ground for future studies to investigate the effectiveness of the 3-2-1 strategy in student learning.

CONCLUSION

The 3-2-1 strategy provides a more engaging way for educators to teach the students to be more reflective in their learning. The students are provided with an opportunity to be more conscious about their metacognition in order to reflect explicitly and improve on their study habits and learning process. The strategy, on the other hand, provides teachers with significant information to evaluate the students' learning ability and knowledge understanding. As a result, the strategy contributed positively to the teaching and learning process. Future study is recommended with a larger sample size or lower grades to further enhance the value of the current research.

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OUTDOOR EXPERIENTIAL LEARNING

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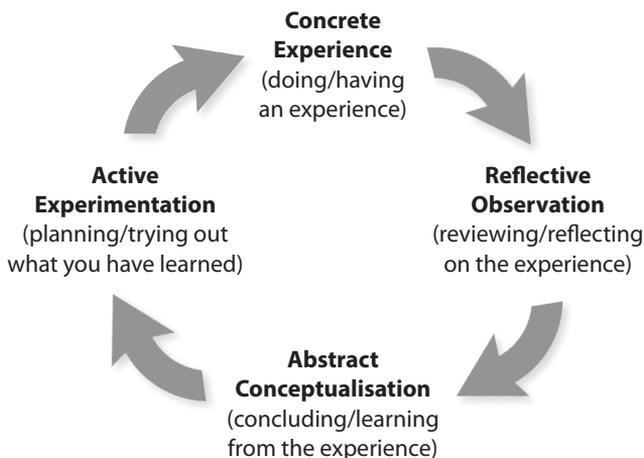Sunway College Johor Bahru

Abstract

Today's students can access information and gain knowledge through internet easily. Hence, teacher-centred classroom or merely lecturing are not so acceptable and effective to them. Their preferred ways of learning are through action, by doing, via discovery and exploration which are proven effective by past and recent studies. This paper focuses on the effect of outdoor experiential learning of English Enrichment Programme students in Sunway College Johor Bahru. The students were observed and assessed before and after each field trip. A task-based assignment was administered and discussed prior to the trip. Students were exposed to first-hand experience related to the topics or concepts being discussed in their course modules. The overall responses from students were very positive prior to the field trip and became more positive at the end of the field trip experience. Post-field trip reflections were shared and assessed via their oral presentations and submission of field trip reports. The study concludes that the field trip is beneficial and sheds light on application of outdoor experiential learning to both Business English teachers and students. More importantly, the students gain unique opportunities to experience business knowledge and English language which help to enhance their learning within the four walls of their classroom. Therefore, experiential learning will always be the most fruitful practice in education.

Keywords: experiential learning, discovery, exploration, task-based assignment, reflection

INTRODUCTION

The traditional learning process, like chalk and talk, teacher-centred classroom was considered outdated. Knowledgeable educators constructed and transmitted knowledge on a particular topic to learners using the accepted instructional technologies of the day – course book, tutorial and lectures which failed to inspire students. Brent (1999), commented this type of typical teaching and learning environments were often "too predictable, static, unchallenging and boring, particularly when compared with other 'real-world' environments that competed sources of attention in learning".

Ancient Chinese Philosopher Master Confucius (551 BC–479 BC) quoted: "I hear and I forget. I see and I remember. I do and I understand." Confucius wanted to tell us that people can learn something well only if they take an active part in learning. Similarly, notable educational psychologists such as John Dewey (1859–1952), Carl Rogers (1902 – 1987) and David Kolb (1939 – present), have laid the groundwork of learning theories that focus on "learning through experience" or learning by doing. John Dewey clearly stated that human beings would acquire knowledge more readily by "hands-on" approach. David Kolb defined "Learning is the process whereby knowledge is created through the transformation of experience". He developed the modern theory of experiential learning (EL) known as Kolb's Experiential Learning Model (ELM) as shown in Figure 1. This model consists of four elements, namely concrete experience, reflective observation, abstract conceptualisation and active experimentation. These four elements are the essence of a learning spiral that can begin with any of the four elements, but typically begins with a concrete experience.

