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Teaching that Makes Learning Happen
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TEACHING THAT MAKES LEARNING HAPPEN
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FOREWORD

It is indeed a great honour to welcome you to the inaugural International Conference on the Scholarship of Teaching and Learning (ICSoTL) 2017. I would also like to take this opportunity to extend a warm welcome to the keynote speakers and international participants on the occasion of your first visit to the award winning green campus of Universiti Utara Malaysia, Sintok, Kedah, Malaysia.

This conference aims to provide the quintessential platform for researchers from a spectrum of educational background to share, discuss and exchange views on issues related to teaching and learning. Research in education has evolved over the years and it is therefore, most timely that this inaugural international conference on the scholarship of teaching and learning is held. With the rich diversity of issues and challenges in education, there is considerable interest in and in turn, the constant need to advance knowledge in the field. I strongly believe that it is imperative for practitioners and researchers to respond imaginatively to the current unprecedented challenges that we face in educating the millennial generation.

I would also like to take this opportunity to express my gratitude to the generous sponsorship and strong support of the Chief Minister of Kedah, YAB Dato’ Seri Di Raja Ahmad Bashah bin Md Hanipah towards the conference.

Once again, welcome to ICSoTL 2017 and it is my fervent hope that we will embark together on the exciting journey of teaching and learning from each other and help define the education landscape in good time. To all our guests, have a pleasant and memorable stay in UUM.

Best wishes

Professor Dr. Nurahimah Mohd. Yusoff
Chairperson
ICSoTL 2017
KEYNOTE 1

Professional Learning for Academics and the Scholarship of Teaching and Learning

Professor Dr. Tony Harland
University of Ottago, New Zealand

Abstract

As a rule, new university lecturers are not qualified to teach, nor or they prepared for teaching when they take up their first appointment. Three years of research training during a PhD, possibly with some part-time demonstrating or tutoring, is an inadequate preparation for such an important part of a lecturer’s job. In times past when higher education was elite and reserved for the very best minds (or those with a privileged background), ‘teaching’ students was seen as unnecessary. Students would come to university and learn, either with or despite their lecturers. However, the neoliberal expansion to mass higher education of recent decades has altered this position and teaching has taken on new significance for the academic profession. At the same time as having to teach many more students with a greater range of abilities, the meaning of higher education itself has been challenged and its role in society questioned. Teaching now has to have an outcome beyond subject, and the university lecturer is faced with the double task of working out how to teach disciplinary knowledge and then how to align student learning with a range of possible outcomes. The question is how do teachers meet these challenges when there is no pre-service training (typical of high school education) for the university lecturer? A range of in-service academic development opportunities have been introduced in many institutions and lecturers can take part in teaching workshops, attend formal courses with a teaching qualification, or engage in what has been termed the ‘Scholarship of Teaching and Learning’ (SoTL). SoTL is predicated on two questions: ‘how can I improve my teaching? and ‘what am I trying to achieve with my teaching?’ In this keynote I will explain why SoTL is a worthwhile option for academic professional formation and argue that to be successful, it requires a critical focus on teaching skills in the context of a reasoned argument about the purposes of a higher education.
KEYNOTE 2

Developing the Scholarship of Teaching and Learning Community of Practice

Professor Dr. Nurahimah Mohd. Yusoff
Universiti Utara Malaysia

Abstract

The Scholarship of Teaching and Learning, also known as SoTL, is currently at an infant stage in Malaysia. In other parts of the world, several studies (Livshin, 2011; Li, 2011; Sams and Sams, 2011) pointed out that the promotion of SoTL efforts and other scholarly activities in this area often is liaised via the centre for the advancement of teaching, academic development centre, centre for teaching and learning of the respective universities. The study by Raja Maznah et al. (2012) for example, revealed that the participants in general perceived the importance of and need for SoTL training. The majority of the participants indicated a need to develop a comprehensive SoTL training framework and overall, there was a general consensus on the need to enhance teaching practices through SoTL. However, many participants were unfamiliar with SoTL literature and generally were exposed to it informally. Support by the institution seemed to be important to the participants. This keynote session intends to address some pertinent questions related to SoTL activities. How do participants develop reflection skills while learning to do SoTL? What is the process that participants go through when they are engaged in SoTL? How does the process of transferring SoTL learning take place among participants? And most of all - the key question: What is the process of developing a Community of Practice (CoP) in Higher Education?
Penggunaan Aplikasi Edmodo dalam Pengajaran dan Pembelajaran di Institut Pendidikan Guru

Muhammad Nidzam Yaakob and Nurahimah Mohd Yusoff
Universiti Utara Malaysia


Keywords: Konsensus Pakar, Fuzzy Delphi Method, Persekitaran Pengajaran Maya, Generasi Millenial

1. Pengenalan


Kepesatan pembangunan ekonomi dan dunia pendidikan telah mengubah status dunia untuk lebih memberi fokus kepada ‘end product’ berbanding teoritikal. Perubahan ini dikenali sebagai knowledge age atau k-econom seiring dengan abad ke-21 yang amat memenangkan kreativiti dan inovasi dan informasi dalam menelusuri kehidupan masyarakat maya. Kepesatan dunia ICT di abad ke-21 menjadikan negara harus menerima impak isu dan cabaran daripada liberalisasi, globalisasi, liberalisasi dalam era perkembangan dunia Information and Communications Technology atau ICT. Alam pendidikan juga pastinya perlu bergerak bersama dengan teknologi suapaya tidak ketinggalan dalam cabara dunia tanpa sempadan di era globalisasi. Irvine & Richards, 2013 berpendapat abad ke-21 kini terdedah dengan konsep pembelajaran atas tali yang memberi ruang yang lebih terbuka untuk pelajar mengikut proces pembelajaran.

Teachers will need to change their role in the electronic classroom from being information providers to counselors to help students develop how and judgment to select information sources. Key to success in the Information Age will be making the right judgements between an awesome array of choices. We are examining our education system to create a curriculum where people learn how to learn for continuing education throughout their lives (Tun Mahathir Mohamed, Launch of the Multimedia Super Corridor, 1 August 1996)

Jadi jelaslah bahawa segala bentuk perubahan akan berhadapan dengan halangan dan cabaran dalam soal ekonomi, politik dan sosial yang secara langsung turut mempengaruhi status pendidikan sesebuah negara. Tetapi dengan gelombang ekonomi kini, peningkatan dalam penggunaan smartphone telah membuka ruang yang luas dalam perubahan era pedagogi tradisi kepada pedagogi maya di alam siber (Specht, 2014).
2. Penyataan Masalah


3. Objektif Kajian

1. Mengenal pasti apakah peluang menggunakan aplikasi Edmodo dalam kalangan pensyarah di IPG berdasarkan kesepakatan pakar.

4. Soalan Kajian

1. Apakah peluang menggunakan aplikasi Edmodo dalam kalangan pensyarah di IPG?

5. Metodologi Kajian


6. Perbincangan Kajian

6.1. Pengumpulan dan penganalisaan data teknik *Fuzzy Delphi*

Dalam teknik Fuzzy Delphi ada dua istilah yang perlu difahami iaitu *Triangular Fuzzy Number* dan proses *Defuzzification*. *Triangular Fuzzy Number* mewakili nilai m1, m2 dan m3 dan ia ditulis seperti ini (m1, m2, m3). Nilai m1 mewakili nilai minimum, nilai m2 mewakili nilai munasabah manakala nilai m3 mewakili nilai maksimum. Manakala *Triangular Fuzzy Number* digunakan untuk menghasilkan skala Fuzzy (yang sama seperti skala Likert) bagi tujuan menterjemahkan pembolehubah linguistik kepada nombor fuzzy. Bilangan tahap bagi skala Fuzzy adalah dalam bilangan ganjil. Lebih tinggi skala Fuzzy, lebih tepat data yang diperolehi. Ia dapat dijelaskan dalam Rajah 1.

![Rajah 1](image)


<table>
<thead>
<tr>
<th>Aras Persetujuan</th>
<th>Skala Fuzzy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sangat Tidak Setuju</td>
<td>0.0, 0.0, 0.2</td>
</tr>
<tr>
<td>Tidak Setuju</td>
<td>0.0, 0.2, 0.4</td>
</tr>
<tr>
<td>Sederhana Setuju</td>
<td>0.2, 0.4, 0.6</td>
</tr>
<tr>
<td>Setuju</td>
<td>0.4, 0.6, 0.8</td>
</tr>
<tr>
<td>Sangat Setuju</td>
<td>0.6, 0.8, 1</td>
</tr>
</tbody>
</table>

Jadual 1 menunjukkan bahawa semakin tinggi nombor pada skala, semakin tepat data yang diperolehi. Di dalam kajian ini, pengkaji memilih skala linguistik lima poin seperti yang ditunjukkan dalam Jadual 2.

<table>
<thead>
<tr>
<th>Aras Persetujuan</th>
<th>Skala Fuzzy</th>
<th>Skala Likert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sangat Tidak Setuju</td>
<td>0.0, 0.0, 0.2</td>
<td>1</td>
</tr>
<tr>
<td>Tidak Setuju</td>
<td>0.0, 0.2, 0.4</td>
<td>2</td>
</tr>
<tr>
<td>Sederhana Setuju</td>
<td>0.2, 0.4, 0.6</td>
<td>3</td>
</tr>
<tr>
<td>Setuju</td>
<td>0.4, 0.6, 0.8</td>
<td>4</td>
</tr>
<tr>
<td>Sangat Setuju</td>
<td>0.6, 0.8, 1</td>
<td>5</td>
</tr>
</tbody>
</table>

Data-data kemudian dijadualkan untuk mendapatkan nilai Fuzzy (n1, n2, n3) serta nilai purata Fuzzy (m1, m2, m3) bagi mendapatkan nilai threshold, peratusan konsensus pakar, *defuzzication* dan *ranking item*. Bagi tujuan mendapatkan kesepakatan pakar untuk setiap item, nilai threshold tidak melebihi 0.2. Peratusan persetujuan pakar pula perlu melebihi nilai 75% manakala nilai *defuzzication* bagi setiap item perlu melebihi nilai $\alpha$-cut = 0.5.
Untuk mendapatkan nilai threshold, jarak di antara dua nombor Fuzzy ditentukan dengan menggunakan formula berikut iaitu:

\[ d(\bar{m}, \bar{n}) = \sqrt[3]{\frac{1}{3}[(m_1 - n_1)^2 + (m_2 - n_2)^2 + (m_3 - n_3)^2]} \]

Rajah 2 Formula penentuan jarak di antara dua nombor Fuzzy

Berdasarkan formula pada Rajah 2, nilai d adalah nilai threshold. Jika nilai d ≤ 0.2, ia bermaksud kesemua pakar mencapai kesepakatan terhadap item berkenaan. Jika sebaliknya, pusingan kedua perlu dibuat untuk melihat samada item tersebut diperlukan atau tidak (Chen, 2000 dan Cheng & Lin, 2002). Teknik Fuzzy Delphi juga melibatkan proses menentukan kesepakatan pakar samada melebihi atau bersamaan dengan 75% bagi keseluruhan konstruk atau bagi setiap item. Setiap item diandalkan mencapai kesepakatan pakar jika peratusan kesepakatan pakar untuk item berkenaan adalah sama atau melebihi 75% (Chu & Hwang, 2008).

Proses defuzzification turut dilakukan dalam proses penganalisaan data kajian teknik Fuzzy Delphi. Ia adalah proses menentukan kedudukan atau keutamaan bagi setiap item atau untuk menentukan kedudukan bagi setiap pembolehubah mahupun sub-pembolehubah. Dalam proses ini, terdapat tiga rumus iaitu:

i. \[ A = \frac{1}{3} * (m_1 + m_2 + m_3) \], atau;

ii. \[ A = \frac{1}{4} * (m_1 + 2m_2 + m_3) \], atau;

iii. \[ A = \frac{1}{6} * (m_1 + 4m_2 + m_3) \].

Nilai \( \alpha \)-cut = nilai median bagi ‘0’ dan ‘1’, dimana \( \alpha \)-cut = (0+1)/2 = 0.5. Sekiranya nilai A terhasil kurang dari nilai \( \alpha \)-cut = 0.5, item akan ditolak kerana ia menunjukkan kesepakatan pakar dalam menolak item tersebut namun jika nilai A yang terhasil adalah melebihi nilai \( \alpha \)-cut = 0.5, item akan diterima kerana ia menunjukkan konsensus pakar untuk menerima item berkenaan (Bodjanova, 2006).

6.2. Rasional teknik Fuzzy Delphi


6.3. Kesepakatan pakar Fuzzy Delphi terhadap peluang pelaksanaan m-pembelajaran di IPG

<table>
<thead>
<tr>
<th>Bil</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saya percaya kepentingan menggunakan perisian Edmodo secara mobile semasa kuliah.</td>
</tr>
<tr>
<td>2</td>
<td>Saya percaya menggunakan perisian Edmodo sesuai dengan program saya.</td>
</tr>
<tr>
<td>3</td>
<td>Penggunaan perisian Edmodo dalam P&amp;P adalah satu idea yang baik untuk pembelajaran</td>
</tr>
<tr>
<td>4</td>
<td>Saya percaya menggunakan perisian Edmodo secara mobile akan meningkatkan prestasi akademik pelajar.</td>
</tr>
<tr>
<td>5</td>
<td>Saya berminat untuk mempelajari menggunakan perisian Edmodo secara mobile dengan lebih mendalam.</td>
</tr>
<tr>
<td>6</td>
<td>Saya cekap dalam menggunakan perisian Edmodo secara mobile.</td>
</tr>
<tr>
<td>7</td>
<td>Saya merasa yakin apabila menggunakan perisian Edmodo secara mobile dalam P&amp;P</td>
</tr>
<tr>
<td>8</td>
<td>Penggunaan perisian Edmodo secara mobile membolehkan kerja disiapkan dengan cepat</td>
</tr>
<tr>
<td>9</td>
<td>Penggunaan perisian Edmodo secara mobile berupaya meningkatkan produktiviti kerja pelajar.</td>
</tr>
<tr>
<td>10</td>
<td>Saya berpeluang mengakses aplikasi Edmodo secara mobile pada bila-bila masa dan di mana-mana sahaja.</td>
</tr>
</tbody>
</table>

Nilai threshold (d), peratusan kesepakatan pakar, defuzzification dan ranking item bagi item-item di atas ditunjukkan dalam Jadual 3.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>A4</th>
<th>A5</th>
<th>A6</th>
<th>A7</th>
<th>A8</th>
<th>A9</th>
<th>A10</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAkar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>0.041</td>
<td>0.020</td>
<td>0.143</td>
<td>0.143</td>
<td>0.122</td>
<td>0.041</td>
<td>0.190</td>
<td>0.020</td>
<td>0.454</td>
<td>0.285</td>
</tr>
</tbody>
</table>
kesepakatan dari para pakar. Item yang disusun mengikut keutamaan seperti ditunjukkan dalam Jadual 5.

Menunjukkan item berada melebihi nilai 75%. Kesemua nilai tersebut telah mendapat kesepakatan pakar. Cheng dan Lin (2002), jika nilai purata dan penilaian pakar adalah kurang dari nilai threshold (d) = 0.2, item tersebut telah mendapat kesepakatan pakar. Meskipun dapat menunjukkan item A1, A2, A4, A5, A6, A7 dan A10 melebihi nilai threshold (d) = 0.2, namun peratus persetujuan pakar menunjukkan kesemua item berada melebihi nilai 75%. Kesemua nilai defuzzification bagi setiap item juga melebihi nilai α-cut = 0.5. Ini menunjukkan item-item peluang untuk melaksanakan m-Pembelajaran di Institut Pendidikan Guru mendapat kesepakatan dari para pakar. Item yang disusun mengikut keutamaan seperti ditunjukkan dalam Jadual 5.

**Kaedah 1: Item A1, A2, A4, A5, A6, A7 dan A10 melebihi nilai threshold (d) = 0.2

**Kaedah 2: Peratus persetujuan pakar menunjukkan kesemua item melebihi nilai 75%

***Kaedah 3: Kesemua nilai defuzzification bagi setiap item melebihi nilai α-cut = 0.5

Berdasarkan Jadual 4, hanya item A3 dan A5 sahaja yang mempunyai nilai threshold (d) ≤ 0.2. Menurut Cheng dan Lin (2002), jika nilai purata dan penilaian pakar adalah kurang dari nilai threshold 0.2, item tersebut telah mendapat kesepakatan pakar. Meskipun dapat menunjukkan item A1, A2, A4, A5, A6, A7 dan A10 melebihi nilai threshold (d) = 0.2, namun peratus persetujuan pakar menunjukkan kesemua item berada melebihi nilai 75%. Kesemua nilai defuzzification bagi setiap item juga melebihi nilai α-cut = 0.5. Ini menunjukkan item-item peluang untuk melaksanakan m-Pembelajaran di Institut Pendidikan Guru mendapat kesepakatan dari para pakar. Item yang disusun mengikut keutamaan seperti ditunjukkan dalam Jadual 5.

**Jadual 5 Item Peluang Melaksanakan Aplikasi Edmodo secara mobile di IPG mengikut keutamaan**

<table>
<thead>
<tr>
<th>Susunan mengikut keutamaan</th>
<th>Item</th>
<th>Nombor Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Penggunaan perisian Edmodo dalam P&amp;P adalah satu idea yang baik untuk pembelajaran.</td>
<td>A3</td>
</tr>
<tr>
<td>2</td>
<td>Saya percaya menggunakan perisian Edmodo secara mobile akan meningkatkan prestasi akademik pelajar.</td>
<td>A4</td>
</tr>
<tr>
<td>3</td>
<td>Penggunaan perisian Edmodo secara mobile berupaya meningkatkan produktiviti kerja pelajar.</td>
<td>A9</td>
</tr>
<tr>
<td>4</td>
<td>Saya berminat untuk mempelajari penggunaan perisian Edmodo secara mobile dengan lebih mendalam.</td>
<td>A5</td>
</tr>
<tr>
<td>4</td>
<td>Saya percaya menggunakan perisian Edmodo sesuai dengan program saya.</td>
<td>A2</td>
</tr>
</tbody>
</table>
Jadual 6 pula menunjukkan nilai skor defuzification bagi ciri-ciri konstrukt peluang pelaksanaan m-Pembelajaran di IPG. Berdasarkan nilai skor defuzification menunjukkan kedudukan bagi setiap item yang perlu diberi keutamaan oleh pakar melaksanakan m-Pembelajaran di IPG.

<table>
<thead>
<tr>
<th>Susunan mengikut keutamaan</th>
<th>Item</th>
<th>Nilai fuzzy evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Penggunaan perisian Edmodo dalam P&amp;P adalah satu idea yang baik untuk pembelajaran.</td>
<td>10.6</td>
</tr>
<tr>
<td>2</td>
<td>Saya percaya menggunakan perisian Edmodo secara mobile akan meningkatkan prestasi akademik pelajar.</td>
<td>10.4</td>
</tr>
<tr>
<td>3</td>
<td>Penggunaan perisian Edmodo secara mobile berupaya meningkatkan produktiviti kerja pelajar.</td>
<td>10.4</td>
</tr>
<tr>
<td>4</td>
<td>Saya berminat untuk mempelajari penggunaan perisian Edmodo secara mobile dengan lebih mendalam.</td>
<td>10.2</td>
</tr>
<tr>
<td>5</td>
<td>Penggunaan perisian Edmodo secara mobile membolehkan kerja disiapkan dengan cepat.</td>
<td>8.8</td>
</tr>
<tr>
<td>6</td>
<td>Saya percaya menggunakan perisian Edmodo sesuai dengan program saya.</td>
<td>8.8</td>
</tr>
<tr>
<td>7</td>
<td>Saya percaya kepentingan menggunakan perisian Edmodo secara mobile semasa kuliah.</td>
<td>8.6</td>
</tr>
<tr>
<td>8</td>
<td>Saya berpeluang mengakses aplikasi Edmodo secara mobile pada bila-bila masa dan di mana-mana sahaja.</td>
<td>8.6</td>
</tr>
<tr>
<td>9</td>
<td>Saya cekap dalam menggunakan perisian Edmodo secara mobile.</td>
<td>7.9</td>
</tr>
<tr>
<td>10</td>
<td>Saya merasa yakin apabila menggunakan perisian Edmodo secara mobile dalam P&amp;P</td>
<td>7.4</td>
</tr>
</tbody>
</table>

Hasil daripada nilai skor defuzification bagi setiap ciri-ciri item peluang pelaksanaan m-Pembelajaran di IPG dilihat memberi nilai yang dipersetujui. Jadual 6 memperlihatkan bahawa item penggunaan perisian Edmodo dalam P&P adalah satu idea yang baik untuk pembelajaran ditempat yang pertama dengan nilai skor defuzification sebanyak 10.6. Diikuti oleh item saya percaya menggunakan perisian Edmodo secara mobile akan meningkatkan prestasi akademik pelajar dan penggunaan perisian Edmodo secara mobile berupaya meningkatkan produktiviti kerja pelajar dengan nilai defuzification sebanyak 10.4. Dua item ini berada di kedudukan kedua. Seterusnya item saya berminat untuk mempelajari penggunaan perisian Edmodo secara mobile dengan lebih mendalam dengan nilai skor defuzification sebanyak 10.2 berada diranking ketiga Seterusnya item penggunaan perisian Edmodo secara mobile membolehkan kerja disiapkan dengan cepat dan saya percaya menggunakan perisian Edmodo secara mobile sesuai dengan program saya dengan nilai skor defuzification sebanyak 8.8 di kedudukan keempat. Dua item berada di kedudukan yang kelima iaitu saya percaya kepentingan menggunakan perisian Edmodo secara mobile semasa kuliah dan saya berpeluang mengakses aplikasi Edmodo secara mobile pada bila-bila masa dan di mana-mana sahaja dengan nilai skor defuzification sebanyak 8.6. Bagi kedudukan keenam item saya cekap dalam menggunakan perisian Edmodo secara mobile dengan nilai skor defuzification sebanyak 7.9. Item yang seterusnya ialah saya merasa yakin apabila menggunakan perisian Edmodo secara mobile dalam P&P dengan nilai skor defuzification sebanyak 7.4 di kedudukan ketujuh.

6.4. Dapatkan temu bual pelajar penggunaan Edmodo dalam pembelajaran

Dapatkan temu bual bagi responden 1 hingga responden 8 menunjukkan responden merasakan aktiviti kuiz secara edmodo dengan alat smartphone mampu untuk menjawab soalan kuiz yang diberikan secara individu dan juga berkumpulan. Daripada temu bual juga jelas menunjukkan responden merasakan aktiviti sebegini adalah menarik dan mampu untuk menjadikan proses pembelajaran amat menarik. Pelajar secara aktif membuat percincangan untuk menjawab soalan kuiz yang diberikan secara individu dan juga berkumpulan. Daripada temu bual juga jelas menunjukkan responden merasakan aktiviti sebegini adalah menarik dan mampu untuk menjadikan proses pembelajaran adalah selari dengan apa yang berlaku dalam dunia realiti ICT semasa. Dapat juga menunjukkan pembelajaran menggunakan platform edmodo mampu untuk menjawab segala persoalan dengan pantas dalam kumpulan. Apabila terdapat persoalan yang
dirasakan kurang difahami, pelajar akan menyatakan dalam platform edmodo. Respon yang diperolehi dari rakan adalah cepat, pantas dan berkesan. Responden juga merasakan seolah-olah mereka berada dalam kelas untuk berbincang, tetapi sebenarnya perbincangan berlaku di luar waktu pembelajaran.

“Ya..ia amat membantu..dimana kita boleh berbincang dan bertukar-tukar pendapat di dalam edmodo ini juga tempat untuk kita mendapatkan maklumat yang diperlukan selain daripada nota yang disediakan..” (TB1/R1)

“Ya..kita boleh bertukar-tukar pendapat didalam edmodo ini macam group study la..kalau ada assignment yang kita tak paham..boleh la kita berbincang dalam edmodo ni…lebih memudahkan kerja kita bila dah ramai memberi pendapat..” (TB1/R2)

“Amat membantu...kita boleh berbincang dalam forum ini.. mudah nak bertanya pada rakan-rakan lain..” (TB1/R3)

“Ya.. amat membantu.. kita boleh dapat banyak maklumat..lagipun ia membantu dalam menjawab setiap kemusykilan tentang sesuatu tajuk..” (TB1/R4)

“Ya..kira edmodo ni macam group study la..kita bincang ramai-ramai..segala apa persoalan boleh kita tanya dalam ni..banyak membantu la..” (TB2/R5, ms5, b111-112)

“Semestinya membantu pembelajaran saya.. mudah saya nak berbincang dengan kawan-kawan...kadang-kadang ada juga lecturer yang joint sama..” (TB2/R6, ms6, b113-114)

“Ya..dengan adanya platform dalam model ini...saya dapat bertanya kemusykilan tentang pembelajaran saya..ramai yang boleh membantu..” (TB2/R7, ms5, b115-116)

“Ya.. edmodo ni boleh di katakan sebagai tempat untuk mendapatkan maklumat dan tempat kita belajar juga...jadi mudah la untuk kita nak bertanya..” (TB2/R8, ms5, b117-118)

6.5. Dapatan temu bual pensyarah penggunaan Edmodo dalam pembelajaran

Dapatan temu bual bagi pensyarah 1 dan 2 menunjukkan pensyarah merasakan edmodo adalah merupakan satu bentuk perisian yang lebih bersifat pendidikan dan mesra pengguna. Pelaksanaan kuiz dalam edmodo amat menarik dan pelajar juga dapat membuat tugasan tersebut di mana-mana sahaja dan pada bila-bila masa sahaja. Masa yang diberi untuk menjawab menjadikan pelajar mampu untuk menyiapkan tugasan kuiz mengikut perancangan. Apa yang penting adalah pensyarah dapat melihat perkembangan pelajar secara personal dan ini akan dapat memotivasi pelajar untuk terus membaiki kelemahan diri.

“Saya rasa selesa dengan perisian ni....mudah...senang...dan yang penting dapat upload bahan untuk kerja pelajar...store secara online mudah...space pun sikit....emmm” (TB3/L1, ms3, b58-59).

“Yang bagusnya dalam Edmodo ialah lebih friendly user...markah pun dapat kita lihat..perkembangan pelajar dapat di pantau.....perisian ini ada di gunakan....tetapi kajian untuk melihat keberkesannya elok sangat di buat...setuju la.....”(TB4/L2, ms3, b60-62).
### 7. Perbincangan dan Kesimpulan

Hasil analisis yang dijalankan item yang berada di kedudukan pertama ialah Penggunaan perisian Edmodo dalam P&P adalah satu idea yang baik untuk pembelajaran dengan nilai skor defuzification sebanyak 10.6. Penyataan ini disokong oleh kajian Naaji, Herman, & Mustea, 2013. Kajian ini menunjukkan bahawa perkembangan pesat dalam bidang Internet dan alat pembelajaran mobile telah menjadikan interaksi sosial dalam kalangan masyarakat lebih mudah. Kajian menunjukkan bahawa kelebihan penggunaan platform Edmodo, pelajar boleh menjana kelebihan pembelajaran dengan penyuaraan aktif dan interaksi dua hala dalam komuniti pelajar itu sendiri. Pembelajaran juga mampu menjadi lebih baik dan menarik dengan menggunakan platform Edmodo untuk memudahkan pelajar mengakses pesan instan dan pengajaran menjadikan pengajaran lebih berkesan.


pada masa kini, pembelajaran secara mobile mewujudkan satu paradigm baru untuk pendidikan. Kajian oleh Yarandi, Tawil, Jahankhani, & Hosseini, 2012 pula mendapati kemajuan pesat dalam teknologi e-Pembelajaran membolehkan setiap pelajar untuk mempelajari proses pembelajaran sendiri berdasarkan ciriciri mereka sendiri. Tambahlah pula, perkembangan terkini dalam bidang peragaan semantik telah membawa kepada perhatian yang diperbaharui dengan memberi tumpuan kepada sistem e-pembelajaran berdasarkan kebolehan belajar, gaya pembelajaran, pengetahuan sedia dan pilihan.


8. Rujukan


Enriquez, M. A. S. (2014). Students’ Perceptions on the Effectiveness of the Use of Edmodo as a Supplementary Tool for Learning. In DLSU Research Congress (pp. 6–11).


RMK-10 (2010). Bab 5: Pembangun dan Membeakkan Modal Insan Bertaraf Dunia


Kefahaman Guru pada Pelaksanaan Kurikulum 2013 dalam Membuat Modul Pembelajaran di SMKN 3 Kota Banda Aceh

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\textbf{Kata Kunci:} Kefahaman guru, Pelaksanaan kurikulum, Modul pembelajaran

1. Pelaksanaan Kurikulum

Salah satu komponen penting daripada sistem pendidikan adalah kurikulum.Kurikulum merupakan komponen pendidikan yang dijadikan acuan oleh setiap unit pendidikan, baik oleh pengurus mahupun pengajar khususnya guru dan guru besar. Oleh itu sejak Indonesia mempunyai kebebasan untuk menyediakan pendidikan anak bangsanya, sejak saat itu pula kerajaan menyukseskan kurikulum. "Dalam hal ini kurikulum dibuat oleh kerajaan pusat secara sentralistik dan dikuatkuasakan bagi semua anak bangsa di seluruh tanah air Indonesia" (E. Mulyana, 2007, p.4).

Setelah beberapa lama kurikulum yang sentralistik itu dilaksanakan, beberapa tahun terakhir ini sepertinya ada kejanggalan berkaitan dengan kurikulum, pertanyaannya apakah setiap unit pendidikan, pengelola dan pengajar pendidikan, serta guru dan guru besar sudah menjadikan kurikulum sebagai acuan dalam melaksanakan tugas dan fungsinya? Sejauh...
manakah kefahaman mereka terhadap kurikulum yang dilaksanakan sekarang ini? 
"Perubahan kurikulum dalam era otonomi daerah dan desentralisasi pendidikan tidak lagi menjadi tugas orang-orang pusat, tetapi merupakan pekerjaan setiap unit pendidikan dan sekolah secara langsung, termasuk implementasinya" (Mulyana, 2009, p. 2).


Pandangan umum memperihalkan kebanyakan guru berasa kurang selesa terhadap suatu pembaharuan di sekolah kerana bimbang bahawa perubahan itu akan mengganggu keselesaian dan menjejakkan tugas serta peranan mereka sama ada secara langsung atau tidak yang berkaitan proses pengajaran dan pembelajaran. Habib Mat Som (1985) berpendapat keselesaan guru untuk melaksanakan pembaharuan adalah persoalan penting yang perlu dipertimbangkan oleh pihak percanggih pendidikan supaya wujudnya keharmonisan antara pihak pelaksana pembaharuan (guru) dan perancang inovasi itu sendiri, pelaksanaan pembaharuan tersebut jika pihak berkua kerua pendidikan mengganggap pembaharuan kurikulum sebagai satu kemestian, sedangkan guru melihatnya pada sudut pandang sebaliknya. Walau apapun reaksi guru terhadap pembaharuan kurikulum, namun perubahan akan terus berlaku, malah sukar untuk dibendung, seharusnya guru mempunyai pandangan tersendiri supaya mencapai sasarannya, (Sarason, 1991).

Sukmadinata (2002) menyatakan halangan utama dalam pelaksanaan kurikulum di sekolah terletak pada guru diantaranya kurangnya pengetahuan dan kemampuan guru itu sendiri. Kelemahan dijumpai jika kurikulum disusun oleh pihak lain, atau bukan guru yang mengajar seperti penyusunan kurikulum-kurikulum sebelumnya. (1) fakta lapangan menunjukkan bahawa tidak semua guru mempunyai kefahaman yang sama untuk mengimplementasikan kurikulum tersebut. Konon lagi kemampuan guru terhad maka sering terjadi masalah oleh itu implementasinya perlu dilakukan sama-sama dengan guru sehingga guru tahu persis apa yang dilakukan. (2) selama ini setelah kurikulum diubah, semua pihak menganggap kurikulum itu sudah final, tidak boleh diubah-ubah lagi. "Kejayaan

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pelaksanaan kurikulum sangat bergantung pada guru dan guru besar kerana keduanya merupakan kunci yang menggerakkan komponen sekolah" (Mulyasa, 2009, p 4).

Melaksanakan kurikulum baru sangatlah memerlukan kreativiti dan kemandirian guru dan sekolah untuk menyusun dan melaksanakannya, memang bukanlah pekerjaan mudah untuk melakukan apabila guru tidak mempunyai kefahaman kuat.


Kurikulum merupakan alat yang sangat penting bagi kejayaan suatu pendidikan. Tanpa kurikulum yang sesuai dan tepat akan sukar untuk mencapai tujuan dan sasaran pendidikan yang dikehendaki. Dengan kata lain kurikulum yang sesuai dan tepat boleh diharapkan agar terjadi perubahan kelakuan pelajar menurut apa yang diharapkan.

Kurikulum adalah pernyataan tentang tujuan-tujuan pendidikan yang bersifat umum dan khusus yang materinya dipilih dan disusun suatu pola tertentu untuk kepentingan belajar dan mengajar. Kurikulum sebagai rencana yang dibuat untuk membimbing kanak-kanak belajar di sekolah, disajikan dalam bentuk dokumen yang sudah ditentukan, disusun mengikut peringkat-peringkat regeneralisasi, dapat diaktualisasikan dalam kelas, dapat diamati oleh pihak yang tidak berkepentingan, dan boleh membawa perubahan tingkah laku. Dengan demikian dapat dikatakan kurikulum adalah rencana dan pengaturan mengenai tujuan, isi dan bahan pelajaran serta cara yang digunakan sebagai pedoman penyelenggaraan kegiatan pembelajaran untuk mencapai tujuan pendidikan tertentu.

Dalam kegiatan pembelajaran semua konsep, prinsip, nilai, pengetahuan, kaedah, alat dan kemampuan guru diuji dalam bentuk perbuatan yang akan mewujudkan bentuk kurikulum yang nyata (actual curriculum-curriculum in action). Perwujudan konsep, prinsip, dan aspek-aspek kurikulum tersebut seluruhnya terletak pada kemampuan guru sebagai pelaksana kurikulum. Menurut Rusman (2007) menyatakan kemampuan yang harus dimiliki oleh guru dalam implementasi kurikulum meliputi (1) pemahaman dari tujuan yang ingin dicapai (2) kemampuan untuk menyusun tujuan kurikulum menjadi lebih khusus (3) kemampuan untuk menterjemahkan tujuan khusus kepada tujuan pembelajaran.

Guru sebagai kunci pemegang pelaksana dalam kejayaan kurikulum, gurulah yang bertindak sebagai perancang, pelaksana kurikulum yang sebenarnya, untuk masa yang akan datang guru menghadapi cabaran dalam proses pembelajaran. Arends (2008) menyatakan bahawa pekerjaan guru pada abad ke-21 dihadapkan pada tujuan cabaran besar iaitu (1) mengajar dan teknologi (2) mengajar dengan pandangan baru tentang kemampuan, (3) mengajar dan pilihan, (4) mengajar dan acauntabiliti, (5) mengajar untuk pembelajaran aktif, (6) mengajar untuk pembinaan makna, (7) mengajar dalam masyarakat multikultural.

Dengan cabaran yang dihadapi guru, maka dalam implementasi kurikulum guru harus mampu melakukan rekabentuk/rancangan kurikulum yang berkesan dan mampu mencapai tujuan yang telah ditetapkan serta target-target yang ingin di capai, dengan demikian guru dituntut untuk memilik kefahaman dan wawasan yang luas tentang kurikulum baik secara teori mahupun secara praktikal. Sumantri (1988) menyatakan bahawa tujuan kurikulum tidak untuk mematikan karsa dan karya guru, tetapi sebaliknya guru itu dipandang sebagai orang yang menambahkan kekejaan dan adaptasinya dalam melaksanakan kurikulum.

Miller dan Seller (1985) menyatakan Implementasi sebagai proses, implementasi meliputi pengurangan perbezaan antara kenyataan amalan dan harapan praktikal oleh suatu inovasi. Implementasi adalah suatu proses penjelasan dalam penggunaan anjuran oleh inovasi terjadi dalam tahap, setiap waktu dan mengatasi halangan dalam perkembangannya. Pengertian tersebut di atas memberikan pemahaman bahawa kurikulum dalam dimensi
kegiatan adalah sebagai manifestasi daripada usaha untuk mewujudkan kurikulum yang bersifat dokumen tertulis menjadi terkini dalam siri aktiviti pembelajaran.

Setiap tahap dalam implementasi haruslah memperhatikan landasan-landasan pokok kurikulum. Menurut Murray Print (1993) landasan yang berpengaruh pada bentuk dan fikiran pelaksana kurikulum. Tiga landasan pokok yang harus dijadikan pedoman iaitu: (1) landasan falsafah iaitu menjelaskan tentang konsep yang boleh digunakan berpuncak dari pengetahuan yang dapat difahami, (2) landasan sosiologi adalah keadaan sosial dan budaya yang berpengaruh pada bentuk kurikulum, (3) landasan psikologi yang memperhatikan, menghuraikan, meramal dan mengamati perilaku manusia.


Kurikulum dan intruksi merupakan dua hal yang tak dapat dipisahkan, sebagai suatu rencana atau program, kurikulum tidak akan bermakna manakala tidak dilaksanakan dalam bentuk pembelajaran. Demikian juga sebaliknya, tanpa kurikulum yang jelas sebagai acuan, maka pembelajaran tidak akan berlangsung secara berkesan. Aktiviti pembelajaran yang diadakan oleh setiap guru, selalu bermula pada komponen-komponen pembelajaran yang disenaraikan dalam kurikulum. Siraj (2008) mengatakan bahawa kurikulum adalah seluruh pengalaman yang diperolehi oleh setiap individu pelajar dalam suatu program pendidikan yang bertujuan untuk mencapai sasaran yang lebih luas serta tujuan-tujuan tertentu yang berkaitan dan telah dirancang dalam bentuk satu teori rangka kerja serta kajian ataupun amalan profesional pada masa lalu dan masa kini.


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3. Membut Modul Pembelajaran

Hasil pemerhatian awal pada proses pengajaran dan pembelajaran yang dilakukan oleh beberapa guru di Sekolah Menengah Kejuruan (SMK) Negeri 3 Kota Banda Aceh di mana
guru dalam melaksanakan kurikulum 2013 masih mempunyai kesulitan dalam pelaksanaannya terutama dalam menyusun program, membuat modul.. Menurut Kunandar (2007), dalam menyusun kurikulum memberi wewenang kepada kepala sekolah dan guru untuk mengembangkan kurikulum, membuat komponen-komponen kurikulu, menyusun silabus dan membuat rencana pelaksanaan pembelajaran.

Kurikulum 2013 sebagai kurikulum yang berlaku sekarang ini dan sedang dilaksanakan disekolah yang ditetapkan oleh kerajaan Indonesia sebagai kurikulum Nasional Indonesia, untuk terlaksananya pembelajaran sesuai dengan tujuan dan sasaran yang ingin dicapai kurikulum ini menuntut kemahiran guru. Penerapan kurikulum menuntut perubahan dalam pembelajaran tidak hanya perubahan konsep, kaedah, dan strategi guru dalam mengajar, tetapi juga berkaitan dengan pola pikir, falsafah, dan komitmen guru dalam mengajar di kelas (Kunandar, 2007).


Modul adalah untuk membantu peserta didik menguasai tujuan belajar yang khusus satu bentuk bahan ajar yang dikemas secara sistimatis, direka dan terancang didalamnya memuat set pengalaman belajar, modul minimal memuat tujuan pembelajaran, Materi/ subtansi belajar dan penilaian. Sebagai sarana belajar yang bersifat mandiri modul sangat berfungsi, sehingga kelajuan masing-masing peserta didik dapat mencapai tujuan, Diknas, (2008).

4. Kesimpulan
Kejayaan pelaksanaan kurikulum sangat ditentukan oleh faktor guru, apabila guru tidak melaksanakan tugasnya dengan baik walaupun baiknya syarat pendidikan, maka pelaksanaan kurikulum (pembelajaran) tidak memuaskan. Tugas guru dan guru besar tidak hanya mengajar saja di sekolah, sebagai seorang yang terlibat dalam pelaksanaan kurikulum, guru dituntut untuk memiliki kefahaman dan wawasan yang luas secara teori dan praktikal iaitu antara lain: mempunyai kefahaman dalam membuat modul Pembelajaran.

5. Rujukan
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The Sharing of Practice: Fun and Easy Teaching and Learning of Listening and Speaking

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Abstract: This study discussed on the action plan done on a group of non-English option teachers who were not so familiar in the approaches and skills in teaching the language. Assisting the non-English option teachers in the development of listening comprehension was a very big challenge. It was a challenge that demands both the trainer's and the trainee's attention because of the critical role that listening plays, not only in communication, but also in the acquisition of language. It was a kind of intervention to give those teachers some useful guideline in carry out the listening and speaking lessons as required in Primary School Standard Curriculum (KSSR). Teaching listening and speaking is the first important part in a cycle of lessons in a modular concept for the new standard of the curriculum. The action plan was carried out in form of a workshop with those 39 teachers who representing 39 primary schools in the district. It was a sharing session with them on how to carry out the fun and easy teaching and learning in the classroom. The Fun Teaching and Learning (Listening and Speaking) workshop was just like a starting point or a platform for the teachers to get and to increase their knowledge in successfully conducting their teaching. The suggested teaching and learning strategies and the activities for classroom teaching and learning had been included. They were encouraged to use their own initiative to plan stimulating and enjoyable lessons suitable to their pupils’ level.

Keywords: Fun teaching, Modular concept, Non-English option

1. Introduction

English is taught as a second language in all Malaysian primary and secondary schools. The mastery of English is essential for pupils to gain access to information and knowledge written in English. That is why the development in teaching the language had been organized and improvised from time to time by the Ministry of Education. The School Improvement Specialist Coaches (SISC+) is a new post in it. I was appointed as one of them since last year and was posted in the district of Pasir Puteh, Kelantan. Before that, I was a master teacher and used to be the master trainer for the primary school English teachers throughout Kelantan. I involved in many courses under the district, the state and at national level. I also have 9 years of experience as an examiner for English (Ujian Pencapaian Sekolah Rendah) UPSR paper. Other than that, in 2008, I was a module writer for English Year 6 Module for Skim Baucer Tuisyen (SBT) at the National level. Since then, I actively involved as a modules writer for English Primary Year 6 for Kelantan state.

As the master trainer for English (Kurikulum Standard Sekolah Rendah) KSSR for many years, I was so concern and felt responsible towards the teachers understanding and how far they could accept this new curriculum and implement it in their classrooms. I enjoyed visiting the schools, got to know many teachers and shared many things about the teaching and the problems they faced. During my visits to schools, I found that many of them still didn’t understand on the whole idea and the modular concept of this new standard curriculum. And so sad to say here that, many of them were not the English-option teachers. They taught English because they were ordered to do so by the school administrative because
the school didn’t have enough English teachers. So, they were lack of everything regarding the teaching of English language.

So, lacking of the knowledge in teaching the language, I took it as a major issue here to be discussed in this action plan. Actually these teachers were the trained teachers who are very good and presentable in their own field. They had their skills in teaching based on their option taught but not in teaching English. For example, one of the experiences that I had during my visits to school, when I was asked by the teacher herself to be in her classroom during her teaching, I was very surprised to see the way she taught the students. Just imagine a teacher teaches English using a local dialect. It was hard to believe but that was the real situation happened in many of the schools here. In the present EFL classroom, the teaching of listening and speaking relies heavily on the language labs and tape recorders. The main reason for this is that most EFL teachers are non-native English speakers and thus may lack proficiency in English (Hajiyeva, 2010). Based on that, I realised it was a very serious issue and I chose to work on it in order to give those teachers some knowledge and provide them with ideas on how to carry out the teaching in the classrooms and make them aware of what they need to know about the language teaching. As trainers we need to help them and may be to force them to step outside of their comfort zone that never helped them learn to speak a language when they were at school and to do things completely differently. As stated by Lily Wong Fillmore and Catherine E. Snow (2000), today’s teachers need access to a wide range of information to function well in the classroom. The challenge of providing excellent teacher preparation and on-going professional development for teachers is enormous at any time.

2. The Action Plan

What I planned to do in this task is to carry out a one day workshop with the non-English option teachers in my district because so many of English teachers here were the non-English option teachers with various skills and qualities. As studies shown, teacher quality is an important factor in determining gains in student achievement, even after accounting for prior student learning and family background characteristics (Guerriero, 2012). So those teachers were from various teaching backgrounds but I chose only 39 teachers from 39 schools. They were called to the District Training Centre for that workshop. Actually, this is a collaborative work with the English language officer in the district. He was the one who did all the clerical works and on my part I worked on the workshop contents. The workshop focused only on the listening and speaking skills. It was called Fun Teaching and Learning (Listening and Speaking) Workshop. I chose Listening and Speaking skills to be developed in this first workshop because they are essential for those teachers to begin with basic literacy skills in order to build a strong foundation of language skills. In teaching and learning the language the basic listening and speaking should be introduced and trained in order to help them enrich their understanding of the language. The fun teaching and learning part were highlighted there to make them aware that the teaching and learning are definitely fun, meaningful and purposeful. ESL teachers have the opportunity to help adult ESL learners practice listening and speaking in the safe environment of the classroom (Miller, 2010).

There were three main slots in the workshop schedule (Appendix 1). The first slot was the introduction part to tell them the concept of listening and speaking. I did the activity by giving them the very simple instructions and the activity started with the ice-breaking session. It was the shouting game which I think very interesting and really enjoyed by the teachers. They got to know each other and at the same time they were forced to open their mouth and to shout in fun way. Then, followed with the explanation on why English is taught as a second language in all Malaysian primary and secondary schools. How important is
their roles as English teachers. Let them see the goal of the English language curriculum and how it could help pupils acquire the language in order to help them use it in their daily lives, to further their studies, and for work purposes. After that, some information on the new standard curriculum (KSSR) was explained to them including the aims, objectives and the modular concept in the teaching and learning. The purpose is to give a general view on what is stressed in the curriculum and their role as the teachers were to provide opportunities for pupils to question, to give responses to what they heard or learnt and even to evaluate texts that they listen to, read or view. The further explanation is on the concept of listening and speaking. Asked them some questions about their own experience in order to shaped their believe that their own experiences are also the source of knowledge for their teaching.

The second slot was Fun and Meaningful Activities for Listening and Speaking. The teachers were introduced to 5 selected activities (Appendixes 2 – 6) They were provided with a note on how to carry out the activities and the materials and worksheets needed. After that, they were divided into 5 groups and each group will do one activity for the listening and speaking lesson. Later on in slot 3, those 5 groups presented their activities. They will be commented on the strength and weaknesses of the activities by the other members of the floor. They also will have to think of the purposes of the activities and a few points on it will be introduced to them such as:

1. get feeling activity
2. get acquainted to each other
3. get to know
4. non-verbal

During the workshop, I was not only giving them all the necessary inputs but I also entertained all the questions asked by them because I want them to really understand on what they should do in their practice when they go back to the schools. I also give them a list of instructional language or the classroom commands that they could use in their classrooms (Appendix 7). In fact, I did one activity with them when I distributed those notes. I made them listened and followed my instructions in making a ‘hot-dog-book’ (appendix 8). It was so fun and they really enjoyed it. At the end of the workshop, I gave them a yellow form (Appendix 9) just to get some information on what they understand about the teaching of listening and speaking. In that form they were required to give feedbacks on the overall content of the workshop.

Listening is a demanding process, not only because of the complexity of the process itself, but also due to factors that characterize the listener, the speaker, the content of the message, and any visual support that accompanies the message (Brown & Yule, 1983). So, as the trainer, we need to make the teachers ready and very well prepared in doing the teaching. It was a great challenge for me as the trainer because those selected teachers are the non-English option teachers. I need to be a good model for them on how to do the listening and speaking activities.

Other than that, it is important for all teachers to understand the theories and methods that underlie and support the techniques and materials recommended in the classroom teaching. This knowledge will enable them to feel secure and confident with the activities they will carry out in their classrooms. It will also allow them to be creative or in other words, teachers who are knowledgeable with the methods, the activities or may be of the theory are more likely to adapt and create materials to suit the needs of the students they have in front of them. Here are three major theories, Krashen and Terrell’s Natural Approach, the Communicative Approach, and the Whole Language Approach, have influenced the
development of this curriculum guide. Krashen and Terrell's Natural Approach and the Communicative
Approach have been developed from research in the field of second language acquisition in the last fifteen
years. The Whole Language Approach was developed from research in the areas of reading and writing in
English as a first language. These three approaches have made great contributions to the field of teaching
English as a second language and have been found to complement one another (see underlying principles
in this guide). Nevertheless, the subtle differences among the three approaches have given this guide
flexibility and versatility. Principles quoted here from each one of these approaches will be presented with
an implication for the classroom. This theoretical input should have an enriching effect on teaching.

After a week I managed to go to the 6 schools to get the feedbacks from the teachers. They were
twelve of them out of twenty participants from the workshop. All of them did the activities in their
classrooms and they were quite happy with the students’ participation in the classrooms. Nine of them
carried out only one activity for one lesson of listening and speaking and the other three managed to do
two activities in one hour lesson. I got some feedbacks from the teachers on the activities they did. I was
using the Teacher Coaching Tool (TCT) – (Appendix 10) during the discussion at the schools.