Concrete Experience (doing/having an experience)

Reflective Observation (reviewing/reflecting on the experience)

Abstract Conceptualisation (concluding/learning from the experience)

Active Experimentation (planning/trying out what you have learned)

Figure 1 David Kolb's Experiential Learning Model (ELM)

Many recent researchers had adopted Kolb's ELM in teaching their students. Claiborne (2011) discovered teaching and learning could become inherently spontaneous and student-centred when moved from the confines of the classroom into the world at large. April (2012) stated that "learning experiences outside the classroom were inherently interdisciplinary. When students were exposed to the world, they encountered it as a whole and were focused to engage in multiple modalities, no matter which pair of disciplinary 'lenses' they intended to wear".

Dong-dong Yu (2017) supported Rea (2008), that EL had to feature direct experience as an issue of prime importance. According to him, the teachers might device and articulate learning objectives for students, but what the students had learnt from the resulting experience might be quite different. To overcome the mismatch of outdoor learning objectives, he proposed that teachers were encouraged to lend and offer various outdoor tasks to students. During the process of finishing the given tasks, students participated in, and experienced the use of authentic language. At the same time, they interacted and incorporated with other participants. Thus, the outcomes of this EL gave full play to their cognitive ability and what they had already learnt to analyse and solve the problem autonomously.

Brown (2000) concluded the EL as constructivist learning, where students were active learners. They had a tendency to construct their own knowledge, rather than observing the demonstrative behaviour of a lecturer. The hands-on nature of experiential learning was highly motivated for students.

All the past and recent studies had shown positive results which were consistent with the six benefits of ELM as stated by Kolb (Napier, 2015). Firstly, both teachers and students were more flexible and open-minded. Secondly, students were happy to be exposed to new situations. Thirdly, students were good at listening to others and grasping information. Fourthly, students were good at asking and probing questions. Fifthly and lastly, the teaching and learning process became business-like and got straight to the point and more technical oriented.

DESCRIPTION OF CLASS ACTIVITY
USING EXPERIENTIAL LEARNING

This study also adapted Kolb's ELM to conduct a project-based learning activity. The study participants were chosen from VU English for Business Enrichment programme (VUEFB) of Sunway College Johor Bahru. The objective of this project was to relate the concepts of changes in socio-cultural context of a local community. Three research instruments: semi-structured interviews, non-participation observation and reflection

feedback were used to facilitate the project. Each project was conducted in three stages, namely: pre-trip, on-trip and post-trip, and completed within a period of 5–6 weeks. This similar project was being conducted for four semesters in three different venues.

Pre-trip stage was conducted inside the classroom. The teacher gave lectures in class based on selected units related to the assignment questions. Most of the time, basic knowledge and key concepts like definition and main aspects of the topics were elicited. The students were briefed about the site and social background. Then, they worked in small groups to brainstorm, discuss and prepare some questionnaires for data collection to support their assignment. This stage was monitored by the teacher.

On-trip stage was conducted outside the classroom. The teacher arranged transport, ensured proper documentation and approved budget before embarking on a three-hour tour of visiting the selected site. Students displayed teamwork and worked in pairs. They typically explored nature and their surrounding environment. They observed, discussed and interviewed local representatives based on some prepared questionnaires and ad hoc feedback. They took photos, chatted and discussed among themselves. They experienced the life-style of local communities. They discovered local cultures and learnt new skills from them. They interacted happily with their peers and lecturer. Lastly, they also tasted local cuisine. They were also required to think on/plan out real-life examples of Corporate Social Responsibility on how to improve the local community. During this period, the teacher assumed the role of a facilitator and guided each group, gave prompt feedback to any queries or challenges posed by the group.