3. Strengths and Limitation

The Fun Teaching and Learning (Listening and Speaking) workshop was just like a starting point or a
platform for the teachers to get and to increase their knowledge in conducting their teaching. The
suggested teaching and learning strategies and activities for classroom teaching and learning had been
included. It was hoped that the teachers will gain some useful ideas to help them carry out their daily
lessons. However, teachers were also encouraged not to rely solely on those suggested activities only
when planning lessons. They were encouraged to use their own creativity and initiative to plan
stimulating and enjoyable lessons suitable to their pupils’ level. So, it was good when the teachers were
so cooperative and willingly to do all the activities assigned to them. Other than that, they wanted to more
workshops in future for the other language skills.

The limitation only on the time constrain. In two weeks’ time of conducting this task, I managed to go
to only six schools and getting the feedbacks from only twelve teachers. Actually I have 39 primary
schools in my district. To gather all the selected teachers from those schools for a one day workshop will
not be a big problem but to go to all schools for the feedbacks and reflections will take more a month.

4. Reflections

I was quite satisfied with the overall process in conducting this task. The suggested activities provided
are merely suggestions and teachers are free to improvise and adapt accordingly to the level and
suitability of their pupils. All the activities selected for this workshop were very easy to conduct and
understand by the teachers. So, the teacher felt confident in practicing them in their classrooms. But still,
in future a lot more of initiative, imagination and creativity are needed by teachers in planning their
lessons in order to extend the experiences of their pupils. The approaches introduced to the teachers still
need to be guided depending on their understanding and proficiency levels. The challenges for those
teachers as they were the non-English option teacher were to find ways to help themselves first with the
understanding of the concept, skills and to have better fluency in using the language before they could
think of finding the appropriate strategies in helping their students develop fluency, accuracy and
appropriateness of language used.
Other than that, teachers also need to be exposed very well to the needs in the new standard curriculum documents (KSSR) which are based on the modular approach. From the observations and feedbacks, they were not really understanding with the flow (modular concept) they need to follow in conducting the lessons. This modular approach does not exclude integration of skills. Modules are increasingly being used in many countries as a way of organizing a language curriculum (Sadiq, Zamir, 2014). However, skills integration is exploited strategically to enhance pupils’ development of specific and specified language skills as described in the content and learning standards in a module. The trainer need to keep on supporting them to do and to come out with many more interesting activities in their lessons and hence improve their English language proficiency.

5. Conclusion

As we knew, the listening and speaking skill is crucial for communication at home, at school, as well as in the community. However, this skill is often neglected or given minimal emphasis during English language lessons. In order to develop this skill, teachers have to provide their pupils with various opportunities to listen and to talk about a range of subjects which may include topics on personal interests, school work and even current affairs. It is hoped that the learning standards will offer teachers some ideas on how they could provide opportunities for pupils to engage in various listening and speaking activities (Primary School Standard Curriculum, 2011)

Assisting the non-English option teachers in the development of listening comprehension was a very big challenge. It was a challenge that demands both the trainer's and the trainee's attention because of the critical role that listening plays, not only in communication, but also in the acquisition of language. Knowledge of the listening process and factors that affect listening enable teachers to select or create listening texts and activities that meet the needs of the their students in schools. Teachers, then, must weave these listening activities into the curriculum to create a balance that mirrors the real-world integration of listening with speaking, reading, and writing.

6. Acknowledgements

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Penggunaan Strategi Pembelajaran Bahasa untuk Menguasai Kemahiran Membaca dalam Kalangan Murid Pemulihan Khas

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Abstrak: Kajian ini bertujuan untuk mengkaji penggunaan strategi pembelajaran bahasa berasaskan kemahiran membaca dalam kalangan murid Pemulihan Khas. Seorang guru Bahasa Melayu dan enam orang murid Pemulihan Khas dipilih sebagai peserta dalam penyelidikan ini. Kajian kualitatif ini menggunakan reka bentuk kajian multicase single site. Data diperoleh melalui analisis dokumen, pemerhatian dan temu bual. Data pemerhatian dan temu bual ditranskrip bagi memperoleh tema, diuruskan dengan menggunakan perisian Nvivo8. Kesahan data dilakukan secara memeriksa kesan penyelidik, triangulasi pelbagai sumber data, dan bertaklimat dengan rakan sejawat dan pengesahan daripada peserta kajian. Kebolehpercayaan data diperoleh melalui audit trail. Hasil kajian menunjukkan strategi pembelajaran bahasa (SPB) berasaskan kemahiran membaca menggunakan sama ada pendekatan, kaedah, dan teknik (a) abjad, (b) sebutan suku kata dan bacaan perkataan bermakna, (c) latih tubi, (d) sifir bahasa, (e) bacaan berfokus, (f) Visual Audio Kinesthetic Tactile (VAKT), dan (g) rakam dan tayang, diaplikasikan oleh peserta kajian bagi menyelesaikan masalah penguasaan kemahiran membaca dalam kalangan murid Pemulihan Khas. Kajian ini telah menyumbang kepada pendidikan Pemulihan Khas dalam penguasaan kemahiran Bahasa Melayu melalui strategi pembelajaran bahasa berasaskan kemahiran membaca.

Kata kunci: Strategi pembelajaran bahasa, kemahiran membaca dan Program Pemulihan Khas

1. Pengenalan

Pemulihan Khas dari segi pola penggunaannya dan yang paling efektif dalam pengajaran dan pembelajaran berkesan. Guru Pemulihan Khas yang dimaksudkan dalam kajian ini merujuk kepada guru yang mempunyai pengetahuan, kemahiran dan kepakaran yang tinggi dalam mata pelajaran Bahasa Melayu khususnya.

2. Objektif & Persoalan Kajian

Kajian ini bertujuan untuk mengenal pasti SPB berasaskan kemahiran membaca yang diamalkan oleh guru terhadap murid-murid Pemulihan Khas. Kajian ini juga ingin melihat SPB berasaskan kemahiran membaca yang dominan penggunaannya dalam kalangan guru Pemulihan Khas. Di samping itu juga, kajian dapat mengenal pasti SPB berasaskan kemahiran membaca yang paling efektif penggunaannya dalam amalan guru terhadap murid-murid Pemulihan Khas. Persoalan kajian yang dikenal pasti ialah (a) apakah SPB berasaskan kemahiran membaca yang paling dominan dalam amalan guru terhadap murid Pemulihan Khas? (b) Apakah amalan SPB berasaskan kemahiran membaca yang paling efektif digunakan oleh guru-guru terhadap murid Pemulihan Khas?

3. Tinjauan Literatur


Pelbagai label yang berbeza terhadap bagaimana seseorang murid belajar, proses mentafsir dan proses pemikiran kognitif telah diberi oleh pengkaji-pengkaji dalam SPB (Zamri, Mohamed Amin dan Nik Mohd. Rahimi, 2010). Strategi pembelajaran merujuk kepada proses kognitif seseorang murid ketika melakukan aktiviti semasa belajar bahasa. Mohamed Amin (2000), berpendapat istilah SPB merujuk kepada tiga ciri yang berbeza iaitu: (a) strategi pembelajaran merujuk kepada tabiat pembelajaran bahasa seseorang murid semasa proses belajar sesuatu bahasa. Contohnya, murid tersebut boleh menerangkan perkara yang dilakukan ketika beliau mempelajari bahasa. (b) strategi pembelajaran merujuk kepada pengetahuan yang diperoleh oleh murid ketika mereka diminta mengingat semula aspek pembelajaran mereka. (c) strategi pembelajaran merujuk kepada pengetahuan am seseorang murid yang mempengaruhi pemilihan strategi mereka. Mereka boleh mengenal pasti apa yang sukar dan apa yang mudah ketika belajar bahasa.


Wenden (1987) dan Oxford (1990) menyatakan bahawa SPB mendatangkan beberapa kebaikan kepada murid dalam menguasai bahasa. Kedua-dua tokoh tersebut menyenariakan sembilan ciri SPB yang boleh membantu meningkatkan penguasaan kemahiran bahasa dalam kalangan murid, iaitu; (a) meningkatkan kecekapan berkomunikasi, (b) menggalakkan pembelajaran kendirli, (c) melibatkan penyelesaian masalah, (d) meningkatkan pembelajaran dengan aksi-aksi yang lebih khusus, (e) melibatkan proses di luar kognitif, (f) menyumbang ke arah pembelajaran secara langsung dan tidak langsung, (g) melibatkan kepelbagaian, (h) menguasai aksi sedar dan tidak sedar, dan (i) menggalakkan kelenturan.


Dalam konteks pembelajaran murid Pemulihan Khas di negara ini, peranan guru bahasa (Bahasa Melayu) amat penting untuk membantu murid-muridnya menguasai bahasa dengan cepat dan berkesan. Menurut Hall (1997), guru harus mempertimbangkan bagaimana murid dan guru boleh menggunakan sesuatu strategi pembelajaran bahasa. Untuk itu, guru perlu mengenal pasti keupayaan murid-murid dalam menggunakan strategi pembelajaran bahasa yang berbeza berdasarkan jumlah maklumat atau pengetahuan yang diterima setiap muridnya.

Sehubungan dengan itu, dalam konteks murid Pemulihan Khas, pengajaran dan pembelajaran kemahiran membaca amatlah memerlukan strategi kemahiran membaca yang tertentu untuk meningkatkan penguasaan kemahiran membaca dengan lancar. Maka penyelidikan ini cuba menyelidiki SPB melalui kemahiran membaca yang telah digunakan oleh guru-guru Pemulihan Khas dalam pengajaran dan pembelajaran mata pelajaran Bahasa Melayu.

4. Metodologi


5. Dapatan Kajian

Kemahiran membaca merentas semua mata pelajaran. Kelemahan dalam kemahiran membaca memberi kesan kepada pencapaian rendah dalam semua mata pelajaran di sekolah. Bertitik-tolak daripada

Penguasaan kemahiran membaca boleh membantu murid membaca dengan lancar dan berkesan. Bagi mencapai objektif dalam Program Pemulihan Khas agar murid boleh menguasai kemahiran membaca, maka kaedah atau teknik membaca yang digunakan perlu sesuai dengan minat dan kemampuan murid. Hasil penelitian yang dijalankan didapati amalan guru Pemulihan Khas dalam melaksanakan SPB Bahasa Melayu berasaskan kemahiran membaca merangkumi kaedah atau teknik (a) abjad, (b) sebutan suku kata dan bacaan perkataan bermakna, (c) latih tubi, (d) sifir bahasa, (e) bacaan berfokus, (f) VAKT, (g) rakam dan tayang.


Secara umumnya, murid Pemulihan Khas merupakan murid yang tidak dapat menguasai kemahiran membaca melalui kaedah konvensional. Hal ini berpunca daripada tidak mengenal abjad kerana sebutan abjad tersebut adalah abstrak. Maka perlu dibantu dengan kaedah atau teknik lain seperti benda maujub dan perkataan bermakna. Menurut peserta kajian;


Susulan itu, peserta kajian didapati menggunakan kaedah membatang suku kata perkataan bermakna dalam melaksanakan SPB kemahiran membaca dalam kalangan murid Pemulihan Khas. Contoh data pemerhatian kaedah membatang suku kata perkataan bermakna oleh peserta kajian:

GP: Tengok gambar dan sebut kat cikgu. Cuka eja /jarli/ /kaki/.” 

Berdasarkan data pemerhatian di atas, guru memberi arahan kepada muridnya membatang suku kata bagi perkataan bermakna yang berkaitan dengan fizikal murid dengan berbantuan gambar yang ditayangkan melalui komputer.
Dalam data temu bual peserta kajian menyatakan bahawa terdapat murid Pemulihan Khas yang tidak boleh menghafal. Maka murid tersebut perlu alternatif SPB kemahiran membaca yang lain. Contoh data temu bual oleh peserta kajian dalam memperkenalkan huruf melalui SPB berasaskan kemahiran membaca menggunakan perkataan bermakna:


Proses berulang bagi menyebut suku kata dan membatang perkataan berikut:


Latih tubi membatang suku kata penuh juga digunakan dalam pengajaran dan pembelajaran Pemulihan Khas dengan berbantukan tayangan video. Contoh data oleh peserta kajian:

Ni kita nak eja apabila tengok video ni.
GP & murid: /bawa/
GP: eja /bawa/
Murid: /ba.wa/ /bawa/.
GP: eja lagi.
Murid: /ba.wa/ /bawa/.
GP: kuat-kuat. Lagi kuat (guru mengulang tayang video setiap kali memberi arahan supaya murid mengulang mengeja).


Latih tubi juga digunakan oleh peserta kajian bagi menangani masalah pengaruh bahasa pasar. Berikut contoh data pemerhatian latih tubi membatang suku kata kvkvkv oleh peserta kajian.

GP: ha tu! /ba/ /ba/.
Murid: /ba/ /ba/.
GP: /te//te/.
Murid: /te//te/.
GP: /ri//ri/.
Murid: /ri//ri/.
GP: /bateri/
Murid: /bateri/ /bateri/.
GP: /bateri/.
Murid: /bateri/.
GP: eja!
Murid: /ba.te.ri//beteri/


Selain perkataan /bateri/ juga berlaku terhadap perkataan /tomato/. Contoh data pemerhatian:

GP: Tomato
Rizam: /to/ma/to/, /tomato/
GP: Tomato ka tometo
Nabil: Tometo
GP: Eja tengok.
Nabil: /to/me/to/
GP: Betulkah? Dak.
Nabil: Betul. Kenapa tak betul.
GP: Tomato ka tometo?
Rizam & Daniel: Tomato.
Daniel: Tak tau.
GP & murid: Tomato
Berdasarkan data pemerhatian di atas, murid peserta kajian boleh mengeja dan membatang suku kata dengan betul. Contohnya /tol/ /ma/ /to/. Tetapi apabila menyebut mengikut bahasa pasar contohnya /tomoto/. Maka latih tubi dilakukan bagi menyebut perkataan /tomato/ dengan betul dalam bacaan apabila membatang perkataan tersebut.

Seterusnya SPB berasaskan kemahiran membaca yang diamalkan oleh peserta kajian ialah sifir bahasa. Sifir bahasa merupakan satu kaedah belajar membaca dengan membatang suku kata. Kaedah sifir bahasa diaplikasikan oleh guru Pemulihan Khas bagi menyelesaikan masalah murid yang tidak dapat atau keliru dalam memenggal suku kata. Dalam penggunaan kaedah sifir bahasa, pada peringkat awal, peserta kajian menggunakan jari sebagai bilangan suku kata. Contoh data pemerhatian bagi kaedah penggunaan jari bagi mewakili bilangan membata suku kata dan seterusnya membunyikan perkataan oleh peserta kajian: “guru menggunakan jari telunjuk supaya Amir mengeja apa yang ditunjuknya.” Berikutnya data pemerhatian peserta kajian semasa mengarahkan muridnya meletakkan jari di bawah suku kata yang perlu dieja:

Amir: (sambil tunjuk dengan dua jari pada dua suku kata iaitu jari telunjuk, tunjuk pada suku kata pertama /sa/ dan jari hantu ditunjuk pada suku kata kedua /yut/) /sayut/.

Seterusnya murid membaca menggunakan bilangan mewakili bilangan huruf dalam suku kata. Contoh data pemerhatian pengajaran melalui kemahiran membaca menggunakan kaedah sifir bahasa oleh peserta kajian:

GP: hak ni berapa nak baca?
Amir: 2, 2, 3. /pe/ /la/ /jar/.
GP: hak ni berapa?
Amir: 3, 3. /ban/ /ji/, /banji/.
GP: Hak ni berapa?
Amir: 3, 3. /mak/ /mut/, /makmut/.
GP: hak ni berapa?
Amir: 3, 2, 2. /mer/ /ti/, /merpati/.
GP & Amir: 1, 3
Amir: /a/ /sar/, /asar/.
GP & Amir: 2,2,3.
Amir: /ar/ /ki/ /tek/, /arkitek/.
GP & Amir: 2,3
Amir: /ca/ /tur/, /catur/.
Amir: 3, 2, 2. /far/ /ma/ /si/, /farmasi/.

Menurut peserta kajian, walaupun menggunakan kaedah sifir bahasa dalam pengajaran Bahasa Melayu, pendekatan pengajaran iaitu pendekatan induktif tetap diambil kira untuk keberkesanan pengajaran. Contoh data temu bual kaedah pengajaran Bahasa Melayu menggunakan sifir bahasa oleh peserta kajian:


Oleh kerana tahap pemahaman murid Pemulihan Khas yang agak lemah, maka guru perlu mengulang-ngulang menggunakan sifir bahasa dalam pengajaran membaca. Penggunaan jari oleh guru dalam memberi arahan untuk menyebut bilangan suku kata yang perlu dibatangkan, membolehkan murid memberi fokus terhadap pengajaran dan pembelajaran yang dilaksanakan. Kesannya murid dapat menumpukan perhatian terhadap pengajaran guru.

SPB berasaskan kemahiran membaca menggunakan bacaan berfokus diamalkan oleh guru Pemulihan Khas bagi mengatasi masalah murid yang agak lemah dalam kemahiran membaca. Bacaan berfokus juga adalah untuk melatih murid melihat kumpulan kata-kata dalam setiap sebutan yang dibaca. Disamping itu bacaan berfokus juga bertujuan untuk melatih mina murid memikirkan apa yang dibaca. Semasa membaca bahan bacaan yang bermakna, murid dapat memberi tumpuan memahami dan memerhatikan setiap kata yang di baca. Kesannya murid dapat menumpukan perhatian terhadap pengajaran guru.


Bagi mengukuh pengajaran kemahiran membaca, peserta kajian memanfaatkan pendekatan membaca pelbagai deria (Multisensory Reading Method) dikenali sebagai VAKT. V - visual (penglihatan), A - audio (pendengaran), K - kinestetik (pergerakan), dan T - tactile (sentuhan). VAKT menggabungkan deria penglihatan dan pendengaran dengan tulisan (kinestetik atau pergerakan). Contoh data temu bual berkaitan penggunaan kaedah VAKT oleh peserta kajian:


Dalam pendekatan ini murid melihat dan menyebut perkataan sambil menulis perkataan berdasarkan ingatannya. Kaedah VAKT menggunakan prosedur pengajaran iaitu (a) memerhati
perkataan yang hendak dipelajari, (b) menyebut perkataan itu, (c) cuba menulis perkataan itu berdasarkan ingatannya, dan (d) membandingkan hasil tulisan dengan perkataan asal. Dirumuskan bahawa pendekatan VAKT dilaksanakan berasaskan rangsangan beberapa deria yang sensitif bagi mengukuhkan pembelajaran.

Menarik minat dan perhatian murid Pemulihan Khas amat penting dititikberatkan dalam menentukan SPB yang digunakan oleh guru Pemulihan Khas. Satu daripada kaedah yang boleh menarik minat murid yang diaplikasikan oleh peserta kajian ialah rakam dan tayang. Contoh data temu bual kaedah rakam dan tayang dalam pengajaran kemahiran membaca oleh peserta kajian:


Menurut peserta P04, dalam melaksanakan pengajaran kemahiran membaca, beliau merakam murid membaca. Kemudian tayang semula video yang dirakamkan untuk ditonton murid tersebut dan rakannya. Melalui rakam dan tayang, beliau telah menarik minat murid-murid Pemulihan Khas untuk respon dan aktif dalam pengajaran kemahiran membaca khususnya.

6. Perbincangan

Realitinya murid-murid Pemulihan Khas memerlukan bantuan dan sokongan daripada peserta kajian kerana mereka tidak berupaya untuk belajar sendiri bagi menguasai isi kandungan baharu atau sesuatu kemahiran bagi setiap sesi pengajaran dan pembelajaran di dalam bilik darjah arus perdana. Penguasaan kemahiran membaca dan memahami menentukan tahap penguasaan isi kandungan pelajaran yang mampu diperoleh oleh murid Pemulihan Khas. Berdasarkan dapatan kajian, penyelidik merumuskan bahawa SPB berasaskan kemahiran membaca merupakan strategi yang paling difokuskan oleh peserta kajian berbanding dengan kemahiran lisan dan kemahiran menulis. Peserta kajian menyatakan bahawa matlamat pengajaran murid Pemulihan Khas adalah bagi membolehkan muridnya pandai membaca.

SPB kemahiran membaca menggunakan kaedah konvensional (abjad) terlebih dahulu diamalkan oleh peserta kajian. Kaedah ini memerlukan murid mengingat dan mengenal semua 26 huruf iaitu daripada huruf a hingga z. Peserta kajian menggunakan kaedah konvensional terlebih dahulu sebelum mencuba kaedah alternatif yang lain sekiranya murid tidak berupaya menghafal atau mengenal huruf yang diperlukan dalam penguasaan kemahiran membaca.

SPB berasaskan kemahiran membaca yang paling dominan dalam kajian ini ialah latih tubi bacaan, dan bacaan suku kata perkataan bermakna. Peserta kajian didapati kerap mengamalkan dan melaksanakan kedua-dua strategi tersebut. Latih tubi bacaan yang digunakan ialah latih tubi sebutan penuh perkataan yang bermakna dengan berbantukan gambar atau slaid dalam paparan komputer, latih tubi sebutan suku kata berpandukan gambar yang dipaparkan di komputer dan juga merujuk kad suku kata dan kad gambar, latih tubi membina ayat mudah, dan latih tubi digunakan bagi membetulkan kesilapan pertuturan murid dalam bacaan kesan dialek daerah.

Selain itu, SPB kemahiran membaca juga diamalkan oleh peserta kajian dengan membaca perkataan bermakna menggunakan bahan yang terdapat di dalam bilik darjah dan perkataan pada makanan ringan.
(maujud) sebagai rangsangan murid membaca. Daripada perbincangan di atas, didapati dua SPB kemahiran membaca dikenal pasti yang diamalkan secara dominan oleh peserta kajian iaitu latih tubi sebutan penuh perkataan yang bermakna, dan sebutan suku kata atau perkataan bermakna. SPB kemahiran membaca menggunakan sifir bahasa didapati amat efektif diaplikasikan oleh guru Pemulihan Khas bagi mengatasi masalah keliru dalam memenggal suku kata. Dalam penyelidikan ini berlaku terhadap murid bukan Melayu. Sehubungan itu, kaedah ini boleh diterapkan dalam pengajaran Bahasa Melayu sebagai bahasa kedua. Selain daripada itu, pendekatan VAKT didapati amat efektif diaplikasikan dalam kalangan murid Pemulihan Khas kerana memberi pendedahan multimedia melalui penglihatan, pendengaran, pergerakan dan sentuhan. Hal ini memerlukan penumpuan semua deria daripada murid semasa aktifiti membaca dijalankan dan dapat menarik perhatian murid terhadap pengajaran dan pembelajaran yang dilangsungkan.

7. Cadangan

Dapatkan yang diperoleh daripada penyelidikan ini dapat memberikan gambaran mengenai pelaksanaan pengajaran dan pembelajaran Pemulihan Khas. Walauupun dapat memberikan gambaran atau realiti yang berlaku dalam silik darjah Pemulihan Khas. Dari aspek perancangan, guru Pemulihan Khas perlu mengenai pasti masalah penguasaan kemahiran membaca khususnya, sebelum membuat perancangan pengajaran. Seterusnya menyediakan rancangan pengajaran individu mengikut keperluan bagi menyelasaikan masalah penguasaan kemahiran bahasa yang dikenal pasti. Hal ini kerana setiap individu murid Pemulihan Khas berbeza dari masalah penguasaan kemahiran bahasa semasa aktifiti membaca dan memerlukan SPB yang pelbagai alternatif. Selanjutnya guru Pemulihan Khas hendaklah menjalankan penilaian berterusan dan merekodkannya dengan rapi dan tersusun.

Penyelidikan ini juga mencadangkan bahawa penekanan dalam strategi pembelajaran bahasa bagi murid Pemulihan Khas juga hendaklah melalui pembelajaran berasaskan pengalaman. Sesuatu peristiwa bermakna yang pernah dialami boleh memberikan ingatan yang kuat kepada murid Pemulihan Khas yang terlibat. Sehubungan dengan itu, murid hendaklah dilibatkan dengan pelbagai aktiviti dalam dan di luar bilik darjah. Penglibatan dalam aktiviti-aktiviti tersebut dapat memberikan mereka pengalaman yang bermakna. Pembelajaran melalui pengalaman merupakan pendekatan yang inductif di mana murid mengalami satu proses mental melalui memerhati peristiwa-peristiwa tertentu untuk memperoleh satu generalisasi.