Post-trip stage was conducted inside the classroom. The students were gathered to share their findings with photos, while the teacher played the role as a facilitator to conceptualise and string out the facts to the rest of the class. Each group was asked to prepare a field trip report and present in class with visual aids such as power point slides, and time was given for a question and answer session. At the end of the lesson, the teacher summarised the findings of each group. The presentation formed a part of their course work assessment instrument for both speaking and written skills, whereby the teacher commented and assessed each group's presentation of the field trip report. The group was also given a week to submit their written field trip report via Turnitin, an internet-based plagiarism-prevention service tool, and the report was examined by the teacher as a separate assessable item from the group's presentation.

FINDINGS AND DISCUSSION

The findings of this qualitative study showed positive evidences on students' performance based on the research instruments as mentioned above. The students had achieved similar learning outcomes with regard to the past studies.

Firstly, the time spent away from the everyday classroom in a new environment gave the students an opportunity to gain first-hand knowledge by exploring and discovering the lifestyle and culture of the local community. This finding was consistent with Kolb's theory, Dong-dong Yu (2017) and April (2012).

Secondly, the field trip learning was fun and created good rapport among students themselves as well as between students and lecturer. They were able to connect on a more personal level without the structure of the normal college day. This finding was also consistent with April (2012).

Thirdly, as students worked in small groups, they observed, chatted and learnt about each other besides collecting data as required by their assignment. They displayed critical thinking and recalled factual details related to book knowledge. Again, this finding was consistent with Brown (2000) and Rea (2008).

Lastly, as students interviewed local heads, chatted with local communities, they were able to improve their communication skills as well as enlarge their social relationship outside college community. This finding was consistent with Claiborne (2011).

The findings of this qualitative study also showed positive impact on the teacher. The teacher, as a researcher, had the opportunity to get to know the students in greater depth. The whole experience of EL allowed the teacher the opportunity to sit down with individuals and small groups of two or three students and respond to questions that they initiated besides listening to their thoughts. This enabled the teacher to capture how the students saw the world differently from her. The insight into students' world-views enabled the teacher to better communicate the concept taught in the classroom, and at the same time improved their routine lesson plan academically. The whole situation created somewhat of a teacher paradox because by removing the teacher from front and centre, the teacher seemed to become less important. But paradoxically, in reality, the teacher became more important, because when working as a guide on the side, the teacher actually worked very closely and cared for them. The students opened up to the teacher, too. This was proven from the students written reflective feedback. Some examples are shown in Table 1.

Table 1

Students	Contents
1	I had learnt about the culture of the 'Orang Asli'. They were very kind, friendly and 'pure' people. I would like to preserve their culture as my CSR plan.
2	I had close contact with the 'Orang Asli'. I envied their children who were so free and easy.
3	I was shocked to know that 'Kpg Sg Melayu' had received almost 6000 international visitors. We were the first local college students to visit this place.
4	The most unforgotten memory was fish-catching. All this while, I only know how to eat fish.
5	I had improved my relationship with my classmates and my lecturer.
6	The boatman plucked and showed us some seeds and leaves of the mangroves which were used as their medicine.
7	I also knew the importance of advertisement because Star Leisure Farm did not advertise very well. Thus, very few people knew there was a leisure farm in Kulai.
8	I was lucky to have close contact with the 'Orang Asli'. There was a lot of new knowledge such as catching a little crab and tasting the local Orang Asli cuisine.
9	I learnt about how to be a leader as well as work as a team. I had witnessed the changes and could differentiate between farm life and city life.

CONCLUSION AND LIMITATION

Overall, the findings of this project were considered significant. The outdoor experiential learning like field trips enhanced deep and active learning outside the classroom. The engagement of concepts that are required by these experiences stimulated the students to think critically and apply into real-life practice. The exploration, discovery and acquisition of first-hand knowledge indirectly developed communication skills and improved their relationship with their peers and lecturer, besides enlarging their social connection outside the classroom. More importantly, it was a learning-based field trip that was worth the effort. The students gained confidence and strengthened their decision-making skills by responding to and solving real-world problems and issues.