Penekanan dalam strategi pembelajaran berasaskan pengalaman merupakan proses pembelajaran. Refleksi peribadi tentang pengalaman dan penggubahan pelan untuk mentransformasi pengajaran kepada konteks yang lain merupakan faktor penting dalam pengalaman pembelajaran yang berkesan. Pembelajaran melalui pengalaman boleh meningkatkan pemahaman dan pengekal berbanding dengan kaedah yang semata-mata melibatkan mendengar, membaca, atau bahkan melihat. Murid biasanya lebih bermotivasi apabila mereka mengambil bahagian secara aktif dan mengajar antara satu sama lain dengan menerangkan apa yang mereka lakukan.

8. Penutup

Penyelidikan ini merupakan satu penerokaan kepada kajian dalam bidang pendidikan Pemulihan Khas khususnya dalam konteks SPB berasaskan kemahiran membaca. Penyelidikan ini mencungkil amalan sebenar yang berlaku semasa pelaksanaan pengajaran dan pembelajaran Bahasa Melayu dalam bilik darjah Pemulihan Khas di sekolah rendah kebangsaan. Dapatkan kajian menemukan beberapa SPB
berasaskan kemahiran membaca dalam amalan guru yang boleh diambil manfaat dan dapat meningkatkan profesi keguruan khususnya guru yang terlibat dalam pelaksanaan Program Pemulihan Khas. Dapatan
dapatkan kajian ini juga jelas menunjukkan bahawa perancangan yang tepat yakni berasaskan masalah penguasaan kemahiran bahasa yang dikenal pasti bagi setiap individu, kaedah/teknik serta bahan bantu mengajar yang sesuai dengan tahap kemampuan murid, SPB yang relevan bagi mengatasi masalah penguasaan kemahiran bahasa murid boleh memberi
impak yang sangat berkualiti kepada pengajaran dan pembelajaran guru Pemulihan Khas.

9. Rujukan


Kesan Pembelajaran Berasaskan Masalah (PBM) terhadap Pencapaian Pelajar di Kolej Komuniti Pasir Mas

Wan Farah Aida binti Wan Abdullah and Ida Suriati binti Awang Yah
Kolej Komuniti Pasir Mas, Kelantan, Malaysia


Katakunci: Pembelajaran Berasaskan Masalah, pencapaian pelajar

1. Pengenalan


Bertitik tolak daripada tuntutan ini, kini dapat dilihat sistem pengajaran dan pembelajaran lebih menumpukan kepada pembelajaran yang proaktif dan inovatif dimana pembelajaran lebih berpusatkan kepada pelajar. Sistem kurikulum telah ditambahbaiki mengikut kesesuaian dan keperluan semasa. Sejajar dengan arus kemodenan pada masa kini, pihak Kolej Komuniti memikul tanggungjawab yang besar dalam melahirkan graduan yang bukan sahaja untuk memenuhi keperluan dan kehendak pasaran industri sahaja, malah turut melahirkan graduan yang berkualiti dan berdaya saing dalam memenuhi piawai industri di luar sana. Hal demikian, pendekatan pengajaran dan pembelajaran yang digunakan di dalam kelas berkait rapat di antara satu sama lain dimana corak pembelajaran yang menarik mampu
melahirkan pelajar yang berkualiti. Pembelajaran yang menarik adalah berpunca daripada hasil pendekatan pengajaran yang digunakan oleh guru di dalam kelas (Abu Bakar, 2010).


2. Metodologi


2.1. Populasi dan Sampel

Dua kelas iaitu pelajar dari semester dua sesi Julai 2015 dan November 2015 daripada Kolej komuniti Pasir Mas telah dipilih sebagai kumpulan kawalan dan rawatan dalam menjalankan kajian ini. Kedua-dua kumpulan ini dipilih secara rawak (randomly assignment) dalam menentukan kumpulan kajian. Seramai 81 orang pelajar dipilih bagi kedua-dua kumpulan dimana 40 orang pelajar mewakili kumpulan kawalan manakala 41 orang pelajar mewakili kumpulan rawatan. Kedua-dua kumpulan pelajar ini adalah setara dan tidak terdapat perbezaan dalam kalangan pelajar (ujian levene, p = 0.69).

2.2. Instrumen Kajian
Instrumen yang digunakan dalam kajian ini adalah set ujian pencapaian bagi kursus Prinsip Perakaunan. Set ujian pencapaian ini digunakan bagi mengetahui markah pencapaian pelajar bagi kedua-dua kumpulan selepas sesi rawatan diberikan kepada pelajar. Soalan ujian dibina berdasarkan silibus dalam modul Prinsip Perakaunan yang merangkumi 3 topik pengajaran iaitu topik 2, 3 dan 4. Tahap kesukaran soalan yang dibina berdasarkan kepada Jadual Penentu Ujian (JPU) dengan berpandukan kepada aras Taksonomi Bloom yang merangkumi pengetahuan, kefahaman, analisis dan aplikasi (Othman et al., 2006). Ujian pencapaian ini disediakan oleh pensyarah Kolej Komuniti Pasir Mas yang mengajar kursus Prinsip Perakaunan dan mempunyai pengalaman mengajar melebihi 10 tahun dalam bidang perakaunan. Seterusnya, soalan ujian yang telah siap dibina disahkan oleh ketua program Kolej Komuniti Pasir Mas. Kebolehpercayaan bagi ujian pencapaian pelajar ini dilihat melalui nilai koefisien di antara kedua-dua kumpulan dan hasil analisis telah menunjukkan nilai koefisien \( r = .574** \). Ini menunjukkan kebolehpercayaan ujian pencapaian adalah tinggi dengan nilai koefisien yang besar iaitu di antara .50 kepada 1.0 (Ghafar, 2001). Dengan ini, kajian dapat dijalankan bagi kedua-dua kumpulan kajian.

2.3. Analisis Data
Dapatan kajian dikumpulkan melalui pasca ujian dimana ujian pencapaian Prinsip Perakaunan dijalankan ke atas pelajar bagi kedua-dua kumpulan. Data-data kajian ini dianalisis dengan menggunakan statistik deskriptif (min, dan sisihan piawai) dan statistik inferensi (ujian t iaitu independent t-test).

3. Keputusan
Jumlah keseluruhan responden yang terlibat dalam kajian ini adalah 81 orang dimana 50.62% dari kumpulan rawatan manakala 49.38% dari kumpulan kawalan. Bagi kumpulan rawatan, 41 orang pelajar terlibat dimana 14.6% adalah lelaki dan 85.4% adalah perempuan. Manakala bagi kumpulan kawalan 40 orang pelajar terlibat dimana 20.0% adalah lelaki dan 80.0% adalah perempuan. Hasil dapatan menunjukkan pelajar perempuan mendominasi kedua-dua kumpulan kajian. Ringkasan perbezaan jantina seperti dalam jadual 3.1.

<table>
<thead>
<tr>
<th>Jantina</th>
<th>Rawatan</th>
<th>Kawalan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lelaki</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Perempuan</td>
<td>35</td>
<td>32</td>
</tr>
<tr>
<td>Jumlah</td>
<td>41</td>
<td>40</td>
</tr>
</tbody>
</table>

Hasil daripada analisis yang telah dijalankan, terdapat perbezaan nilai min bagi ujian pencapaian yang dijalankan ke atas kumpulan rawatan dan kawalan. Nilai min bagi kumpulan rawatan adalah 15.60 \( (SD = 4.65) \) manakala min bagi kumpulan kawalan adalah 13.42 \( (SD = 4.71) \). Perbezaan nilai min bagi ujian pencapaian untuk kedua-dua kumpulan adalah sebanyak 2.18. Ringkasan nilai min bagi markah ujian pencapaian untuk kedua-dua kumpulan adalah seperti dalam jadual 3.2.
JADUAL 3.2: Nilai Min dan Sisihan Piawai Ujian Pencapaian Bagi Kumpulan Rawatan dan Kawalan

<table>
<thead>
<tr>
<th>Kumpulan</th>
<th>Min</th>
<th>Sisihan Piawai (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rawatan (PBM)</td>
<td>15.60</td>
<td>4.652</td>
</tr>
<tr>
<td>Kawalan(Tradisional)</td>
<td>13.42</td>
<td>4.711</td>
</tr>
<tr>
<td>Min Perbezaan</td>
<td>2.18</td>
<td></td>
</tr>
</tbody>
</table>

Analisis lanjut ujian t (independent t-test) dijalankan bagi melihat dengan lebih mendalam terhadap perbezaan pencapaian di antara kumpulan rawatan dan kawalan. Berdasarkan analisis independent t-test, keputusan ujian Levene menunjukkan bahawa nilai $p = 0.69$, dimana nilai ini lebih besar daripada nilai $\alpha = 0.05$, ini bermakna varian untuk dua kumpulan adalah sama. Maka nilai pada baris pertama (equal variances assumed) dijadikan sebagai rujukan. Seterusnya, keputusan ujian t telah menunjukkan nilai $p$ (2 tailed) adalah 0.032 dimana nilai ini lebih kecil daripada $\alpha = 0.05$. Dengan ini, hipotesis nul ditolak dimana terdapat perbezaan yang signifikan di antara markah ujian pencapaian bagi kumpulan rawatan dengan kumpulan kawalan. Ringkasan bagi independent t-test adalah seperti dalam jadual 3.3.

JADUAL 3.3: Independent t-test Bagi Ujian Pencapaian Pelajar

<table>
<thead>
<tr>
<th>Pasca ujian (ujian pencapaian)</th>
<th>Levene’s test for equality of variances</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$</td>
<td>Nilai $p$</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.17</td>
<td>.69</td>
</tr>
</tbody>
</table>

4. Kesimpulan

Secara kesimpulannya, pendekatan PBM yang diterapkan dalam proses pengajaran dan pembelajaran telah memberi kesan yang positif kepada pelajar perakaunan yang mengambil kursus Prinsip Perakaunan. Hal ini dapat dilihat melalui peningkatan pencapaian pelajar dalam kursus Prinsip Perakaunan. Lantaran itu, ia jelas menunjukkan bahawa pelajar perakaunan dapat menguasai kursus Prinsip Perakaunan melalui penerapan PBM yang telah dilaksanakan dan pendekatan yang diterapkan ini selari dengan konsep pembelajaran yang telah digariskan dalam teori konstruktivisme. Justeru itu, para pensyarah khususnya di Kolej Komuniti Pasir Mas boleh mengambil inisiatif untuk mendedahkan konsep PBM terhadap semua kursus sebagai satu kaedah yang berkesan dalam meningkatkan pencapaian pelajar. Hal ini kerana gaya pembelajaran sebegini mampu menyumbang kepada pembelajaran sepanjang hayat dan meransang pelajar untuk mengeroka dengan lebih mendalam terhadap sesuatu topik yang di ajar. Pendekatan PBM yang diterapkan ini juga adalah sejajar dengan Falsafah Pendidikan Kebangsaan yang ingin menghasilkan pelajar yang bersedia dari segi jasmani, emosi, rohani, dan intelek dalam memasuki dunia pekerjaan yang sebenar.
**Rujukan**


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Accounting undergraduates' learning perception in seeking additional professional qualification

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Abstract: This study explores and analyses the accounting students’ perception in seeking additional professional accounting qualification besides their accounting degree qualification. A survey analysis conducted on 52 accounting undergraduates in third year with two main questions. The first question is “why the students are seeking additional accounting professional qualification besides their degree qualification” and the second question is “why these students choose one particular accounting professional body besides others professional bodies”. The results for the first question mostly the respondents’ report that the requirement of additional accounting professional qualifications is for employment advantage. For the second question, the respondents’ preference is for Association of Chartered Certified Accountants (ACCA) qualification due to its brand image, global recognition and better career opportunity. These results collected from undergraduates learning perception point of view indicates that the additional international professional accounting qualification becomes a necessity for some undergraduates for career opportunities and advancement. The accountancy degree from public institutions emphasizes on effective teaching and learning, practices students-centered learning and case base learning to groom the undergraduates with strong foundations in academic knowledge and generic skills as strategy to create work-ready graduates. The findings of this study is important for further development of public institutions to achieve academic excellence that close the gap between the degree qualification from public institutions and professional qualification from other professional bodies.

Keywords: accounting degree qualification, generic skills, professional qualification, undergraduates

1. Introduction

A degree qualification from higher education institutions is an honorary award for course completion to qualify undergraduates in the respective area of study. The course completion gives recognition to the graduates for attaining necessary knowledge and demonstration of generic skills in the area of study that plays an important role in their future career path. Harvey (2000) p.3 “primary role of higher education is increasingly to transform students by enhancing their knowledge, skills, attitudes and abilities while simultaneously empowering them as lifelong critical, reflective learners”. A degree is a passport to employment (Harvey, 2000). However, there should be a good match with education and employer expectation in order for graduate employability (Walter, 2004). This is reason the degree course particularly accounting takes a maximum of four years to complete with a well-designed curriculum to achieve the high learning standard in the undergraduates’ education process. The higher learning institutions curriculum is increasingly specialized in accordance with employer expectation to demonstrate effective learning outcomes to develop undergraduates’ knowledge and skills. Despite this, an accounting degree qualification isn’t sufficient enough to transform undergraduates to be work-ready graduates for a brighter career prospect in today’s challenging job market? Is it necessary to seek additional professional accounting qualification? It is a recent trend among the higher institutions particularly the public institutions accounting undergraduates with good CGPA in Malaysia seeking additional professional qualification such as Association of Chartered Certified Accountants (ACCA), Malaysian Institute of Certified Public Accountants and Chartered
Institute of Management Accountants (CIMA). More than a decade ago, these professional qualifications are mostly registered by working accounting staff or private college students without degree qualification. There is paradigm shift today where undergraduates in higher institutions learning seeking additional professional accounting qualifications. Why accounting undergraduates need to register for an additional accounting professional qualifications besides four years of learning experience to attain accounting knowledge and generic skills. This creates a platform for a significant finding to investigate from these 52 accounting undergraduates the reason for their perception. Thus, this study investigates “why the students are seeking additional accounting professional qualification besides their degree qualification” as the research question 1 and research question 2 is “why these students choose one particular accounting professional body besides others professional bodies” as more students enrolling with one particular professional body. The outcome of this study provides further input to continuous improvement to our teaching and learning in higher learning institutions. In this study the undergraduates and graduates are referring to accounting field undergraduates and graduates.

2. Literature Review

The Oxford Dictionary defined education as “the process of receiving or giving systematic instruction, especially at a school or university” and human capital as “the skills, knowledge, and experience possessed by an individual or population, viewed in terms of their value or cost to an organization or country”. Education and training plays important roles in human capital investments as education at high school or college increases personal income (Becker, 2009). The further progress in education determines the global outlook of a population (Wolfgang & Samir, 2011). Higher education is the base for the development of innovative human resources as education provides knowledge, abilities and skills for human capital benefits and competitive advantage (Tanzharikova, 2012). An effective education is important for human capital development, health, economy development and democracy (Wolfgang & Samir, 2011). The higher education institutions are recognized by government and donors for it contributions in social and economic development as able to nurture creation, processing and dissemination of knowledge (Ajiboye & Tella, 2007). The graduates with degree from higher institutions have positive effect to quality of life in an area (Winters, 2011). The university education accommodates undergraduates with qualifications, skills and experiences in accordance with the employment requirement, thus, the essential outcome of higher education is the graduates destination (Coates, 2005). The teaching and learning is the core services for universities and closely link to high undergraduate satisfaction (Douglas, Douglas, & Barnes, 2006). Further, to meet the world of work requirement, higher institutions include practicum in the curriculum as valuable part of students/ undergraduates learning experience in their academic programs (Ryan, Toohey, & Hughes, 1996). Practicum has positive effect to undergraduates in a way that they are more ready for a job and better chance for employment (Gault, Leach, & Duey, 2010). Based on intern supervisors expert committee the ten preparation skills for employment are “(1) reliability, (2) consistency of performance, (3) eagerness to learn new skills, (4) timeliness, (5) effectively prioritizing tasks, (6) demonstrating initiative/self-motivation, (7) exhibiting ethical behavior, (8) accepting criticism constructively, (9) commitment to quality work, (10) exhibiting professional behavior and demeanor (Gault, Leach, & Duey, 2010). Basically for graduates to be competitive at job market is important to possess academic knowledge and employability skills (Fallow & Steven, 2000). This is the reason; the higher education institutions promptly review annual graduates’ employability rate and its curriculum to keep abreast with the job market competitiveness and for the university’s sustainable development.

The university education for accounting degree is designed for undergraduates to pursue their career path in accounting profession. The public universities or public institutions of higher education accounting degree programs are designed in accordance with the accountancy professional body in Malaysia, Malaysian Institute of Accountants (MIA). Tunku Puteri Intan Safinaz School of Accountancy Universiti Utara Malaysia (TISSA-UUM) the four year accounting degree programme has a well-structured curriculum model to develop undergraduates’ academic knowledge and generic skills through students centered learning, case teaching, internship, overseas students mobility and
framework based teaching for financial accounting subjects. Further, outcome based education (OBE) is practiced to align assessment, teaching and learning with learning outcome for achievements of undergraduates’ learning goal. We do have a good track of graduate employability rate and curriculums are regularly reviewed for the betterment of our undergraduates. For international academic reputation TISSA-UUM is in process of applying international accreditation to meet the international education standard and global recognition. Business has gone beyond the national boundaries and for accounting remains to be language of business, is important for business and accounting graduates to move at the same pace (Afolabi, 2014). The accounting curriculum urges to include generic skills, knowledge and professional attributes that contribute significantly to the development of accounting graduates exceptional profession (Che Ku Kassim, 2014). Hence, for graduates’ success, most universities accounting school are working hard to design an effective curriculum for quality accounting education to meet the employers other stakeholders’ requirement (Tanaka & Sithole, 2015). In Malaysia, after 4 years degree completion at public universities and three years approved working experience the accounting graduate is admitted as Chartered Accountant the membership of the Malaysian Institute of Accountants (MIA). Under the Part II, First Schedule of Accountants Act, 1967 in Malaysia there eleven other accountancy professional bodies such as, MICPA, ACCA, CIMA and Certified Public Accountants (CPA Australia). For example to become ACCA member students “need to complete: exams - a minimum of five of 14 exams, record 36 months’ experience in a relevant role, ethics - the Professional Ethics module. Once the graduate become a member of any of the eleven professional bodies specified in Part II of the First Schedule is admitted as Chartered Accountant the membership of the MIA. This indicates that public universities students upon completing the degree programme with 3 years working experience is able to apply for MIA membership. Then, why do public universities undergraduates are seeking additional professional qualification, their perception need to be investigated as it will be a help guide for further advancement of our public institutions.

3. Research Method

3.1. Purpose
This is an exploratory study that examined the reason accounting undergraduates in third year with CGPA 3.0 seeking additional professional qualification in accountancy besides their accounting degree qualification.

3.2. Survey
This survey is conducted for single institution, Tunku Puteri Intan Safinaz School of Accountancy University Utara Malaysia (TISSA-UUM) similar to Hoskins, Newstead, and Dennis (1997) study where the authors used University of Plymouth (one institution) to determine degree performance with undergraduates’ characteristics. This study has surveyed 52 third year undergraduates from Bachelor of Accounting with Honours programme with CGPA above 3.0 who have registered with ACCA in year 2016. The survey consists of two open ended questions to meet the purpose of this study; the first survey question is “why the students are seeking additional accounting professional qualification besides their degree qualification”. TISSA-UUM has number of collaborations with professional bodies namely ACCA, CIMA and MICPA to allow our undergraduates to register with these professional bodies and to sit for their professional papers examination. Among these professional bodies, more undergraduates are enrolling with ACCA. Hence, the second survey question is “why do you choose one particular accounting professional body besides others professional bodies”.

4. Results Analysis
Similar to Mohd Radzuan and Kaur (2011) study, the results of this study are manually analyzed. The respondents’ (undergraduates) details are presented in Table 1. The majority respondents are female Malays and mostly from Peninsular Malaysia.
### TABLE 1: Undergraduates Details

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>8</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>44</td>
<td>85%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Malay</td>
<td>37</td>
<td>71%</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td>8</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>4</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Peninsular</td>
<td>49</td>
<td>94%</td>
</tr>
<tr>
<td></td>
<td>Sabah &amp; Sarawak</td>
<td>3</td>
<td>6%</td>
</tr>
</tbody>
</table>

Table 2 reports on the 52 undergraduates’ motivation for their education success. In terms of motivation, mostly undergraduates are self-motivated for a successful education, followed by parents, family and friends. It is encouraging to observe that lecturers are fairly playing their role in motivating undergraduates’ in education. This reflects that educators’ role are played effectively to support undergraduates’ development.

### TABLE 2: Undergraduates Education Motivation

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parents</td>
<td>45</td>
<td>87%</td>
</tr>
<tr>
<td>Family</td>
<td>45</td>
<td>87%</td>
</tr>
<tr>
<td>Friends</td>
<td>41</td>
<td>79%</td>
</tr>
<tr>
<td>Yourself</td>
<td>48</td>
<td>92%</td>
</tr>
<tr>
<td>Teacher</td>
<td>27</td>
<td>52%</td>
</tr>
<tr>
<td>Lecturer</td>
<td>44</td>
<td>85%</td>
</tr>
<tr>
<td>Others</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Figure 1 presents the results to determine on “why the students are seeking additional accounting professional qualification besides their degree qualification”. The survey answers from the respondent been summarized into three categories namely employment advantage, knowledge enhancement (e.g. critical thinking skills, problem solving skills, more competence) and personal growth (additional qualification) and competitive advantage (e.g different from others) for career development. In it is interesting to note that undergraduate’s perception in seeking additional professional qualification mostly for employment advantage at 58%. This shows that undergraduates have perception that the additional professional qualification will put them in employer preference list for graduate employability. The second reason is the knowledge enhancement where undergraduate perceived that the additional professional qualification is able to build more confidence and competence as the professional papers examination enhance the accounting knowledge, problem solving and critical thinking skills. The third reason is for personal growth and competitive edge for career development, to be different from other undergraduates by having additional professional qualification, added advantage for their career advancement in future. There are several reasons given by the respondents for second research question on “why these students choose one particular accounting body besides others professional bodies”. The common reason given by most respondents is due to its brand image, global recognition and better career opportunity.
5. Discussion

The collection of evidence reveals on the undergraduates’ perception in seeking additional professional qualification particularly the one common professional body. It’s inevitable that accounting degree or professional courses enhance the undergraduates’ academic knowledge and generic skills to be an expert in a particular field and improved career prospect. Based on Industrial Talk by a Recruitment Officer Miss Teoh Jun Rui, the event organized by School of Computing, College of Arts And Sciences, Universiti Utara Malaysia on 23 November 2016. The recruitment officer had highlighted 10 relevant skills for undergraduates to get into job employment namely “1) leadership, 2) teamwork, 3) interpersonal skill, 4) critical thinking, 5) passion, 6) organizational skills, 7) emotional intelligence, 8) academic results, 9) working experience and 10) cultural fit”. These are the important skills that every undergraduates need to attain besides the academy excellence for brighter career prospect. According to Agus, Awang, Yussof, and Mohamed Makhbu (2011) opine that undergraduates do possess ICT skills, teamwork skills and ethical values. However, undergraduates need to enhance “decision making, problem solving, communication, interpersonal, critical and work planning skills” (Agus, Awang, Yussof, & Mohamed Makhbu, 2011). The action research study by Chandren and Yaacob (2016) showed a remarkable improvement in accounting students oral presentation skill. Our undergraduates need to be aware that in a work setting consists of group of people according to the organization hierarchy. An academic knowledge itself is insufficient; it also requires the transferable skills in order to work with group of people. Thus, it is important for fresh graduate to be in institutions to develop their academic and generic skills. Practically, institutions are the pre-employment training ground for the undergraduates in any field of studies. Further, academics role in ensuring undergraduates are well-versed with the “employability skills define as job readiness skills” as employers are looking for multi-skilled graduates (Shafie & Nayan, 2010). With serious involvement of undergraduates by working in group or on individual basis to accomplish various types combined formative and summative assessments including curriculum activities involvement and internship, have possibilities to enhance their academic knowledge and generic skills. Basically, group based assessment projects will assist the undergraduates to develop some of the 10 recommenced skills by the practioner above namely leadership, teamwork, interpersonal skill, critical thinking, passion, organizational skills, emotional intelligence, working experience and cultural fit. Thus, the commitment and ownership shown by the undergraduates will build up their confidence to be a work ready graduate with excellence in academic and possession of generic skills. Indeed, these undergraduates soon to be graduates will have higher chances to be in the employer’s preference list for graduate employability. This positive outlook of accounting undergraduates will create the employment advantage, knowledge enhancement, personal growth and competitive edge for career development. In fact, these undergraduates are the brand image and recognition of public institutions or any institutions.

![Reason for Seeking Professional Qualification](image_url)
6. Conclusion

The undergraduates’ success is the pillar of the public institutions. To produce a quality graduates, the public institutions need to be at the same pace with business changes and economic development. On the other end, some accounting undergraduates are seeking additional professional qualification beside their degree qualification. The survey results emerging from this study on undergraduates perception is a positive side to public institutions particularly the accountancy schools to move forward in revisiting the course contents, developing new approaches in teaching and learning for example framework based teaching for financial accounting subjects and assessment measurements for example Integrated Cumulative Grade Point Average (CGPA) system. The academic staff prominent role in the creation of graduates with generic skills and academic knowledge gives a good impression to potential employers and to the community. Indeed, the accountancy schools in public institutions are prepared to meet the continuous challenges in developing multi-talented/ skilled graduates that demonstrates excellence in academic knowledge and generic skills. The outstanding performance of our accounting graduates creates a brand image for accountancy schools in public institutions. Further, public institutions possibly earn an international recognition which helps to close the gap between accountancy degree from public institutions and professional qualifications. To expand this work further, this study suggests that future research should examine the employers’ perception on the necessity of accounting undergraduates acquiring additional professional qualifications.

7. Acknowledgements

The authors of this study are thankful to TISSA-UUM for their sponsorship for this conference.

8. References


Using Gamification to Increase Students’ Motivation: Our Experience in Teaching Research Methodology Class

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Abstract: As academicians, teaching is one of the core businesses other than research and publication. Improving one’s teaching practice entails a continuous and conscious effort on conducting research in teaching. This is in line with the spirit of Scholarship of Teaching and Learning (SOTL) which emphasizes on the active, conscious and continuous act of research in teaching by academic staff with specific aims to share it with other fellow academic staff later on through scholarly writing or publication. This paper is about our experience using gamification in our research methodology class which is perceived as a theories-laden class. Research methodology involves a systematic outline of decisions in exploring an issue of a research which entails a researcher to be aware of researchable issues and the processes involve to investigate those issues. Teaching research methodology course demands and challenges us as instructors to enable the students to understand various concepts related to research methodology and also to apply what they understand into research actions ethically. However, our post graduate students who are majority work as teachers find it difficult to stay motivated to read research methodology textbooks and stay focused in class during lectures and discussions. To engage students to become more alert and motivated in class, we use gamification to enhance students’ engagement and motivation until the end of class especially when there are discussions based on their reading of specific topics. The use of Kahoot! and Quizziz at the end of classes not only helps the students to focus on the discussion but also it serves as formative assessment for the students to assess the progress of their own learning. The features in online quizzes such as Kahoot! and Quizziz, for example, are easy to use and unlike pencil-and-paper test, it has game mechanics that are appealing to the students. To assess students’ perception about gamification, we asked them to provide feedbacks on our classroom activities using one-minute paper notes. It was found that students enjoy the activities using gamification and the activities also sparks their interest to improve on their teaching practice as teachers.

Keywords: research methodology, gamification, classroom activity, teaching practice

1. Our Experiences Teaching Research Methodology Course

Teaching a post graduate course on research methodology is not easy. Armed with a PhD within less than a year, I (the first author) was entrusted to teach a research methodology course in 2013 for the first time. Since it is a course involving pair-teaching approach, I am paired with another senior (the second author). Both of us have different background of research methodology based on the research design that we used during our PhD. My colleague’s specialization in instrument testing necessitates her to use quantitative research methodology, whereas I used mixed methods design as my research methodology. Having instructors with different research experiences and skills might give greater benefits for the students who have not started their post graduate research. That is what we always thought. But even though we provide class notes such as PowerPoint slides, journal articles and such and conduct our class using student-centered learning approaches, yet in every semester there would be students who would get low marks and few get failing grades. As the saying goes, some might pass and some might fail, but the thought that students get low marks or failing grades never make our hearts at ease.
In addition, some colleagues who are supervising students for their post graduate research shared their concern with us about some students who seem do not able to grasp and understand basic concepts in research methodology such as the differences between quantitative and qualitative research designs even though students have taken a research methodology course. As supervisors, it makes them wonder what students learn in class which imply what we teach and discuss in class. To assure ourselves and stakeholders that we do our best in teaching, we always discuss and reflect what we have done in class and what could have gone wrong in students’ learning with the intention of improving our teaching practice.

We are aware that to teach a theories-laden course such as research methodology course is a challenge in itself because students come from various background, specializations and expectations. For instance, some students have decided to conduct their research using specific research designs regardless the research issues that they want to investigate. Some might not even have thought about the issue that they want to explore yet they have decided to use certain research design for their study. To change this pre-conceived idea that students have adds up additional task that we have to deal with. When asked further why they decide to use specific research design even though they have not thought about the issues that they want to study, some of their responses are as follows:

“I think quantitative research is easier than qualitative research because we do not have to transcribe interview or observation recording”

“Quantitative research is straight-forward in which we do not have to make interpretation like qualitative research”

“I found a survey questionnaire that I want to use as my research instrument in a senior’s thesis. So, I do not have to figure out how to construct my own research instrument”

In addition, other than dealing with students’ learning, as lecturers we are also have to uphold university mission, vision and policy. In 2013 our university introduces and promotes the use of New Academia Learning Innovation (NALI) model to be incorporated in teaching and learning practice. New Academia Learning Innovation model (Zaini et. al., 2013) consists of a framework which combines student-centered and blended learning philosophy as well as various learning approaches or modes to inculcate students to possess global, entrepreneurial and innovative mind-set. In incorporating NALI in our teaching practice, we have to reorganize our teaching strategies and give more emphasis on student-centered learning approach. In this case, we cannot rely on giving lectures like before. But, some students perceive this negatively because they can no longer depend on getting information through lectures. For instance, at the end of one semester in which I (the first author) started to use cooperative learning in my class, I received a comment by a student who stated “The lecturer did not teach but rather do lots of class activities” In this sense, the student equated cooperative learning activities such as Think-Pair-Share and Jigsaw as not a part of teaching and learning process and he/she still much prefers traditional learning method which is lecturing as a main method of teaching.

The notion that learning should remain the main responsibility of teacher/instructor refers to traditional view of learning in which teacher/instructor is considered as “knowledge giver” (Novak, 1998). However, in line with the 21st century learning, student-centered learning emphasizes empowering students in their learning in which students are in control of their own learning and teachers/instructors serve as facilitators or mentors that assist students by giving guidance and support in students’ learning.
Unfortunately, some students are struggling to accept this notion even though majority of our postgraduate students work in education field as teachers, college instructors or tutors.

We believe that it might take a while for students to get used to the new learning approach i.e. student-centered learning and to assist them to stay motivated in their learning we know that we need to do something in our teaching when we conduct class activities. We explored several ways to keep students motivated in learning such as through reinforcement by using rewards and punishments. But, giving punishments might make students feel uncomfortable in our class and thus, might decrease their motivation in learning if it is not use appropriately. Our exploration to find more information about keeping students motivated in class is basically through reading and attending seminars or workshops from time to time. In early October 2016, I (the first author) came across the use of gamification to enhance students’ motivation in class in one of the workshops organized by the Centre of Teaching and Learning (CTL) of our university. After we discuss about the possibility of implementing gamification in our class, I (the first author) decided to implement it during my turn of teaching a research methodology class which started from end of October until end of December 2016 (since it is a pair-teaching course, my colleague taught the first seven week and I taught another seven weeks which began after mid semester break).

2. What the Literature Says about Gamification

In line with the 21st century teaching and learning practice as ascribed by the Ministry of Education Malaysia, the use of technology in class has become a norm. With various methods and digital tools that can be used to engage and gamify classroom activities, gamification which involves game mechanics is incorporated in classroom teaching to engage students in learning activities and transform the way instructors such as lecturers to facilitate students’ learning. The term gamification is coined by Nick Pelling in 2002 (Marczewski, 2011) and it is rapidly gained popularity in recent year. As defined by Deterding et. al. (2011), gamification is the use of design elements characteristic for games in non-game contexts. In this sense, the game mechanics elements such as fun, interactive, educational, motivating, interesting and challenging are incorporated in learning activities through the use of technology.

Even though the ideas of injecting fun and game in learning process are not entirely new, yet with the advancement of technology, it leads to changes in learning and teaching practices such as the use of blended learning and gamification. Blended learning integrates traditional learning approaches with web-based online approaches such as elearning (Oliver & Trigwell, 2005). The concept of gamification is different from educational approach using games in learning such as game-based learning. In game-based learning, teachers use games as instructional approaches which balance between subject content and gaming in relation to stimulating application of subject related concepts in the real world through virtual realm (Cózar-Gutiérrez & Sáez-López, 2016). Unlike games, gamification has the elements of game thinking and game design in which it helps to improve students’ engagement and motivation in learning (Dicheva et. al., 2015).

In educational setting, gamification is used by educational practitioners such as teachers to make learning process engaging and enjoyable. The use of gamification in learning process is welcome by educators in their learning because game mechanics enable students to become more engaged in learning processes which help to enhance problem-solving skills, communication and team working (Dicheva et. al., 2015). Even though gamification is gaining its popularity in recent years, in terms of the users of
Gamification in education settings, it was found that computer science/IT educators are the early users of gamification (Dicheva et al., 2015).

The implementation of gamification in teaching can be materialized with the use of digital tools such as online quizzes like Quizziz and Kahoot! to replace paper-and-pencil assessment, for example. To ensure the success of implementation of gamification, Huang and Soman (2013) proposed five steps of gamification process: understanding the target audiences and the context, defining learning objectives, structuring the experience, identifying resources and applying gamification elements. This proposition later serves as a conceptual guideline in our study.

3. Implementation of Gamification in Our Research Methodology Class

At first, I (the first author) was unsure about how to use gamification in our class because there are various digital tools available can be used for various reasons such as assessments, note taking, collaboration, saving data, searching information, research and so on. We do not want the students to feel overwhelmed with the excessive use of internet in class since the wifi connection is unpredictable. On top of that, since the class was conducted in the afternoon, we believe that the students need to move around and do not sit on their seats for the rest of the class to avoid boredom and sleepiness. In addition, to assess students’ learning, we need to conduct formative assessments regularly. Normally, to assess students’ understanding about the topic discussed in a particular day, we would ask them questions before the class ends. Unfortunately, we found that only certain students would attempt to answer the questions that we posed whereas the rest of students would keep quiet and avoid from answering. In this case, we do not know for certain about the understanding of those who keep quiet in class. We tried to give one-minute paper questions in which we asked which parts of the discussion are difficult to be understood in which the students have to write their response anonymously without stating their names. In this case, we hope to be informed about the concepts or parts of discussion which some students might struggle with. We would explain or discuss again those parts in the next class. But some students perceived it as a way to punish them because we discussed concepts or parts of discussion which they might struggle with again in different session. Some perceive as a waste of time to recap previously discussed topic twice. At this point, we realize that our attempt to help the students in their learning might backfire because we are not empowering them to be independent adult learners by spoon feeding them with information.

In this case, we decided to use gamification in which we give the students an online quiz at the end of a discussion because we want the students to assess their understanding consistently and take charge of their learning. Rather than giving them questions orally which only some would answer or ask them to write one-minute papers, we gave them online quizzes in which all of the students can answer at once either as individually or pair and their scores would give the students and us information about the topic discussed on that particular session. In this case, since it was non-graded activities, the students did not feel pressure about the grading rather use the information from the online quiz scores to improve their learning.

3.1. What was done

In our teaching practice, we adopt Huang and Soman’s five-steps process of gamification (Huang & Soman, 2013) to implement online quizzes as formative assessment as illustrated in Figure 1. First, to understand our students better we gave a short survey which contains four open-ended questions. The survey was given twice in a semester: in the middle of semester and at the end of semester. The questions
that we asked relating to what students feel about the way the class is conducted and aspects that make them feel stressed during class which might relate to the contents or it might relate to our style of teaching the course. Since we start to implement NALI in our teaching practice, lectures are no longer considered as the main method for content delivery. We want to investigate how do students perceive the changes and what can be improved to enhance their learning. In addition, the survey also contains questions relating to students’ understanding about the topics that have been discussed so far. The questions are as follows:

- What are the things that you like about the way the class is conducted so far?
- What are the things that make you feel stressed during class discussion/activity?
- List three points/aspects/concepts that you do not understand so far?
- List three points/aspects/concepts that you understand most so far?

![Gamification Process](image)

Fig. 1: Huang and Soman’s five-steps gamification process (2013)

Second, since the learning objectives are defined at the beginning of the semester and we cannot change it in the middle of the semester we revisit again the learning objectives through adjusting the classroom activities including formative assessments. Third, to structure the students’ learning experience using gamification, we decided to use online quizzes rather than paper-and-pencil tests for formative assessment. In any situation involving evaluation, students might experience test anxiety but to help students to improve their learning especially content knowledge, continuous assessment is necessary.

However, we want to break away from normal practice which use paper-and-pencil format to assess our students. Therefore, we started to explore several available online quizzes. In this case, we identify resources available that can assist us in applying gamification in our teaching. We found various online quizzes such as BuzzFeed, ClassMarker, Quizziz, Kahoot! and QuizBean. However, I (the first author) was introduced to Quizziz and Kahoot! in a workshop on gamification, and thus, we decided to use both online quizzes for our class. The features in online quizzes such as Quizziz and Kahoot! have the elements of game mechanics which are engaging, entertaining, informative and easy to be used. In
addition, for Quizziz for instance has a feature which helps instructors to document students’ performance based on their individual scores which can be downloaded in an excel file format. In this regards, formal assessment such as graded test could also be conducted by using online quizzes.

After identifying the resources related to online quizzes, I (the first author) created questions on Quizziz and Kahoot! for several topics. For each topic, I constructed 10 questions. In our class, I gave the students an online quiz using Quizziz at the end of a class on Week 10 for the first time. This is a new experience for them who might be so used to paper-and-pencil assessment format. In addition, since I did not inform them in advanced about the quiz, they were afraid that it would be graded quiz and thus, the students seemed to be hesitant because they have to log in to a website to take the quiz. However for this first quiz, due to an unforeseen problem with the wifi connection, the students had difficulty to log in to the website using their smart phones. Some had to use their own data plan. Therefore, I instructed the students to form a pair which consisted of two students per pair and each pair has to attempt the quiz together. In this case, with a class of 18 students, there were nine pairs of students. The students were given 10 minutes to answer 10 questions. On the second time I conducted the online quiz using Kahoot!, the students were no longer feel as anxious as the first time when they took the quiz because they know what to expect and since it is considered as formative assessment, there was no grading involved. To keep the students motivated with this activity, I rewarded those who got the highest scores with a candy after each quiz. Within the period of seven weeks, I managed to conduct the online quizzes using Quizziz only twice because of time constraint in the other five weeks in which I conducted cooperative learning activities and thus, did not have time to conduct online quiz at the end of a class.

### 3.2. What was collected and how it was analyzed

For seven weeks, I (the first author) collected students’ responses based on a survey which contains four open-ended questions. The survey was given twice on Week 10 (after the second online quiz) and Week 15 (last class). In addition, the scores from online quizzes which could be downloaded from Quizziz website in Excel file were also regarded as data in which it is used to assess students’ understanding of weekly topics. The students gave their feedback on the overall classroom discussion and activities on a survey. In this case, the students were instructed not to write their names or matric number on the survey and thus, they gave their feedback anonymously which protect their real identity.

I kept a daily journal to note down the progress of each session, challenges and reflections on planning and actions. The aim of this journal was to identify and track down the course of actions that I have made and could be improved in the future from the eyes of an instructor. In addition, one of the students kept in touch with me (the first author) after final examination through WhatsApp. I was able to ask this student further about why she likes online quizzes which I conducted in class. Even though, the information gathered was through WhatsApp messages, I regarded it as additional data which I obtained serendipitously.

Keeping in mind the nature of action research in which this exploration was based on, I (the first author) analyzed the data through identifying themes related to each questions posed and triangulated the data from different sources i.e. students’ responses (including WhatsApp message and online quizzes scores) and my personal reflective notes. According to McAtter (2013), analysing action research data involves making sense of the process involved in improving teaching practice in which teachers cum researchers identify ways to demonstrate academic integrity through detailed description of action research process. As suggested by Oance and Furlong (2007), there are four categories to serve as quality
indicator of action research: trustworthiness, contribution to knowledge, transparency and explicitness in design and reporting and paradigmatic consideration.

4. Our Findings

How does gamification help the students to feel motivated in class? This question was posed to explore the use of digital tools like online quizzes which have games mechanics to enhance students’ motivation. It was found from the survey that students enjoy the online quizzes. One of the students responded “Quizzes! I love the fact that the lecturer used some sort of assessment to assess students’ understanding of what is taught. It also adds to the competitiveness edge to the class which is nice to have.” Another student points out he/she likes the online quiz because “It gives me a clear picture of the lesson of the day”. In this case, this student is able to reflect on what has been discussed in class regarding specific topic.

Also, it seems the students enjoy the gaming activity because they were reassured about the purpose of online quiz given to them and thus, students did not feel pressured to participate in taking the online quiz. One even quipped “Playing quiz in the class” to denote taking the quiz is equated like playing a game. In addition, it was found that using gamification in this case adds up to the variety of class activities. One student commented that what he/she liked about the way the class is conducted is because “Different activities during class such as online quiz, coding activity, take home activities”. Another student commented that he/she starts to use online quizzes too in her secondary school class. She said “After you gave us the online quiz, I want to explore using it too in my class. I am teaching English in secondary school. So, students like it when I use the online quiz because they can use the computer and internet which is different from the way I normally teach”. In this regards, this student imitates the class activity that I (the first author) conducted in my class in her own class.

In general, other than the gamification, students like the way the class was conducted which involved many hand-on activities which relevant to the lesson of the day. One of the students stated that “Hands-activities in relation to the task, again for students to gauge whether or not they understand what is taught”. In this case, this student emphasizes the importance of hands-on activities which relevant to the topic discussed because it assists students to self-evaluate their learning. An example of hands-on activity that I (the first author) conducted was coding qualitative data. I gave students a short interview transcript (two pages) and brief instruction to conduct coding and inter-rater reliability test using Cohen Kappa analysis. Students perceived such activity as informative and useful. One student explained “Explanation given with real hands-on practice like coding activity from an interview data open my mind about qualitative research and to be more prepared about the challenges if using qualitative research as my own research approach”.

5. Conclusion

When I first discussed with my colleague about the possibility of using gamification in our class even though it was in the middle of a semester, it means that I have to amend the course constructive alignment which we have prepared at the beginning of the semester. I was feeling apprehensive and unsure about using a new approach in our class because I did not want the students to be uncomfortable in our class.
especially with the introduction on new approach like online quiz. However, we decided to try it out and see how students perceive gamification on enhancing their learning experience and motivation.

Looking back at students’ responses on the way the class was conducted gave me (the first author) some reassurance that students appreciate the class activities especially involving hands-on activities relevant to topic discussed. Even though some students perceived that research methodology class is challenging because there are too many conceptual information needs to be digested, yet giving comprehensive notes through lectures and reading materials that needed to be read as additional sources other than textbooks as well as conducting engaging class activities could make the students appreciate the learning process more, regardless of the challenges and hardship.

It is not easy to promote self-regulated learning among students but using gamification like digital tools such as online quiz could prompt students to become more aware and focus on regulating their learning experience. Looking at how students appreciate their learning and become more engage in class activities give us immense satisfaction even though we need to spend considerable duration of time to prepare our class. As teachers, nothing more that we could ask from students other than to become more matured and skilful research students who are able to take charge of their own learning.

6. References


The Influence of Problem Based Learning on Students’ Generic Skill

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\(^2\)Faculty of Education, University of Malaya
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\(^4\)Michael Otedola College of Primary Education, Epe, Lagos State, Nigeria

Abstract: Many countries have embraced formal education to confront illiteracy and unemployment within their society. This is because one major advantage of formal education is the transfer of generic skills which is the cognitive strategies and domain independent knowledge. Generic skills are vital today because life and workplaces are in flux and are getting more complex which requires initiative, emotional mastery, flexibility, creativity, and the ability to take on many different tasks (involve learning by doing and experience). However, many students are found to be deficient of this skill which is making them unfit for the labour market and unattractive to employers. In addition, very few schools teach generic skills which are making students unable to develop them and be employable attractive to employers. Therefore, this study investigates the impact of generic skills using problem-based learning (PBL). This paper represents the first part of the study, which is to investigate the influence of students’ PBL on their generic skills This paper makes used of action research method, while quantitative research approach using both survey and documentation is employed for the study data collection. The study finding show that there is a significant influence on problem-based learning (PBL) and generic skills (GS). Similar significant influence is found on critical thinking (CT) and generic skills (GS). It was further pointed out that there is no disparity on students’ gender and academic background (science and non-science) with their generic skills. This implies that problem-based learning (PBL) and critical thinking (CT) enhances students’ generic skills.

Keywords: Problem-based learning, critical thinking, teaching strategy

1. Introduction

Skill is the enablement to execute a given task with pre-determined outcomes measures with energy dissipated and time taken or both. Skills are grouped into two namely generic skills (domain-general) and technical skills (domain specific). Generic skills are basic knowledge that is expected to be acquired by educated people and these include self-motivation, time management, creativity, emotional mastery, flexibility, and teamwork. On the other hand, technical skills are useful enablement for certain jobs only which are not general. Although, technical skills are very vital to companies and organizations, however, many technical skills are being supported by advancement in technology. This is making many companies and organizations to usually seek for employees with good generic skills. However, many students are found to be deficient in generic skills which will make them unattractive to employers and unfit for the labor market. In addition, very few schools teach generic skills which are making students unable to develop them and be employable attractive to employers. The rationale for this is that the traditional method of teaching students is focused on teacher-centred teaching, where the teacher talk about given theories and students are supposed to comprehend based on given classroom examples. Many studies nowadays are questioning the success of the teacher-centred learning method (Pobiner, 2016; Amolins et al, 2015; Knight, 2014; Kurki-Suonio & Hakola, 2007). These authors advocate for innovative educational methods that will increase students’ motivation and performance most especially in the area of impact of both generic and technical skills. Thus, this study examines PBL method into the learning and teaching of students in Michael Otedola College of Primary Education, Lagos State, Nigeria. The
PBL ensures active participation of students in the learning and teaching process in order to ensure a significant improvement of student understanding and performance (Eddy, Converse & Wenderoth, 2015; Hazzan, Lapidot & Ragonis, 2014; Kulick, Toussaint, Lang & Lopes, 2013; Kassens-Noor, 2012). Hence, this paper will investigate the first part of the study on the influence of problem-based learning (PBL) on students’ acquiring generic skills during learning from their school teachers.

2. Methodology

This study employed action research method as proposed by Avison et al (1999). This research methodology was utilized because it was found to be most suitable for implementation and evaluation of problem-based learning intervention (Choi, Lindquist & Song, 2014). The study made use of 117 primary education college students from two different academic semesters in 2014/2015 academic sessions as study respondents’. The selection of these students as study respondents’ is based on purposive sample method as inspired by Topp, Barker, and Degenhardt (2004).

The study respondents are a mixture of both science and non-science backgrounds whereas their poor performance in generic skills is the major criteria used for their selection. The selection criteria are based on students’ previous assessments records related to their generic skills which include self-motivation, time management, creativity, emotional mastery, flexibility, and teamwork. The problem-based learning intervention was implemented during students’ learning sessions. Data were collected after the learning sessions based on quantitative research approach.

Data collection for quantitative research approach is done in two different ways, namely survey and documentation. The documentation makes use of students’ assessment records while the questionnaire makes use of a survey. The survey contains items on students’ backgrounds, perception and reflection on their lecturer teaching strategy (problem-based learning), critical thinking abilities and generic skills as illustrated in Figure 1.

![Implemented Framework](image)

Fig. 1: Implemented Framework

Students’ generic skills are measured in term of their self-motivation, time management, creativity, emotional mastery, flexibility and teamwork which is based on Freudenberg, Brimble and Cameron (2011), Ballantine and McCourt Larres (2007) and Crebert et al (2004) studies. Critical thinking refers to students’ ability to intellectually and analytically process the teaching and learning instructions in order to form their beliefs and influence their actions. The items of students’ critical thinking skills are based on Stevens (2015), Ernst and Monroe (2004), Terenzini et al (1995). In addition, PBL is measured in terms of student experiences and perceptions on the intervention provided during teaching periods which is based on Ravankar et al (2016) and Ferreira and Trudel (2012). Therefore, the questionnaire is made up of students’ backgrounds, GS, CT and PBL which are used to collect data for the study. These data are analyzed using SPSS version 19.
3. Findings

The study data depicts that out of the 117 students, 73 are with non-science backgrounds while 44 are with science backgrounds as shown in Figure 2.