Nevertheless, the scope of this study had its limitations. The sample size was small and the time used for data collection was constrained by observation and interview. Apart from that, there was the language barrier between the locals and the students. This reflected an inadequacy measurement to assess the outcomes on learning linguistic component with this outdoor experiential learning methodology. Furthermore, the study was exploratory in nature and qualitative method was applied, thus the findings could not be generalised.

Undoubtedly, the students enjoyed this experiential learning process more than the traditional 'chalk and talk' method based on verbal feedback. They gained insight through a dynamic and multi-faceted approach, incorporated the advantages of both traditional and hands-on learning in a context delivery setting. Therefore, experiential learning will always be the most fruitful practice in education.

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ENGLISH LANGUAGE SUPPORT FOR SCAFFOLDING LEARNING IN CHEMISTRY

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Abstract

The research was undertaken with Unit 1 Chemistry students enrolled in the Monash University Foundation Year (MUFY) at Monash College, Melbourne. The cohort comprised of international students where the majority had limited English vocabulary and had low level English reading ability, writing and speaking skills. These language issues often hinder the students' progress in chemistry. It is well recognised that students from non-English speaking background have serious learning difficulties in new learning environments where English is the medium of teaching and learning (Hellsten & Prescott, 2004; Carroll, 2005; Sawir, 2005). In response to this, and to improve our students' results in Chemistry, a number of intervention strategies to address English limitations with an emphasis on the English language and vocabulary were embedded into Unit 1 Chemistry lessons. Data showed a measurable effect on the students' performance in chemistry assessments and in lessons where English language support was provided to scaffold chemistry learning. Additionally, an anonymous student's survey showed that students strongly agree that explicit teaching and learning of English vocabulary was essential for learning chemistry and helped them improve their performance.

Keywords: English language, English vocabulary, chemistry learning, international students

INTRODUCTION

In order to enhance student learning, intervention strategies were embedded in Unit 1 Chemistry classes. These were based on the proposals of Arkoudis (2006) and an Australian Good Practice Review (AUQA, 2009). As a part of each lesson, interventions to embed English were included. These intervention activities focused on building English vocabulary, recognising, highlighting unfamiliar words and demonstrating the use of English words necessary for chemistry learning. In addition, the development of a glossary formed part of most lessons. This involved students' shared responsibility for identifying and learning the English vocabulary that is needed for chemistry understanding and learning.

METHOD

In order to enhance students' chemistry learning, intervention strategies included activities focused on building English vocabulary, recognising and highlighting unfamiliar words during chemistry teaching, problem solving, group tasks or other learning activities. Proper use of English words were emphasised and demonstrated during class. Students were given online practice quizzes and exam questions to familiarise and provide experience to respond to critical words in questions. In addition, class time was allocated to developing a glossary individually and as a whole class. Students shared responsibility in identifying and learning the English vocabulary they needed for chemistry understanding and learning.

FINDINGS AND DISCUSSION

Unit 1 Chemistry students at MUFY Melbourne were tested for their prior knowledge of basic chemistry using an online 'preliminary MUFY test' and an in-class 'pre-test' (week 0). The results of these indicated that students had difficulty in understanding the language. A similar trend was reflected in the Unit 1 Chemistry 'Chapter 1 formative test'. When asked, the majority of students conveyed that, even though they had previously learnt chemistry in their native countries and while the formulas looked familiar, they had difficulty in understanding the language of the questions.

The data (samples of student work) was collected to analyse the effect of lessons where direct English language support was provided to scaffold chemistry learning (at week 3 and week 9) and compared with 'prior learning of the students' (week 0 and week 8). Results from the formative test in week 3 were compared with matching sections of preliminary assessment (week 0) and showed that students' performance had improved from an average of 40.08% initially, to 62.26 % after the explicit scaffolding of the English required to learn chemistry. Additional analysis undertaken in week 9 for

'Chapter 6' showed that when assessed at the beginning of the topic, a class received an average score of 32% as compared to another class receiving an average score of 83%, when assessed for chemistry knowledge post-scaffolded language learning activities. Furthermore, students received an average of 39.33% in the Chapter 6 formative test and an average mark of 64.33% in Chapter 6 summative assessment.

Anonymous student survey and individual comments showed that the majority of the students strongly agreed that the embedded English activities improved their performance in assessments. Overall students believed that learning English vocabulary was essential for learning chemistry.

CONCLUSION

The results of action research project suggest that explicit teaching of English language helps scaffold chemistry learning and improves student performance.

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MOBILE LEARNING: READY OR NOT?

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Abstract

Mobile learning (m-learning) is a technique which uses mobile technology and wireless communication in the learning process (Kazeime & Bayat, 2012 as cited in Muhammad Bakhsh, Amjad Mahmood & Nazir A. Sangi, 2017). With the ever increasing usage of smartphones, tablet PCs and mobile services amongst students, educators will have more opportunities to incorporate technology into their pedagogies and to use mobile technologies to enhance learning. The benefits of m-learning include improving the quality of instructional activities, enhancing student communication, collaboration and organisational skills, promoting students' autonomous learning and increasing student motivation (Purcell, 2005). Despite the widespread enthusiasm about its advantages and potential in revolutionising the traditional classroom, m-learning in education has not witnessed a wholesale adoption amongst lecturers in educational institutions (Liu, Han & Li, 2010; Purcell, 2005). Hence, using the Technology Acceptance Model (TAM), this paper seeks to determine the acceptance level and the barriers that the lecturers face as they consider the use of m-learning in their own classrooms. The outcome would also highlight the areas which an institution should consider when implementing m-learning. It is our hope that through this effort, we are able to establish approaches to support lecturers and all stakeholders in making a seamless transition from teaching using traditional methods to m-learning. This is because successful adoption will positively influence learning and bring about many irrefutable benefits to all stakeholders.

Keywords: mobile learning, electronic learning, Technology Acceptance Model (TAM)

INTRODUCTION

Most literature that are available on the topic of m-learning focuses on how it affects students' learning and achievements, but there is a need for more research on how teachers/lecturers, for example, approach this change which will impact the way they teach and interact with their students in the classroom. Hence, this paper seeks to address the concerns that educators may have when educational institutions decide to introduce m-learning through programmes such as the "Bring Your Own Device (BYOD)" initiative in Sunway College Johor Bahru. If m-learning is to be successful, teachers themselves need to be convinced of its effectiveness and be confident in using the mobile devices in their lessons.

The Technology Acceptance Model (TAM) used in this paper was first introduced by Davis (1989) as an extension of the Theory of Reasoned Action (TRA) (Liu, Han & Li, 2010; Muhammad Bakhsh, Amjad Mahmood & Nazir A. Sangi, 2017). In TAM, perceived usefulness (PU) and perceived ease of use (PEOU), are used to predict the likelihood of an individual adopting the use of technology, which is shown in their behavioural intent (BI). Prior experience (PE) is also taken into account when discussing BI. The external variables studied in this paper that relate to PU are job relevance and quality of outcome. Meanwhile, PEOU covers areas such as computer self-efficacy (SE), training, and technical limitations. In addition, the attitudes (ATT) of lecturers towards m-learning, particularly in terms of intrinsic motivation, cost, and time are taken into consideration in the implementation of m-learning (Liu, Han & Li, 2010).

Previous research has indicated that given the proper training and support, teachers will be able to move their focus from technology to pedagogy to fully utilise the opportunities m-learning can provide for them in the classroom (Erbes, Lesky & Myers, 2016).

METHODOLOGY

An online survey was carried out to gather the responses from 24 Pre-University lecturers at Sunway College Johor Bahru to determine the acceptance level of the academic staff in the implementation of m-learning in their classrooms. The questionnaire is designed using the Likert Scale and participants are required to make qualitative judgements of 19 criteria. Their responses would indicate clearly their main concerns in the implementation of m-learning in the classroom.