![Pie chart showing academic backgrounds](image)

Fig. 2: Study Respondents’ Academic Background

This implies that most of the study respondents are not science-based students. Nonscience-based students are those without previous knowledge of both science courses during their secondary school days and did not offer any science subjects such as physics and chemistry in their secondary school final examination. Similarly, the study data reflects that out of the 117 students, 93 are female while 24 are male as shown in Figure 3.

![Pie chart showing gender](image)

Fig. 3: Respondents’ Gender

This implies that most of the study respondents are majority females with 79 percent compared with their male respondents with 21 percent. Furthermore, correlation analysis was done in order to investigate the relationship significance between the three entities in this study. Results of the correlation analysis are summarized in Table 1.
The result of the correlation analysis shows that GS has a value of Pearson correlation of .841 with CT. This means that there is a strong positive relationship between students’ critical thinking and their generic skills which is found to be significant because of Sig (2-tailed) value of .000. A similar result is gotten between GS and PBL with .926 which denotes strong positive relationship. Further analysis was carried out in order to examine students’ data t-test analysis which is presented in Table 2.

**TABLE 1: Results of Correlation Analysis**

<table>
<thead>
<tr>
<th></th>
<th>Generic Skills (GS)</th>
<th>Critical Thinking (CT)</th>
<th>Problem-Based Learning (PBL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Skills (GS)</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>1</td>
<td>.841</td>
</tr>
<tr>
<td></td>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Critical Thinking (CT)</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.961</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Problem-Based Learning (PBL)</strong></td>
<td><strong>Pearson Correlation</strong></td>
<td>.926</td>
<td>.957</td>
</tr>
<tr>
<td></td>
<td><strong>Sig. (2-tailed)</strong></td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**  
**. Correlation is significant at the 0.05 level (2-tailed).**

Based on Table 2, the Levene test is not statistically significant in CT and PBL which reflects that the assumptions of equal variance are not violated. Likewise, the t-test of equality of means indicates that for both CT and PBL are not significant (p=.739 and .862 respectively). This means that there was no significant difference between CT and PBL with GS.

**TABLE 2: Results of T-Test Analysis**

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT</td>
<td>.064</td>
<td>.534</td>
</tr>
<tr>
<td></td>
<td>.010</td>
<td>113.260</td>
</tr>
<tr>
<td>PBL</td>
<td>2.535</td>
<td>.614</td>
</tr>
<tr>
<td></td>
<td>3.544</td>
<td>98.796</td>
</tr>
</tbody>
</table>
4. Discussion

The correlation analysis of this study has shown that there is unique significance in students’ critical thinking and problem-based learning with their generic skills. It shows that good performance in both critical thinking and problem-based learning influence their generic skills positively. This outcome can be attributed to the implemented intervention which is done by adopting action research during their teaching and learning sessions. This finding can be interpreted in two ways namely students’ academic background and their gender.

Firstly, the study respondent academic background as presented in Figure 2 shows that majority of the respondents are made up of non-science academic backgrounds (which is 62 percent of the total respondents). This study finding disagree with Craig, Gordon, Clark and Langendyk (2004) that students with non-science academic backgrounds usually cannot perform better in problem-based learning and critical thinking skills compare with science background students. Thus, this study argues that with suitable and efficient teaching and learning strategy, both science and non-science academic backgrounds can perform excellently in generic skills, problem-based learning, and critical thinking skills.

Secondly based on the study respondents’ gender as illustrated in Figure 3, it is seen that the study respondents are made up of female students with 79 percent. The finding of this study supports Geist and King (2008) argument that there is no gender disparity in the issue of generic skills. Thus, it is maintained in this study that although there are differences in learning styles between female and male students, however, there is no disparity between female and male students in their display of generic skills, critical thinking skills, and problem-based learning.

Furthermore, based on the t-test analysis there is no significant difference between students’ critical thinking and problem-based learning with generic skills. This implies that the implemented intervention greatly influences students’ generic skills which are evidenced in their generic performance measurements. This is the rationale for the non-significant difference between students’ generic skills, critical thinking skills, and problem-based learning.

5. CONCLUSION

This paper has investigated the influence of problem-based learning and critical thinking on students’ generic skills. The study made use of respondents with poor generic skills. The implementation of the PBL intervention shows that there is positive significance between problem-based learning and critical thinking with generic skills. The study further pointed out that with appropriate and suitable teaching and learning strategy there should not be any disparity in academic outcome between science and non-science background students in term of generic skills. Likewise, it is stated in this study that there is no gender disparity in the issue of generic skills. Both female and male are able to demonstrate critical thinking, problem-based skills, and generic skills if they are well tutored. In addition, this finding is further grounded that the problem-based learning approach intervention has a large influence on the generic skills of students. Hence, it is concluded that students’ generic skills can be enhanced with problem-based learning and critical thinking skills which in turn improve students’ performance in their workplaces.

6. References


Adapting Thinking Based Learning Approach and 6E Instructional Model in Implementing Green STEM Project

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Abstract: Meaningful learning environment should be emphasized by Science educator to generate creativity among the students. This paper discuss the importance of adapting Thinking Based Learning (TBL) approached and the 6E model in implementing green STEM project to develop students’ creativity. TBL provides step by step of skillful thinking procedures and guiding rules by which a type of thinking can be carried out with a high degree of efficiency and effectiveness. Since thinking does not happen in vacuum, TBL also provides the acquisition of information on what we are thinking about, and/where to find it. Thinking based learning which consists of; thinking skill, habits of mind and metacognition are infused harmonically with the 6E model of instruction which comprises of 6 phase; engage, explore, explain, engineer, enrich and evaluate during green STEM project based learning. An example of a lesson plan integrating of thinking based learning approach with 6E model of teaching in constructing a solar raft project is attached. Skillful thinking would be the fundamental to nurture students’ creativity through authentic green STEM project based learning approach.

Keywords: Thinking based learning approach, thinking skills, metacognition, habits of mind, The 6 E Instructional Model, green STEM project based learning

1. Introduction

Teachers are responsible in developing students’ 21st skills which can use in supporting their contemporary learning environment and need. Wherever their ambitions lead them, they will benefit from becoming creative problem solvers, analytical thinkers and effective communicators and collaborators (Wilson & Conyers, 2016). In preparation for their workforce, knowledge in science, technology, engineering and mathematics (STEM) is becoming increasingly important. Educators need contemporary approach to enhance rapid development in science and technology and to adequately addressing challenges such as climate change, over population, resource managements, agricultural production, health, biodiversity and declining energy and water source.

Although the idea of STEM education has been contemplated since the 1990s in the USA, not many teachers seemed to know how to operationalize STEM education for past several decades (Kelly & Knowles, 2016). Many teachers are unfamiliar with engineering and STEM approached, thus, this has led to great need for professional development for in-service teacher, as well as a focus on STEM integration in pre-service teachers’ methods and content courses. STEM approach need to be integrated with thinking based learning and instructional model to fostering students thinking capability in planning, implementing and evaluating any project. Some of the most vital and versatile skill, sets we can teach students to develop are the abilities to think about their learning and use their
particular cognitive strategies and adjust their performance of learning tasks.

Students ability to think and organizing their habit of mind has been continuing becoming a great concern by educator (Bransford, Goldman, & Vye, 1991; Sternberg, 1998). Term such as critical thinking, creative thinking and high order thinking have been discussed increasingly in the educational literature over the past few decades (Beyer, 1988; Costa, 1985; Costa & Kallick, 2009; Zohar & Dori, 2003)

This conceptual paper explain how the thinking based learning can be infused in content instruction together with the 6E instructional model in doing STEM project during co-curricular activity.

2. Thinking Based Learnings

According to Ennis (1989), there were three approaches have been suggested in instructing thinking skill: the process approach, the content approach and infusion approach. In the process approach, thinking skill is taught directly and separately from the regular curriculum to encourage students applying cognitive skills in other disciplines. On the other hand, content approach is based on perception that certain cognitive skills are specific to particular discipline. Teacher extensive and diversify knowledge requires here, so that the students can be instructed how to apply their cognitive skills in their areas and know when to make contextual links with other areas (Chamber, 1988). Whereas in the infusion approach, also known as thinking based learning, aims in combining the teaching of thinking skills with instructing the curriculum. In thinking skill it engage in complex thinking tasks; skills in generating ideas, skills in clarifying ideas and skills in assessing the reasonable of ideas.

Thinking based learning refer to a teaching method where instruction on skillful thinking is infused into instruction of science content. In skillful thinking, the proficient and strategic application of appropriate thinking skills and productive habits of mind and metacognitive are blend together to develop thoughtful products (e.g.; decisions, arguments, and other analytical, creative or critical products). Skillful thinking has three components; thinking skills, habits of mind, and metacognition.

According to social cognition theories such as Vygotsky’s social cognition (Vygotsky, 1978), cognitive apprenticeship (Collins, Brown, & Newman, 1989), situated learning (Lave & Wenger, 1991) and everyday cognition (Lave, 1988), social interaction in learning are very importance in giving positive impact on students learning efficacy and greater potential for cognitive engagement.

2.1. Thinking skill

Thinking Skills are mental processes we use to do things like: solve problems, make decisions, ask questions, construct plans, evaluate ideas, organise information and create objects. There are many frameworks of thinking including Bloom’s Taxonomy, DE Bono’s thinking tools and Lipman's modes (Moseley D et al., 2005). The types of thinking skills shown in Table 1.

<table>
<thead>
<tr>
<th>Table 1 Types of thinking skills</th>
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<tbody>
<tr>
<td>Thinking Skills</td>
</tr>
<tr>
<td>Overview</td>
</tr>
<tr>
<td>Skills demonstrated</td>
</tr>
</tbody>
</table>

ISBN: 978-983-42061-4-7
| Information Processing | Student obtains information from reading, listening or observing - and records and organises information by means of writing or visual representation. | Skills demonstrated  
- locate and collect relevant information  
- sort and classify  
- compare and contrast  
- analyse whole-part relationships |
|---|---|---|
| Reasoning | Student makes inferences and connections - and considers the actual and potential impact of using and applying particular information. | Skills demonstrated  
- give reasons for opinions and actions  
- draw inferences and make deductions  
- use precise language  
- explain thoughts  
- make informed decisions and judgements |
| Enquiring | Student asks questions, plans and pursues a course of action to discover new and relevant information and connections. | Skills demonstrated  
- ask relevant questions  
- pose and define problems  
- plan what to do and how to research  
- predict outcomes and anticipate consequences  
- test conclusions and improve ideas |
| Creating | Student applies imagination, extending ideas and making new connections - leading to products original to them. | Skills demonstrated  
- generate and extend ideas  
- test hypotheses  
- apply imagination  
- look for innovative outcomes |
| Evaluating | Student judges the truth, value and usefulness of information, actions and products, challenging both others and self. | Skills demonstrated  
- evaluate information  
- judge the value of things read, heard or done  
- develop criteria for judging value  
- have confidence in judgements |

Marzano, Hughes, Jones, Presseisen, and Rankin (1988) suggested that core dimension of thinking consists of eight types of thinking skills used to gain knowledge and apply in daily live. These eight types of thinking skills are focusing skills, informatics gathering skills, analysing skills, generating skills, integrating skills and evaluating skills, remembering skills and organizing skills.

Another viewpoint pointed out that thinking skill as a complex process that cannot be atomized into specific routines. From this, the concept of higher-order thinking that consists of some general characteristics as follows; non-algorithmic, complex, yields multiple solutions, requires the application of multiple criteria, self-regulation and often involves uncertainty was introduced to avoid precise definition of thinking (Resnick, 1987). Regarding to the concept of higher-order thinking the following examples pattern in inquiry-oriented science education was include such formulating a research question, planning experiments, controlling variables, drawing inferences, making and justifying arguments, identifying hidden assumptions and identifying reliable sources of information (Zohar & Dori, 2003).
2.2. Habits of mind (HoM)

Costa (2001) defines habit of mind as deposition towards behaving intelligently when confronted with problems or behavioural habits associated with effective learning. According to Costa and Kallick (2009), habits of mind is a lifelong journey, a journey of a growing capacity to be more skillful and strategic as we use the habits.

Habits of mind are not fixed traits but capable to be developed. Dweck (2006) viewed that learning performance can be improved through deliberate effort and practice, who contrasts the growth mind set of those who believe that their abilities can change, who work hard, try different strategies when they get stuck and see failure as an opportunity to grow, with the fixed mind set of learners who have come to believe that intelligence is fixed and that abilities cannot be developed. According to Costa and Kallick (2009), there are 16 habit of minds as described below as:

1. Persisting
   Have students identify characteristics of persistence shown by individuals in well-known events, or imagine what might have occurred if more or less persistence was shown in a given scenario.

2. Managing Impulsivity
   Model the use of patience in the classroom, including wait time during discussion, or using helpful sentence stems that reflect intentional choice (such as "After reviewing all of the possible solutions . . . ").

3. Listening to Others with Understanding and Empathy
   Identify the most common "listening set-asides" in conversation so that students can begin to recognize common "errors" that occur in everyday communication. These errors might include comparing, judging, placating or giving advice instead of really listening and understanding a message.

4. Thinking Flexibly
   Where students must consider a situation, letter, speech or poem from a perspective other than their own, or that of the original speakers.

5. Thinking About Our Thinking
   Ask students to map out their own thinking process. This can be done simply at first, e.g., diagramming the relationship between a want and a need, a gesture and a need to gesture. Then make it increasingly complex -- mapping out how characters from books or thinkers in history might have arrived at certain starting or stopping points in thought.

6. Striving for Accuracy and Precision
   Use "three before me," a strategy that insists on any important assignment being checked by at least three other people before being handed in.

7. Questioning and Posing Problems
   Create a "parking lot" area in the classroom -- stocked with post-it notes -- where students can post questions that may not fit into the pace or format of a given class. Then highlight the better questions periodically, or use them as jumping off points for discussion or even lesson planning.
8. Applying Past Knowledge to New Situations
Use question stems like "What do you remember about . . . ?", "When have you ever seen anything like this?" or "Tell me what you know about . . . " Whether you consider this activating schema, prior knowledge, or simply getting students more comfortable and in tune with what they already know, it can be a huge boost to the learning process.

9. Thinking and Communicating with Clarity and Precision
Remind students to avoid the vagueness and abstraction -- and imprecision -- of terms like always, never, all, everybody, teachers, celebrities, technology, they, we, should and must. Post these kinds of words or phrases where students can be reminded of them -- and know to avoid them. And hopefully know why they should avoid them.

10. Gathering Data Through All Senses
Playfully allow students to "cite" sources from sensory data in addition to traditional textual sources. Also consider including the compelling use of such data in a rubric for formal assessment.

11. Creating, Imagining and Innovating
Offer persistent sources of inspiring thought, design, art or multimedia through writing prompts, discussion points or simply as a daily class closure. This models not only creativity, but also expertise, and is readily available on YouTube, Pinterest and Instagram.

12. Responding with Wonderment and Awe
Don't just allow opportunities for student choice in topics, formats or learning pathways -- insist on it. Refuse to move the class forward until they are bringing their own passions into the learning experience.

13. Taking Responsible Risks
Create an environment where failure is analyzed, not punished.

14. Finding Humor
Point out humor where it is not immediately apparent, especially in stories and examples from your own life. This can help establish the "relativity" of "things," which supports more accurate analysis. Humor makes everything better.

15. Thinking Interdependently
Using digital and social media imposes at least a topical need for interdependence from the beginning. The more thinking is published and shared, the more opportunity there will be for cognitive interdependence, though even opportunities aren't guarantees that it will happen.

16. Learning Continuously
Intermittently revisit old ideas, writing and projects to identify areas for development, improvement or revision.

2.3 Metacognition

Metacognition is an essential component of a 21st century education that teaches students how to
learn, but often neglected. Metacognition involves thinking about one’s thinking or cognition, with the goal of enhancing learning (Wilson & Conyers, 2016). Learning can be envisioned as taking place across three phases and the table show how metacognitive can guide students through the phases as shown in Table 2.

Table 2: Guiding students’ behaviour using metacognitive

<table>
<thead>
<tr>
<th>Phase</th>
<th>How metacognitive can guide students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Input</strong></td>
<td>• Identify what they already know</td>
</tr>
<tr>
<td></td>
<td>• Set goals and monitor their progress</td>
</tr>
<tr>
<td><strong>Processing</strong></td>
<td>• Articulate what they learned</td>
</tr>
<tr>
<td></td>
<td>• Transfer learning from one context to another.</td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td>• Communicate their knowledge, skill and abilities to a specific audience such as a hiring committee.</td>
</tr>
<tr>
<td></td>
<td>• Identify and implement effective learning strategies.</td>
</tr>
</tbody>
</table>

3. The 6 E Model of Instruction

Many are familiar with the BSCS 5E Instructional Model, which is developed by Biological Sciences Curriculum Study (BSCS), the 5E model is a learning cycle based on constructivist view of learning (Rohrich & Morgan, 2007). In the 5E model, students was placed at the centre of learning experiences, encouraging them to explore, construct their own understanding of scientific concepts and relate those understandings to other concepts. Based on 5E instructional model, new modified model 6E was proposed to maximize the concepts of design and inquiry in an integrative way (Sanders, 2009) which provides a student-centred framework for instruction that leverages the T and E of STEM as it integrates content in a purposeful and informed way. There were six phase in the 6E learning by Design™ model; engage, explore, explain, elaborate and evaluate.

3.1. Engage

The purpose of the engage phase is to pique student interest and get them personally involved in the lesson, while pre-assessing prior understand. At this stage student will be placed into a group. Their group consists of four, each of them will be given their responsibility as general manager, engineer designer, graphic designer and accountant. The purpose of this is to encourage them to work collaboratively. During the engage stage of the instructional model, activities are created to stimulate thinking and access their prior knowledge. This phase also to make students becomes familiar with concepts besides that checking for their understanding. At this phase, teacher relate the concept to be taught with students’ experience. For examples during the rainy season, their place will face flooding problem, what happen during that season? What did they see on that season? How they go one place to another place? The teacher is trying to generate student creative thinking by
generating their ideas and solutions among them. Before going further, the concept of density will be discussed. Students will be introducing to floating and sinking concept first. They will be giving a grape and oranges. Which one they think will be floating? They should give a reason why they said it so. They have to find out why oranges with skin feel will sinking. The concept of buoyancy and density will be introduce in this part. By using simple graphic organizer in Table 1 they will record their ideas.

Table 3: Graphic organizer about floating object

<table>
<thead>
<tr>
<th>Materials</th>
<th>Floating/sinking</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grapes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oranges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oranges with skin feel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2. Explore

The purpose for the EXPLORE phase is to provide students with the opportunity to constructing their own understanding of the topic by directly involved with phenomena and materials. In this exploration phase, students will be given with a clump of clay, they put the clump of clay into the water, and make an observation. Then they build a clay boat from the same clump of clay, looking for floating and sinking. They will form their generalizations about major concepts. By using simple graphic organizer the students will record their observation and explanation in Table 4.

Table 4: Graphic organizer about clay boat

<table>
<thead>
<tr>
<th>Material</th>
<th>Sinking/ floating</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clamp of clay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boat from clamp of clay</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

With an energy crisis that the world faced now and the depleted of petroleum, teacher will try to help their students develop important thinking skills and mental habits that will make their students become a better critical and creative thinkers. The teachers will point out here: “I want you to imagine that you have been appointed by the government of Malaysia to be a member of a special committee. Our government is concerned with the availability of energy and our sea environment. So your committee has been asked to gather as much data you can to make a recommendation about what should be our energy source for the future and to protect our river environment from pollution.” The students will be asking to make strategy decision making by using question guided below.

At this phase teachers invites students to express their opinion. Here the teacher is approaching the students to use thinking skill in making decision about energy source. The teacher breaks the student into collaborative thinking groups with unit thinking task that will combine and contribute to
overall process, for their thinking devices various graphics will be use as reflection and recording and the teacher also guided them with oral guidance. So in making our river safe from pollution and petroleum depleted crisis the students suggest to use solar energy for their raft. Here the students will decide the material they need to use for construct their raft. Using a simple graphics organizer a standard T-bar diagram the students record their idea in Table 5.

Table 5: Graphic Organizer- Option and Factor to Consider

<table>
<thead>
<tr>
<th>OPTIONS</th>
<th>FACTORS TO CONSIDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cork</td>
<td></td>
</tr>
<tr>
<td>Popsicle stick</td>
<td></td>
</tr>
<tr>
<td>Polystyrene</td>
<td></td>
</tr>
</tbody>
</table>

Students will relate to their experience during flooding season. They try to make sense of it and link it to what they have already know, an active process occur. The ability of students to transfer knowledge from one context to another and use knowledge in different forum to diverse the situations is one of habits of mind.

Meanwhile the teachers acts as a facilitator, guiding the students’ focus. Besides that participates in team and class discussion can build a set of common experience that’s prompt sharing and communicating. During this phase also each group will be given popsicle stick. Students will construct the raft frame by drawing and get touch with the materials they are going to use it. In this phase also we insert with habits of mind; discussion skill. Students will discuss among them to clarifying needed, investigating contexts and verifying it before explains to their friends. Interactions among them help to understand the topic of their study. Skillful teacher questioning helps students see connections between the ideas relate to real-world examples (Brown, 1994; Eggen & Kauchack, 1999).

3.3. Explain

The purpose for the explain phase is to provide students with an opportunity to explain and refine what they have learned so far. In this phase also students will begins to communicate what they have learned. Communication will occurs between peers and facilitator. This communication bring to discussion. Discussing learning as a process that occurs in phases offers students a useful framework for applying a metacognitive approach to their project work (Wilson & Conyers, 2016). Discussions also encourage students to verbalize their own thinking and share it with others (Tiong, Netto-Shek, Cheong, & Agnes, 2004). This phase also will correct and redirects misconceptions that occurs. In this phase students will use their drawing design in applying concepts, principles and theories related to the system and explain to their friends. During explanation from their friends, they need to listen with respectfully for understanding and thinking collaboratively, this habits of mind can facilitate beneficial social interaction.

3.4. Engineer

The purpose of the engineer phase is to provide students with an opportunity to develop great depth of understanding about the problem topic by applying concepts, practices and attitudes. They
use concepts learned about the natural world and apply them to the man-made world. Students will use inquiry and integrate with the concepts of engineering to design their solution. In this project based learning, the students will construct the prototype of solar raft which green to our environment to solve the problem during flooding. Students will use creative solutions with design, systems, modelling, resources and human values as the basic of development. We insert thinking skill by stimulate students to think creatively to problem solving. They will apply technique from theory, generating ideas with others and seeing engineering as a team sport. Make them think like an engineer. They also will use critical thinking whereby the deep, intentional and structured thinking process that is aimed at analysing and conceptualising, information, experiences, observations and existing knowledge for the purpose of creating original and creative solutions for the challenges encountered (Al-Atabi, 2014).

3.5. Enrich

The purpose of the phase is to provide students with an opportunity to explore in more depth what they have learned and to transfer concepts to more complex problems. After understand design process students can apply to new situations. At this phase students can make alteration or improvement to their model. For solar raft prototype, students will see does the size and shape will influence the floating of the raft? They also will find out how to make their solar raft move faster. In this phase we apply metacognitive approach, where they analyse their raft and gather additional information for improvement.

3.6. Evaluate

The purpose of the phase is for both students and teachers to determine how much learning and understanding has taken places. Evaluate is ongoing diagnostic process that allows the teacher to determine if the learner has attained understanding of concepts and knowledge. Evaluation and assessment is not linear and should occur at all points (all phases) along the continuum of the instructional process. Some of the tools that’s assists in this diagnostic process are; rubrics, teacher observation, students’ interviews, portfolios, projects and problem based learning products (Bybee, 1997).

4. PROJECT BASED LEARNING

Project based learning (PBL) is an inquiry-based teaching approach where the learner is provided with a well define outcome but limited information about how to accomplish the task (Barroso et al., 2016). Student-centered approach with active learning strategy was used to engage students in problem solving that was substantially different from the traditional classroom and emphasizes the use of knowledge in a context. PBL can enhanced the knowledge application of students where this knowledge of application can help them make a connection between the classroom and real life. PBL is especially relevant in engineering education and the use of project-based learning as a key component of engineering programs should be promulgated as widely as possible (Mills & Treagust, 2003) while engaging in an engineering project, following an engineering design process will allows systematic learning and assessment simultaneously exposing to experience the cognitive processes of an engineer (Tate, Chandler, & Fontenot, 2010).
A project is a depth study of a particular topic that consists of exploring a topic or theme and it should extend over a period of days or week. The content or topic of a project is usually drawn from the world that is familiar to the students. This approach can cultivate the life of the young child’s mind, knowledge, skills, emotional, moral and aesthetic sensibilities (Lilian & Sylvia, 1990). It encourages them to pose questions, pursue puzzles and increase their awareness of significant phenomena around them. The idea of learning through projects originally gained popularity in the United States, where it was advocated by both Dewey and Kilpatrick (Lilian & Sylvia, 1990).

The main goals of project learning based learning are to develop students’ understanding and ability to investigate a question or problem systematically, beside that to the develop self-directed students (Eggen & Kauchack, 1999). In the first goal; by participating in structured problem-based activities, students learn how to solve problems in a comprehensive and systematic manner. For the second goal; self - directed learning is a form of metacognition, which involves knowing what we need to know, knowing what we know, knowing what we don’t know and devising strategies to bridge these gaps.

5. Integrating thinking based learning in Solar Rafting STEM Project

The Solar Rafting STEM project take about 5 weeks to be completed. Students are require to carry out tasks and solve problem that replicate the real world in the sense using their knowledge and skills. The instructional 6E learning model; engage, explore, explain, engineer, enrich and evaluate are integrated with the skillful thinking as shown in Table 6.

Example of Five Weeks Lesson Plan

Solar Rafting STEM project

Theme: Scientific method

Standard of content:

Density

Standard of Learning:

Construct the innovation object based on density concept

Learning outcomes based on project:

a. Students understand the concept of energy transfer and change.
b. Students able to construct a raft using Popsicle stick and hot glue.
c. Students able to complete the journal on density concept and buoyancy through construction of solar raft.

Thinking based learning:

Skillful thinking

Critical and Creative thinking

Metacognition
Question purpose concept

**Habits of mind**

Discussion skills
Gathering data through all the sense
Thinking collaboratively

**Table 6 Example of Five Weeks Lesson Plan**

<table>
<thead>
<tr>
<th>Phase</th>
<th>Standard of learning</th>
<th>Teaching &amp; learning activity</th>
<th>Thinking Based Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engage</td>
<td>Construct innovation object</td>
<td>Students 4 person per group, they will be given this follow portfolio as: 1.General Manager 2.Engineer designer 3.Multimedia designer 4.Accountant Teacher will be explain about the Solar Rafting project. Before that, teachers will introduce the concept of density and buoyancy. <strong>Introduce concept of density and buoyancy</strong> Material given: oranges grapes clumps of clay They will observe which one will floating or sinking. Students will make observation table to show which objects floating or sinking.</td>
<td>Thinking skill: Creative thinking: Students will generating ideas and solutions with others. Listening is a skill that can be learned and improved.</td>
</tr>
<tr>
<td>Exploration</td>
<td>Making a clay boat With a clumps of clay given, students have to make a clay boat and make sure their boat floating. <strong>Making a cork boat</strong> Each groups will be given cork, rubber band, hot glue, stick. The engineer designer will decide in group how they are going to build their cork boat. <strong>Making a raft</strong> Each group will decide the material they want to use to build the raft. Students have opportunity to get involved directly with materials. They work in teams, build a set</td>
<td>Each group will be given a clump of clay. From a clump of clay given, they have to make clay boat which can float. By using cork, the designer will decide how to build the cork boat and the accountant will calculate the cost they need. The multimedia designer will prepare for the presentation. Each group will be given chance to use any material they like to build the raft. They have to draw their raft design. Use their prior knowledge about floating and sinking. Students construct the raft frame. The engineer designer will discuss with their group about the design.</td>
<td>Habits of mind: Discussion skill: They need to discuss why a clump of clay sinking, but a clay boat from a same clump of clay floating. Thinking skill: Analysing skill Students clarifying needs, investigating contexts and verifying before explain to their friends. Thinking skill:</td>
</tr>
<tr>
<td>Phase</td>
<td>Activity</td>
<td>Habits of mind that facilitate beneficial social interaction:</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Explain</td>
<td>Applies concepts, principles and theories related to the system.</td>
<td>Listening respectfully for understanding. Listening is a skill that can be learned and improved. Thinking collaboratively by generating ideas and solutions with others.</td>
<td></td>
</tr>
</tbody>
</table>
| Engineering | Density concept  
Buoyancy concept | By using the concept of density and buoyancy they will gathering more information to make explanation to other group. The engineer designer and multimedia designer will play an important role here. Students should do their listening slowly and carefully during explanation. During the presentation the students from other group can ask any question if they need more information. |
| Enrich  | Measurement size of the raft model  
Using density and buoyancy concept the raft should be floating. | Thinking skill: Creative problem solving. Applying technique from theory, generating ideas with others, seeing engineering as a team sport. |
| Evaluation | Writing the reflective journal  
Write the worksheet given in the polio.  
Engineering booklet. | Metacognition: Students analyzing their answer in booklet engineering given. Analyzing and comparing their answer. |

Base on Table 6, there are thinking skill, a few habits of mind, and metacognition are integrated during specific phase in the 6 E Instructional model.

In the engage phase (1), students are divided into four person per group. The are assigned different role to plan for building the Solar Raft. They are brainstorm among themselves to generate creative idea based on their prior knowledge. In the exploration (2) phase, there a few habits of mind we can infuse here, which is discussion skill, gathering data through all the sense and thinking
collaboratively. Central for this habits is the considering an idea from the point view of several different of others rather than just our own. This include be open minded, tolerating ambiguities, avoiding and understanding the pull of the dominant or popular idea (Anderson, 2010).

In the explain phase (3), students will be given an opportunity to explain and refine what they have learned and determine what it means. At the beginning of the project, discussion in explain phase enable the teacher explore the student’s present understanding. They may use their drawing to show their explanation. In engineering phase (4), students will be given opportunity to develop greater depth of understanding about the problem given by applying concepts, practices and attitudes. In this phase we infuse analysing concept which is under metacognition. Other abilities that fall under the umbrella of metacognition are; comparing and contrasting, picturing thinking, describing thinking which refers to knowledge about and regulation of one’s thinking. Teaching students to become more metacognitive equips them with skills to drive their brains and become self-directed learners (Wilson & Conyers, 2016).

In enrich (5) phase students transfer understanding and purpose to new situations and applications. The concepts of design, modelling, resources and system will be apply to human value in ways that enrich their understanding and their ability to transfer learning to new situations and problems (Bybee, 1997). A student uses metacognition when they analysing their model about size and shape. In evaluate phase (6), students write their reflective journal about their experience gain during the project milestone. The also write the worksheet given in the portfolio.

6. Conclusion

Skillful thinking would be the fundamental to nurture students’ creativity through authentic green STEM project based learning approach. Appropriate skillful thinking need to adapt and adopt during the specific phases in the 6 E Instructional Model in order to systematic thinking among students. By having balance thinking skills, and goof habits of mind and awareness about oneself thinking would allow students to progress in developing quality engineering product through the facilitation of the teacher. Student with skilful thing are capable to become future innovator rather than become user.

7. References


Kepimpinan Instruktional dan Gaya Komunikasi Pengetua Dengan Komitmen Guru Sekolah Menengah Kebangsaan (SMK) Harian di Negeri Kedah

Faridah Othman dan Norazlinda Saad

Universiti Utara Malaysia


Kata kunci: Kepimpinan Instruksional, Gaya Komunikasi, Komitmen Guru

1. Pengenalan

2. Penyataan Masalah
komunikasi pengetua dengan komitmen guru sekolah menengah harian di negeri Kedah kerana masih kurang kajian yang melibatkan ketiga-tiga pemboleh ubah tersebut dalam satu kajian.

3. Tinjauan Literatur

3.1. Kepimpinan instruksional


3.2. Gaya komunikasi


3.3. Komitmen guru

4. Metodologi Kajian


JADUAL 1: Instrumen Kajian

<table>
<thead>
<tr>
<th></th>
<th>Bilangan Item</th>
<th>Sumber</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kepimpinan Instruksional</td>
<td>76</td>
<td>Mohd Yusri Ibrahim (2012)</td>
<td>.97</td>
</tr>
<tr>
<td>Gaya Komunikasi</td>
<td>40</td>
<td>Zahari Jaafar (2002)</td>
<td>.96</td>
</tr>
<tr>
<td>Komitmen Guru</td>
<td>28</td>
<td>Mohd Ramzan Awang (2014)</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.98</td>
</tr>
</tbody>
</table>

5. Dapatan Kajian
5.1. Demografi responden

JADUAL 2: Demografi Responden

<table>
<thead>
<tr>
<th>Demografi Responden</th>
<th>Frekuensi</th>
<th>Peratusan (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jantina</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lelaki</td>
<td>25</td>
<td>20.8</td>
</tr>
<tr>
<td>Perempuan</td>
<td>95</td>
<td>79.2</td>
</tr>
<tr>
<td>Kumpulan Umur</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kurang 30 Tahun</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>30-39 Tahun</td>
<td>42</td>
<td>35.0</td>
</tr>
<tr>
<td>40-49 Tahun</td>
<td>53</td>
<td>44.2</td>
</tr>
<tr>
<td>Lebih 49 Tahun</td>
<td>22</td>
<td>18.3</td>
</tr>
<tr>
<td>Pengalaman Mengajar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-5 Tahun</td>
<td>9</td>
<td>7.5</td>
</tr>
<tr>
<td>6-10 Tahun</td>
<td>20</td>
<td>16.7</td>
</tr>
<tr>
<td>11-15 Tahun</td>
<td>26</td>
<td>21.7</td>
</tr>
<tr>
<td>16-20 Tahun</td>
<td>30</td>
<td>25.0</td>
</tr>
<tr>
<td>Melebihi 20 Tahun</td>
<td>35</td>
<td>29.2</td>
</tr>
<tr>
<td>Kelulusan Akademik</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>2</td>
<td>1.7</td>
</tr>
<tr>
<td>Ijazah Sarjana Muda</td>
<td>102</td>
<td>85.0</td>
</tr>
<tr>
<td>Ijazah Sarjana</td>
<td>16</td>
<td>13.3</td>
</tr>
</tbody>
</table>
Jadual 2 menunjukkan bahawa bilangan guru perempuan yang terlibat dalam kajian ini melebihi bilangan guru lelaki. Jumlah responden lelaki adalah 25 orang (20.8%) manakala responden perempuan adalah 95 orang (79.2%). Berdasarkan kumpulan umur, bilangan guru yang berumur dalam lingkungan 20 hingga 29 tahun adalah paling sedikit iaitu 3 orang sahaja (2.5%) dan umur 40 hingga 49 tahun merupakan responden yang paling ramai terlibat dalam kajian ini iaitu 53 orang (44.2%). Dari segi pengalaman mengajar pula, dapatan menunjukkan bahawa seramai 9 orang guru (7.5%) mempunyai tempoh mengajar kurang dari lima tahun manakala 35 orang guru (29.2%) mempunyai pengalaman mengajar melebihi dua puluh tahun. Berdasarkan kelulusan akademik, hanya 2 orang guru iaitu 1.7% berkelulusan diploma dan majoriti responden iaitu 102 orang (85.0%) berkelulusan ijazah sajana muda. Selain itu, terdapat 16 orang guru (13.3%) berkelulusan sarjana.

5.2. Tahap kepimpinan instruksional

Kepimpinan instruksional pengetua dikategorikan kepada tiga tahap iaitu tahap rendah sekiranya nilai skor min adalah di antara “1.00 hingga 2.33”, tahap sederhana antara “2.34 hingga 3.67” dan tahap tinggi jika skor min adalah di antara “3.68 hingga 5.00”.

<table>
<thead>
<tr>
<th>JADUAL 3: Tahap Kepimpinan Instruksional Pengetua</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
</tr>
<tr>
<td>Kepimpinan Instruksional Pengetua</td>
</tr>
</tbody>
</table>

Dapatan kajian dalam Jadual 3 menunjukkan bahawa tahap keseluruhan bagi dua belas fungsi kepimpinan instruksional pengetua SMK harian di negeri Kedah adalah pada tahap tinggi dengan min = 3.86.

5.3. Gaya komunikasi pengetua

Berdasarkan Communicator Style Measure (CCM) oleh Norton (2010), sepuluh jenis gaya komunikasi yang dikaji adalah peramah, meninggalkan kesan, tenang, suka berbincang, prihatin, ketepatan, ekspresif, dramatis, terbuka dan dominan.

<table>
<thead>
<tr>
<th>JADUAL 4: Gaya Komunikasi Pengetua</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
</tr>
<tr>
<td>Peramah</td>
</tr>
</tbody>
</table>

Dapatan kajian dalam Jadual 4 menunjukkan gaya komunikasi peramah sering dipraktikkan oleh pengetua di negeri Kedah dengan min = 4.09.

5.4. Tahap komitmen guru

Tahap komitmen guru diukur menggunakan skor min iaitu tahap rendah sekiranya nilai skor min adalah di antara “1.00 hingga 2.33”, tahap sederhana antara “2.34 hingga 3.67” dan tahap tinggi jika skor min adalah di antara “3.68 hingga 5.00”.

<table>
<thead>
<tr>
<th>JADUAL 5: Tahap Komitmen Guru</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
</tr>
<tr>
<td>Komitmen Guru</td>
</tr>
</tbody>
</table>
Berdasarkan Jadual 5, tahap keseluruhan bagi komitmen guru SMK harian negeri Kedah adalah tinggi dengan min = 4.06.

5.5. Pengaruh kepimpinan instruksional dan gaya komunikasi pengetua dengan komitmen guru

Keputusan analisis data menunjukkan bahawa kepimpinan instruksional dan gaya komunikasi pengetua merupakan peramal bagi komitmen guru.

<table>
<thead>
<tr>
<th>JADUAL 6: Model Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

*a. Predictors:(Constant), Kepimpinan Instruksional*  
*b. Predictors: (Constant), Kepimpinan Instruksional, Gaya Komunikasi*  
*c. Dependent Variabel: Komitmen Guru*

Jadual 6 menunjukkan bahawa korelasi antara kepimpinan instruksional dengan komitmen guru adalah .31 manakala korelasi bagi kombinasi kepimpinan instruksional dan gaya komunikasi dengan komitmen guru adalah .39. Kepimpinan instruksional menyumbang sebanyak 9.5 peratus varians ($R^2 = .095$) terhadap komitmen guru. Walau bagaimanapun, kombinasi kepimpinan instruksional dan gaya komunikasi meramalkan sebanyak (15.3 - 9.5) peratus iaitu 5.8 peratus perubahan varians tambahan dalam variabel komitmen guru.

<table>
<thead>
<tr>
<th>JADUAL 7: ANOVA&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
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<tr>
<td></td>
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<tr>
<td></td>
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<tr>
<td>2</td>
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<tr>
<td></td>
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<tr>
<td></td>
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</tbody>
</table>

*a. Dependent Variable : Komitmen Guru*  
*b. Predictors: (Constant), Kepimpinan Instruksional*  
*c. Predictors: (Constant), Kepimpinan Instruksional, Gaya Komunikasi*

Keputusan Ujian ANOVA dalam Jadual 7 menunjukkan bahawa variabel kepimpinan instruksional dan gaya komunikasi merupakan faktor yang signifikan kepada komitmen guru pada aras kesignifikan p < .05. Bagi kepimpinan instruksional, keputusan ujian adalah signifikan $[F(1,118) = 12.34, P < .05]$. Selain itu, keputusan analisis menunjukkan kombinasi kepimpinan instruksional dan gaya komunikasi pengetua juga signifikan $[F(2,117) = 10.57, P < .05]$. Dapatan kajian ini jelas menerangkan kepimpinan instruksional dan gaya komunikasi pengetua merupakan peramal yang signifikan terhadap komitmen guru SMK harian di negeri Kedah.

<table>
<thead>
<tr>
<th>JADUAL 8: Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td>-------</td>
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<tr>
<td></td>
</tr>
</tbody>
</table>
Jadual 8 menunjukkan keputusan yang signifikan iaitu kepimpinan instruksional \((\beta = .77, t = 4.19, P < .05)\) dan gaya komunikasi \((\beta = -.52, t = -2.84, P < .05)\). Dapatatan ini menunjukkan bahawa variabel kepimpinan instruksional dan gaya komunikasi merupakan faktor kepada komitmen guru. Keputusan yang signifikan menunjukkan bahawa model yang boleh dibentuk diwakili oleh persamaan di bawah:

\[
\text{Komitmen Guru} = 82.75 + .32 \text{ (Kepimpinan Instruksional)} - .406 \text{ (Gaya Komunikasi)}.
\]

Berdasarkan keputusan analisis kajian, penyelidik mendapati bahawa kepimpinan instruksional pengetua \((\beta = .77, t = 4.19, P < .05)\) dan gaya komunikasi \((\beta = -.52, t = -2.84, P < .05)\) menambah sebanyak 5.8 peratus \((R^2 = .095)\) kepada varians \([F(2,117) = 10.57, P < .05]\). Hal ini menjelaskan bahawa kepimpinan instruksional dan gaya komunikasi pengetua menambah sebanyak 5.8 peratus kepada varians dalam variabel komitmen guru. Guru-guru menunjukkan komitmen yang tinggi apabila pengetua mengamalkan kepimpinan instruksional dan gaya komunikasi yang berkesan di sekolah.

6. Perbincangan dan Implikasi

6.1. Perbincangan


<table>
<thead>
<tr>
<th></th>
<th>(Constant)</th>
<th>1.0769</th>
<th>7.062</th>
<th>.000</th>
<th>4.139</th>
<th>.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>76.046</td>
<td>.128</td>
<td>.036</td>
<td>.308</td>
<td>3.513</td>
<td>.001</td>
</tr>
<tr>
<td>2</td>
<td>82.753</td>
<td>.321</td>
<td>.077</td>
<td>.772</td>
<td>4.188</td>
<td>.000</td>
</tr>
</tbody>
</table>

\(R^2 = .095\)

a. Dependent Variable : Komitmen Guru
6.2. Implikasi


Seterusnya, kajian ini juga telah memberi implikasi yang positif kepada pengetua. Ini kerana kajian ini menyumbang ilmu baharu dalam bidang sains sosial dan boleh dijadikan rujukan berkaitan kepimpinan instruksional, gaya komunikasi dan komitmen guru kerana masih kurang kajian yang mengkaji tiga variabel ini secara serentak dalam satu kajian. Para pengetua telah diberi pendedahan tentang peranan mereka sebagai pemimpin instruksional serta kepentingan mengamalkan gaya komunikasi yang berkesan agar dapat meningkatkan komitmen guru. Selain itu, dapatan ini juga membantu guru-guru mengetahui keperluan untuk mengekalkan komitmen terhadap sekolah, tugas mengajar, kerjaya dan rakan setugas.

Akhir sekali, hasil kajian ini dapat dijadikan rujukan kepada pengkaji akan datang dan memberi maklumat tambahan yang berguna kepada para pelajar dalam bidang sains sosial.

7. KESIMPULAN


8. Penghargaan

Jutaan terima kasih diucapkan kepada penyelia, Dr Norzlinda Saad yang banyak memberi bimbingan dan tunjuk ajar sepanjang penyelidikan ini. Penyelidik juga mengambil kesempatan untuk mengucapkan terima kasih kepada Bahagian Tajaan Pendidikan, KPM yang telah membiayai pengajian penyelidik di peringkat PHD. Seterusnya, terima kasih juga kepada semua pihak yang membantu dalam penyelidikan ini.

9. Rujukan


Information Behavior among Undergraduates in Sarawak

Nurul Muizzah Binti Johari
Universiti Utara Malaysia

Abstract: Information communication and technology (ICT) is well embraced by all field of knowledge nowadays. Knowledge exploration is one of the fields that makes use of ICT as well as evolved with it. Information behavior is divided into information sharing and information seeking and there are many researcher are into this topic. However, the gap from previous research shows that less research found in Malaysia conducted on local undergraduate student. The purpose of this study is to explore on information behavior of undergraduates in Sarawak. The design of this research is quantitative research and has been conducted through purposive sampling whereby only undergraduates are selected as participants from Universiti Malaysia Sarawak. 95 sets of questionnaire were returned with minor differences in gender distribution. From the inferential analysis, it shows that there are no significant differences in information behavior based on gender. The overall analysis indicates that male respondents have a high tendency towards information seeking compare to female and it is vice versa for information sharing whereby female scores higher than male. It is supported by previous research where male likely to engage with the computer and have high curiosity upon new things. This research has provide insight on the current situation of undergraduates’ information behavior which are needed for academic purposes and helps educators to plan their teaching to suit the information demand of learners.

Keywords: Information behavior, Information seeking, Information Sharing

1. Introduction
Information and communication technology (ICT) has made work quality executable, well-organized, and time-efficient. Since the technology has evolved, information can be transfer, shared and received by anyone at any place on the globe. Academic field in one of the sector that has utilized technology in the process of teaching and learning. ICT helped learners and educators to construct and aid their learning session to become interactive and meaningful. Such implementation has been done on traditional classroom setting which only promote one-way interaction and more to chalk-and-talk. As a result, learners now could learn in interactive environment which visual and audio has been incorporated into the session.

Information behavior has been studied since 1970’s which investigate the usage of library resources and services (Rubinic, 2014). Then, during the last two decades, researchers started to develop interest on expanding the study on information behavior to multiple disciplinary. Concern has risen upon research on information behavior due to demand and the benefits that it hold. Sharing knowledge and information could help to support individual’s learning and innovation skills (Riege, 2005; Wai Ling, Sandhu, & Kishore Jain, 2009), enhance learner’s performance (Srivastava, Bartol, & Locke, 2006), increase skills and proficiencies levels (Ketvirtis, 2011), and also diffusing knowledge among personnel in the same or outside the entity (Argote & Ingram, 2000).

This research aim to investigate the information behavior pattern holds by the undergraduate in Sarawak based on gender. Information behavior is divided into two; information seeking and information sharing.

2. Problem Statement
Evolution of technology occurs every day. The process also affecting education system likewise in teaching and learning session. Usage of chalk-and-talk method is considered as traditional style of teaching. Per say, the modern method are involving the use of both traditional and technology to promote understanding and interactive learning. Mills and Knezek (2012) mentioned that technology act as the main, formal and informal information seeking, content sharing and self-expression of the 21st century.

Information is a piece of knowledge that have significant role in both formal and informal occasion where each personnel meant to take control of the information. The piece of information could be used for
work, leisure, and everyday decision ad demand (Bruce, 2005). Information behavior is an attitude which possessed and needed in everyday life. It is classified into information seeking and information sharing. Research upon information behavior has been conducted around the world. As in Malaysian context, most of the research carried out only focusing on information seeking.

Suraya Hamid and Sarah Bukhari (2015) has executed a research to discover on information seeking of international students who interact with online material, local students, fellow international peers, as well as local community to help them to encounter the challengers of being away from home. The outcome shows that information seeking had play its role to provide platform for interaction at anytime and anyplace through the use of social media (O’Farrell & Bates, 2009). Most of the research found, shows that researcher are keen to focus on information seeking compare to information sharing. In Malaysia, such research only done towards international students.

Hence, this research aim to provide view of information behavior status from local undergraduate’s perspective based on gender. It focuses on both information seeking and information sharing. Studies are from academic perspective where students are literally engaged in dissertation, thesis, as well as assignments.

3. Literature Review

3.1 Information behavior

Information behavior model has introduced by Wilson (1981). It focuses to outline multiple areas covered by “information seeking behavior”. The model has suggested that information-seeking behavior ascends as a concern of a need perceived by an information user, who wants to satisfy their need, makes request on formal and informal information sources or services, that then resulting in success or failure to obtain relevant information.

The model also portrays the element of information-seeking behavior that might include other personnel through information exchange. The information then will be perceived as useful may be passed to other personnel and could be used by the person himself or herself instead. However, there are some restriction for this model. The model itself only providing the mapping of the area and drawing attention to the gaps in any research. Besides that, it does not provide suggestion of contributing factors in information behavior and also did not directly suggest hypotheses to be tested.

Kuhlthau (1991) has created Information Search Process (ISP) Model. This model explains on the stages of learners’ information activity that is initiation, selection, exploration, formulation, collection, and

![Wilson's model of information behavior](image-url)
The model highlighted that human information behavior is a process and by understanding the cognitive and affective component can help to form human information behavior.