For the first 13 questions, a score of 1 would indicate that particular concern mentioned was not perceived as an obstacle, whereas a score of 5 would mean that it was a major and unmanageable obstacle. For questions 14 – 19, a score of 1 was to show strong disagreement while 5, on the other hand, indicated strong agreement to the statements given.

RESULTS AND DISCUSSION

Of the 24 lecturers who responded to the questionnaire, only 3 did not own a smartphone. Slightly more than half the respondents indicated that they owned a tablet device, which was the same proportion as those who owned a laptop. Hence, we can conclude that most lecturers are familiar with these mobile devices.

From the survey results, the average score for PU is 2.62, which was determined by the respondents' answers to the first six questions that relate to job relevance and quality of outcome. A score lower than 3.00 on the Likert Scale would mean that the lecturers perceive m-learning to be accessible and not very difficult to implement. The only criterion out of the six which weighted more than 3.00 was the lack of well-designed curriculum-based material using mobile devices. The results are not surprising as most educators currently use mobile devices without integrating its use into their teaching pedagogy (Erbes, Lesky & Myers, 2016).

Meanwhile, the PEOU average score from a total of 8 questions was 2.71 on the Likert Scale. Similar to PU, the responses demonstrate that the lecturers have a positive perception on the ease of use of mobile devices. Our findings concur with other previous studies (Dogan & Akbarov, 2016; Huang, Lin & Chuang, 2007), where it was established that educators usually have a positive outlook on the use of mobile devices in teaching. A major contributing factor for this positive outcome is the consistent and on-going professional development programme that has been implemented for the last 2.5 years.

Strong management support towards quality education has also driven the relevant departments such as the student services, IT, student recruitment and library to assist all lecturers in their efforts to promote m-learning. However, the current facilities may not be sufficient to adequately support a large number of users and there are no dedicated venues or computer labs for m-learning purposes as indicated by a relatively high score of 3.3 on this criterion.

More than half the respondents were also concerned with the lack of software (apps) tailored to the syllabus resulting in a score of 3.46 for this criterion. This is naturally so, since lecturers are not given any budget to spend on paid apps.

The final 6 questions regarding the respondents' attitudes averaged 2.78. Overall, the lecturers find that the use of mobile devices give them a sense of personal achievement, in addition to being fun, and enjoyable. Nonetheless, the effort needed to successfully plan and implement m-learning is perceived to be not proportionate to the outcome desired and it requires extended planning time. These two factors had a score of 3.00 and 3.67, respectively. This again ties in to a lack of suitable resources currently available, such as paid apps for specific subjects.

In conclusion, these relatively low scores for all three components (PU, PEOU and ATT) in the TAM model will give a positive outcome for BI and this augurs well for the implementation of m-learning.

RECOMMENDATION AND CONCLUSION

The quantitative method employed in this study and the small sample size may mean that the validity of the findings need to be further confirmed by classroom observations and detailed personal interviews with the lecturers.

However, we would like to provide several recommendations based on our experience of driving the use of mobile devices in the classroom among the lecturers in Sunway College Johor Bahru.

First, a systematic training to develop teachers' self-efficacy in using mobile devices, and to create a clear vision for professional development needs to be in place (Erbes, Lesky & Myers, 2016). In addition, strong peer support and regular meetings are instrumental in addressing the concerns of lecturers in a timely manner which in turn will improve their self-confidence (Erbes, Lesky & Myers, 2016). These measures will help lecturers scaffold the learning curve which in turn, increases teacher confidence. Furthermore, having access to paid apps and facilities tailored for m-learning should be considered in the future for an even better m-learning experience. The time and effort required for lecturers to successfully adopt m-learning should also be considered and given due recognition to encourage them to continue in the m-learning journey.

Finally, the readiness to adopt m-learning does not necessarily guarantee a successful implementation as the focus should shift from just using these devices to assimilating it into the teaching pedagogy to meet learning outcomes (Meyer, 2013 as cited in Erbes, Lesky & Myers, 2016).

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