**TABLE 1. Information Search Process (ISP) (Kuhlthau 1991)**

<table>
<thead>
<tr>
<th>Stages in ISP</th>
<th>Initiation</th>
<th>Selection</th>
<th>Exploration</th>
<th>Formulation</th>
<th>Collection</th>
<th>Presentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common feeling</td>
<td>Uncertainty</td>
<td>Optimism</td>
<td>Confusion, frustration, doubt</td>
<td>Clarity</td>
<td>Sense of direction or confidence</td>
<td>Relief, satisfaction or disappointment</td>
</tr>
<tr>
<td>Common thought</td>
<td>General / unclear</td>
<td>Narrowed / clearer</td>
<td>Increase interest</td>
<td>Clearer or focused</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common action</td>
<td>Seeking background information</td>
<td>Seeking relevant information</td>
<td>Seeking relevant focused information</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate task</td>
<td>Recognize</td>
<td>Identify</td>
<td>Investigate</td>
<td>Formulate</td>
<td>Gather</td>
<td>Complete</td>
</tr>
</tbody>
</table>

Information behavior is divided into information seeking and information sharing. Information seeking behavior covers individual information inquiry by using different ways to get information (Heinström, 2005). Wilson (1981) has constructed a second model of information behavior which this model closely related and explaining on information-seeking behavior. It has two main premises which are (1) information need is the main need, but a secondary need that appear out of need of a more basic kind, and (2) in the process to discover information to please a need, the enquirer might meet with different kinds of obstacles. The model also has proposed that the basic needs of this model can be defined as physiological, cognitive of affective need.

Information sharing behavior is one of the main process of knowledge management (Nonaka & Takeuchi, 1995) which it is considered as the strategies for sharing is the gist to organizational and individual improvement (Alavi & Leidner, 2001; Earl, 2001). Erdelez (1997) define information sharing as a method of securing information in an academic setting as information encountering.

Mesmer-Magnus and DeChurch (2009) has listed both conceptual and operational definition for information sharing. It is varied from each researcher. However, the most significant definition to this research is conceptual definition. Miranda and Saunders (2003) refer information sharing as both oral and written discussion of information among the members of the community (p.90). While, Johnson et. al. (2006) defines information sharing as the extent of sharing information among team members.

Kim and Ju (2008) identified the main factors of knowledge sharing among member in higher educational institution. It is perception, trust, and openness in communication, collaboration, reward systems and communication channel. There are four types of information sharing: strategic sharing, paradigmatic sharing, directive sharing, social sharing, and no sharing (Talja, 2002).

**TABLE 2. Information Sharing**

<table>
<thead>
<tr>
<th>Types of information sharing</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic sharing</td>
<td>A mindful strategy of maximizing efficiency in a research group</td>
</tr>
<tr>
<td>Paradigmatic sharing</td>
<td>Establishing new and distinguishable information</td>
</tr>
<tr>
<td>Directive sharing</td>
<td>Information shared between teachers and students</td>
</tr>
<tr>
<td>Social sharing</td>
<td>Information sharing as a bonding and community building activity</td>
</tr>
</tbody>
</table>

**3.2 Information behavior and gender**

There is gender differences exist in all aspects of society. Eagly (1987) stated that each gender attempts to gain definite skills and resources for successful role enactment based on gender. It is also helps in adaptation of social behavior to comply with the requirement set for each gender.

In a research on information searching, McClelland (1975) mentioned that males have a tendency to be insistent, independent, and egocentric. While, female is classified as having tendencies to seek for endorsement from others, generate encouragement relationships with others, and maintain interpersonal connection. The researcher also emphasized that, the implication of the observation; 1) males spend less time to search for information, hence there is possibility of less information sources and topic searched,
because of their high level of self-reliance; 2) females are more motivated to search for information from friends and kin because of their predisposition of getting consent from others.

Agosto (2001) has presented a model of information behavior based on gender. It shows that young women use the information from electronic resources such as Web resources has been manifest into several main beliefs; collaboration, social networking, tractability and movement, attachment to community, contextually and personal involvement. In an eye-tracking study by Lorigo et al. (2006, p.1123-1131), it shows that men had greater average complex durations on selected Web documents compared to women. Women said to have significantly longer probe while using Google search engine than males. Urquhart and Yeoman (2010) classified gender as one of the moderating factors which affecting information seeking.

4. Methods
Cross-sectional research design was used as the research aim to measure differences between groups, subjects, or events (Labaree, 2009). This research has been conducted quantitatively by using survey and questionnaire. Items in the close-ended questionnaire are adopted from research by Mills and Knezek (2012). Pilot study has been conducted to ensure that data collected are reliable. 106 undergraduates are selected randomly from seven (7) faculties available in the main campus of Universiti Malaysia Sarawak (UNIMAS); Faculty of Cognitive Sciences and Human Development, Faculty of Engineering, Faculty of Resource Science and Technology, Faculty of Economics and Business, Faculty of Social Sciences, Faculty of Applied and Creative Arts, and Faculty of Computer Science and Information Technology. The rate of turnover is 89% since only 94 sets of questionnaire is usable and returned.

Pilot test that conducted prior the actual data collection shows that Cronbach’s Alpha Value for the items in questions related to information behavior is 0.835 as shown in Table 1 which indicate that the items are acceptable.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of items</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information and Communication Technology Learning</td>
<td>15</td>
<td>0.835</td>
</tr>
<tr>
<td>Information Seeking</td>
<td>7</td>
<td>0.709</td>
</tr>
<tr>
<td>Information Sharing</td>
<td>8</td>
<td>0.714</td>
</tr>
</tbody>
</table>

5. Results
The data collected has been analysed using descriptive and inferential statistics. It is divided into two section which are demographic information and a section which contain items for Information Communication Technology Learning (ICTL). This section has adopted from Mills and Knezek (2012). There are two types of information behavior that used in this research is information seeking and information sharing.

5.1 Demographic information
Based on the demographic information presented in Table 2, most of the respondents were male (50.5%). A total of 55.80% are among 22 years old, and the majority was Malay (71.60%) and followed by ethnic group in Sarawak like Iban, Melanau, Bidayuh and Kedayan (16.80%).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Classification</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>47</td>
<td>49.50</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>48</td>
<td>50.50</td>
</tr>
<tr>
<td>Age</td>
<td>20 years old</td>
<td>5</td>
<td>5.30</td>
</tr>
<tr>
<td></td>
<td>21 years old</td>
<td>24</td>
<td>25.37</td>
</tr>
<tr>
<td></td>
<td>22 years old</td>
<td>53</td>
<td>55.80</td>
</tr>
<tr>
<td></td>
<td>23 years old and above</td>
<td>13</td>
<td>13.70</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Malay</td>
<td>69</td>
<td>71.60</td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td>7</td>
<td>7.40</td>
</tr>
<tr>
<td></td>
<td>Indian</td>
<td>4</td>
<td>4.20</td>
</tr>
<tr>
<td></td>
<td>Iban, Melanau, Bidayuh, Kedayan, Rungus, Sungai, and others</td>
<td>16</td>
<td>16.80</td>
</tr>
</tbody>
</table>

TABLE 4. Respondents’ Demographic Information
5.2 Information behavior
The main objective of this research related information behavior holds by undergraduates. The research wanted to investigate if there is any differences between information behaviors of undergraduates based on gender. An independent t-test was used to analyze the data collected. Table 3 shows that the mean values of information behavior of undergraduates based on gender and the t-test (Table 4) confirm that there is no differences between gender for information behavior as it is stated that p-value (0.316) is greater than 0.05. The values portray that there is no significant difference for information behavior based on gender.

<table>
<thead>
<tr>
<th>Table 5. Group Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Information Behavior</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Information Seeking</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Information Sharing</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 6. Independent Sample T-test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Information Behavior</td>
</tr>
<tr>
<td>Information Seeking</td>
</tr>
<tr>
<td>Information Sharing</td>
</tr>
</tbody>
</table>

6. Discussion and Conclusion
The results of the analysis have revealed that undergraduates at the local university in Sarawak on gender basis have different type of information behavior. Most of the student more to information seeking behavior. Based on the data collected, it shows that most of male (30 person) tend to be information seeker compare to female (29 person) while for information sharing, it is dominated by female (17 person) compared to male (14 person).

The descriptive analysis done on information behavior based on gender shows that male is dominating for both information seeking and information sharing behavior compare to female. This finding is supported by Dubi and Rutsch (1998). The research was done to examined the Internet search information behavior among students from different level of academic background and the result shows that female students is lack on self-confidence as they felt lacking of skill to deal with search engine by describing it as difficult and it is supported by Shashaani and Khalili (2001). Female learner are less likely to engage with technology devices as they underestimate their abilities compared to male learner as they repeatedly overestimate their abilities to use technology (Bannert & Arbinger, 1996; Copper & Stone, 1996).

To conclude, this research has brought insight on undergraduate level of information behavior particularly in Sarawak. Information behavior are needed in order to assist learner searching for information based on the correct flow and ethic as well on sharing it to others. However, this research only being carried out within Kota Samarahan, Sarawak context and thus, the result might not representing the whole population of higher education learners in Sarawak and importantly in Malaysia. The size of sample are rather small since it is due to time constraint and it only covers the faculty that located in main campus whereby the Faculty of Medicine and Health Science is located at Kuching, Sarawak.
Therefore, for future researcher, an extension of location for the research should be taken into consideration to allow representation of the whole population of higher education learners from both public and private institution as well. Another suggestion is the research could be done in all states in Malaysia per concern of diversity of culture and races.

7. Acknowledgement

I would like to thank undergraduates from Universiti Malaysia Sarawak (UNIMAS), who has attended the survey. The gratitude also goes to my former supervisor, Mr. Mohd Hafizan Hashim and my current supervisor, Dr. Surendran s/o Sankaran for their time, attention, support, valuable and helpful suggestion during the preparation of this article.

8. References


Suraya Hamid & Sarah Bukhari (2015). Information seeking behavior and international students: The role of social media in addressing challenges while abroad, 590-596.


Peer Tutoring in Mathematics: Listening to Students’ Perceptions and Attitudes to Improve Programme

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EduNation Malaysia

Abstract: This study examined the perceptions and attitudes of students in a reciprocal peer tutoring programme in Mathematics in Malaysia. Focus groups and reflection journals with open-ended questions were used. The study found that students’ perceptions and attitudes were generally positive, but this differs slightly according to the students’ ability. This student feedback is used to improve the programme. Implications for practice and for future research, especially for interventions that engage students to give feedback for the programme, are discussed.

Keywords: peer tutoring, problem solving, student feedback.

1. Introduction

Malaysian students’ poor performance in international mathematics assessments (The World Bank, 2013; OECD, 2014) have prompted schools and teachers nationwide to search for interventions to address the decline in Mathematics performance. Some teachers have looked to peer involvement due to its ability to attend to the needs of several students at a time at a low cost. Peer tutoring, a peer-mediated intervention, is the practice of students helping other students to learn and in the process, learning themselves (Topping, 1996). Peer tutoring has been found to benefit both tutors and tutees, but research has highlighted that tutors benefit more than tutees (Roscoe & Chi, 2007). Reciprocal peer tutoring (RPT), maximises these benefits by providing students the opportunity to alternate between student and teacher roles, thus allowing them to acquire learning, teaching and also interaction skills in the process (Fantuzzo, Riggio, Connelly, & Dimeff, 1989).

The success of any intervention however, does not only depend on teachers, the common decision-makers in education, but also on students’ perceptions of and attitudes toward the intervention. If students like the intervention and believe that it is effective, they would be more eager to participate and may even benefit more from the programme. Asking students for feedback also empowers them to take ownership of their learning. As such, students should be consulted in any decision to plan or improve the implementation of a programme. This research aims to examine student perceptions and attitudes toward RPT in Mathematics to guide the continuous improvement of the programme.

2. Literature Review

2.1. Theoretical perspectives

Various theories and convictions of how and why RPT works have been proposed. Vygotsky (1978) posits that we learn through interactions with more knowledgeable others in the Zone of Proximal Development (ZPD), which is the area between our actual and potential development level (Vygotsky, 1978). In peer tutoring in Mathematics, the tutor scaffolds the learning of the tutee by modelling the strategies and metacognitive skills necessary to solve problems. Piaget’s theory (1950) suggests that children form new structures or concepts through interactions with the environment. Interaction with peers during peer tutoring can lead to the development of new cognitive structures when peers disagree.
about how to solve a problem (O'Donnell & Hmelo-Silver, 2013) or when incorrect reasoning are exposed (Slavin, 1995). Another theory, the cognitive elaboration theory (Slavin, 1989), theorizes that compared to passive learning, students learn more effectively if they have the opportunity to actively engage with the material by elaborating on it (Bridges & Hallinger, 1998). Tutoring others essentially intensifies fundamental information processing activities such as encoding, rehearsal, metacognition and retrieval (O'Donnell, 2006), and feedback from peers enables the tutors to check their understanding of the concepts they are explaining (O'Donnell & Dansereau, 1992).

Vygotskian theory and the cognitive elaboration theory offer an explanation of the learning processes of tutees and tutors respectively, while Piagetian theory expounds on the learning that happens through the interaction between tutors and tutees. Together, these theories point to the possible benefits peer tutoring has to both tutors and tutees accrued to tutoring, being tutored and the interaction between pairs. Indeed, RPT maximises these benefits by giving students the opportunity to take on the role of a tutee and a tutor.

2.2. Research on reciprocal peer tutoring in mathematics

Studies on RPT in Mathematics, which are mostly randomised controlled trials, showed that students in the RPT groups performed better in Mathematics assessments of basic computations and perceived themselves as more socially and academically competent and of better conduct compared to the control group (Fantuzzo, King & Heller, 1992; Fantuzzo, Davis & Ginsburg, 1995; Ginsburg-Block & Fantuzzo, 1997; Menesses & Gresham, 2000).

Fantuzzo, et. al., (1995) compared the performance of students in parent involvement (PI)+RPT, PI only and practice control (PC) groups. The study found that the PI+RPT group performed better in a curriculum-based assessment of Mathematics and reported that they are more socially accepted than the PI or PC groups, while PI+RPT and PI students also reported higher ratings of scholastic competence and behaviour. In another research, Ginsburg-Block & Fantuzzo (1997) investigated the observable behaviours in RPT that led to academic outcomes in at-risk students. It was found that RPT students were engaged at a higher rate and showed more problem solving behaviour than control group students. These students also outperformed the control group in basic computations and self-report of social competence and behaviour. It was also demonstrated that tutees’ engaged behaviour correlated positively with Mathematics achievement, tutors’ inattention negatively correlated with tutee’s active participation, and tutees inattention were negatively correlated with the tutor’s active participation. This research shed some light on the interactional processes in RPT that enabled positive outcomes for students.

All the RPT studies reviewed used randomised control trial, the gold standard of research, and all of them found positive outcomes for RPT, establishing the effectiveness of RPT in increasing achievement in basic computations and positive student perceptions of social competence for students at-risk.

2.3. Adaptation of reciprocal peer tutoring to local context

Interventions that are research evidenced need to be adapted to suit the local context to better address the needs of the stakeholders. The suburban school chosen by funders for this intervention wanted to raise the achievement level of their Form 3 students in the national examination. The new version of the examination includes a bigger proportion of questions termed higher order thinking skills (HOTS) questions that require thinking critically, logically, reflectively, creatively and with metacognition (King, Goodson & Rohani, 1998), which many students are not familiar with. To help students succeed in the examination, it was decided that the RPT programme should focus on solving these questions.

The Polya (1945) method of problem solving was introduced to support complex problem solving skills. It was also included to create stronger structures around the RPT programme, which is crucial as
evidenced by research (Fantuzzo et al., 1992). This method recommends that students go through four stages to solve problems - understand the problem, make a plan, carry out the plan and look back at the solution. These prompt students to describe and reflect on their problem solving processes, and develop flexible thinking and problem solving skills (Hensberry & Jacobbe, 2012).

The inclusion of the Polya method in RPT is new and it would be interesting to examine what students think of this method. It would also be important to provide some depth to previous quantitative research on RPT as students’ academic performance, behaviour, and self-perception are complex factors that should also be explored qualitatively. Also, as all four studies focused on basic mathematics computation, it would be interesting to see the effectiveness of RPT for complex problem solving.

This study aims to address the gaps in research and to adapt RPT to the local school context by investigating students’ perceptions of and attitudes toward RPT in Mathematics. Specifically, the research questions that will guide the study are: 1) What are students’ perceptions about RPT? 2) What are students’ perceptions about the implementation of the RPT programme in their school? 3) What are students’ perceptions about the impact of RPT on their academic, social and personal development? 4) What are students’ attitudes towards RPT? In an effort to empower students and to give them a voice in the programme, the research results will be used to improve the programme.

3. Methodology

3.1. Research methodology and design

This study employs a qualitative research methodology using focus groups and reflection journals with open-ended questions to examine students’ perceptions and attitudes toward RPT. As discussed in the previous sections, RPT allows learning through tutoring, being tutored and interaction between pairs. As such, the focus group and reflection journal methods are specifically chosen because they allow the study of the interaction between pairs as well as the experiences of individuals in the pairs. In addition, to ensure that participants in the focus group are homogenous and that experiences of individuals in the pair are captured, students in the pairs will be separated into two focus groups based on relative ability – the higher ability (HA) and lower ability (LA) group. Furthermore, the focus group and reflection journal methods are chosen because they complement each other, enabling the generation of a wide range of discussions without neglecting the voices of reserved individuals.

3.2. Setting and participants

A formal permission to conduct research in the school was obtained. Form 3 students were selected on a first-come first-serve basis from students identified by the Mathematics teacher based on their Form 2 examination performance. Student and parent consent were obtained from the 38 students who registered (23 female and 15 male; 29 with failing grades of E or F and 11 with passing grades of A, B, C or D). Although the intention was to have an equal number of HA and LA students, the sample is skewed towards at-risk students because passing rates were very low in the school. This, however, will enable us to better examine the impact of RPT on students at-risk of failing Mathematics.

The participants in the programme were paired up to form mixed-ability pairs. Students were ordered according to their performance in a diagnostic test and the list was cut in half. The best performer in the HA half was paired with the best performer in the LA half and so forth. Purposive sampling was used to ensure that data from students who have adequately participated in the programme can be examined. Out of students with good attendance, 5 pairs (6 female and 4 male students) were randomly selected and only data from these 5 pairs was examined. Note, however, that students’ ability labels only describe the relative ability within the pair as the sample is skewed towards at-risk students.
3.3. Procedures

Students attended 5 hours of training on how to tutor each other and on using the Polya model. After that, two-hour weekly RPT sessions were carried out after school. Students took turns to be the tutor and the tutee in solving problems categorized as HOTS questions according to Form 3 reference books. Students were given a simple worksheet that encourages them to use the four steps of the Polya model. As this research is part an initiative to incorporate the views of students for the continuous improvement of the programme, the research only examined the first 3 sessions of RPT.

3.4. Instrumentation and data collection

At the end of every session, students in both ability groups were given these open-ended prompts in their weekly journals: a) What was good about tutoring today? b) What was hard about tutoring today? c) In your opinion, what could you and your partner have done to improve today’s tutoring and learning process?

The focus group was carried out after the third peer tutoring session. Structured questions adapted and added upon from Cheng and Ku (2009) were used. The questions corresponded to the research questions:

1. What is your perception of RPT? (understanding of RPT, what they like/dislike about it)
2. What is your perception of the implementation of RPT in your school? (what went well or did not go well, training, Polya model and suggestions for improvement)
3. What is your perception of the impact of RPT on your academic, social and personal development?
4. Do you like RPT? Would you recommend it to your friend?

All the questions used in the reflection journal and focus groups were presented in both English and Malay. The translation of the questions was done by the researcher who is bilingual, in collaboration with a bilingual graduate student. Responses were audio recorded.

3.5. Data analysis

Responses were transcribed and coded in their original language to allow relevant concepts and nuances in the original language to be captured. The transcription of data was done by a bilingual transcriber and the transcribed data were then imported into NVivo 10. The researcher in collaboration with a bilingual graduate student coded the data and identified themes, which were translated into English.

Triangulation is achieved by obtaining data from two sources – students from the HA and LA group. Data from the focus groups also triangulate data from the reflection journals. In addition, member check for journal and focus group responses were carried out to improve the validity of the data.

4. Results and Discussion

A total of 25 reflection journals were collected. A summary of the results, together with themes and subthemes identified, is presented in Table 1. If quotations from journal reflections and/or focus groups are relevant to these themes, a sample of those quotations and their sources were also included. (Note: LA = low ability group; HA = high ability group; FG = focus group; and R = reflection).

<table>
<thead>
<tr>
<th>Themes and Sub-themes</th>
<th>LA/HA/Both</th>
<th>Source &amp; Example Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Perceptions of RPT</td>
<td>FG: teaching friends to be good at something; guiding friends so that the get better</td>
<td></td>
</tr>
</tbody>
</table>
and from each other) Role taking Assisted by peers

Both FG: He teaches me when I don’t understand and I teach him when he doesn’t understand
R: I got to discuss with my friend to solve a challenging question. We asked and answered questions from each other
LA R: I succeeded in answering the challenging questions with the help of my friend

RPT requires certain individual and partner characteristics to be effective
Active participation Patience Good tutoring skills in self Good tutoring skills in partner
Both LA HA LA

Both FG: I like my partner because he works hard and tries; I don’t like my partner because he does not cooperate;
R: Partners need to communicate more to improve sessions
LA FG: When I don’t understand, my partner teaches me again; I don’t like my partner because she gets angry easily
R: Peer tutoring was difficult because I do not know how to teach, how to explain things
LA FG: My partner’s explanations are not very clear. He taught in a confusing way
R: The session was easy because my friend guided me in answering questions that I did not understand

Preparation Both

Students should revise at home to improve sessions.

Student Perceptions about the Implementation of RPT

| HOTS questions are challenging, need scaffolding, but lead to achievement in Maths | Both | FG: HOTS is more challenging
R: There were difficult HOTS questions that needed detailed and high-level thinking
FG: Give 2 basic questions or three. If we go straight into HOTS questions, we won’t understand. If we are first given basic questions, it’s an introduction to the chapter
FG: These questions increased our expertise, trains our minds to think critically, to understand the hidden meanings
R: I was able to answer questions that are of the same level as HOTS questions and I’m happy. It challenges my mind

Polya is useful only in certain situations
Both
FG: It helps to use the strategies step by step before answering; It helped for certain chapters for example fractions.
FG: It takes time. If we use the strategies during exam, I’m afraid we won’t have enough time.”

Training is not useful
Both
FG: I don’t remember. I don’t know. Not really beneficial

Student Perceptions on the Impact of RPT

| RPT improves academic performance, especially Maths | Improvement in Maths Mixed performance in other subjects | Both
FG: My grades improved in the recent examination
FG: No improvement; Some improvement. We used the Polya method in English. Read the questions carefully.

RPT improves social outcomes Improvement in relationship with others
Both
FG: If we see that they are stressed, we will talk to them, ask them about their problems

RPT increases motivation Increase in motivation
Both
FG: We are more motivated to do revision.

Student Attitudes toward RPT

Positive attitudes Both
FG: I like peer tutoring; I will definitely continue with the programme until the end of the year; I will recommend it to friends.

As a whole, student responses are quite similar across ability groups and data collection methods. Peer learning as identified in student responses mirrors the actual definition and nature of peer tutoring (Topping, 1996), showing that these students have sufficient knowledge of the programme after the training and 3 tutoring sessions. Interestingly, when asked about aspects that they liked, students
specifically mentioned role taking, an element that is unique to RPT, suggesting that students are in favour of learning that happens both from tutoring and being tutored. The individual and partner characteristics crucial for peer tutoring also featured similarly across groups and methods. Active participation is perceived to be important for RPT, which is in harmony with the coded behaviours of attention and participation that were found to improve the performance of students (Ginsburg-Block and Fantuzzo, 1997). This demonstrates that students are aware of behaviours that lead to better performance.

Both ability groups across methods also identified that HOTS questions need scaffolding. This suggests that just focusing on HOTS is inadequate for students to master concepts and that lower-order problems should also be included in the programme. This is especially relevant to students at-risk of failing Mathematics, who may not have mastered basic computational skills and for whom higher-order thinking skills may be beyond their current ZPD (Vygotsky, 1978).

Perceptions by both ability groups that the Polya method was only useful in certain cases and that the training (which also includes the Polya method) was not useful suggest that the method may not be effective with the RPT programme for problem solving. It is interesting to note that based on literature review, Lesh and Zawojewski (2007) proposed that the method should not be used as a list of strategies for problem solving, but to develop students’ thinking and reflection skills. Another possibility is that the method may not have been implemented consistently during sessions as implementation integrity measures were not taken. If students do not follow the structure of a programme, Topping (2005) cautions that questioning will be limited in terms of frequency and quality, correction of errors will be infrequent and positive feedback will be given inappropriately. To improve the RPT programme, teachers should monitor implementation integrity and also consider using a new set of prompts to guide problem solving.

The research also found that overall, students from both ability groups have positive perceptions of the impact of RPT on Mathematics performance, relationships between peers and self-motivation. This is in harmony with previous quantitative research in RPT (Fantuzzo et al., 1992; Fantuzzo et al., 1995; Ginsburg-Block & Fantuzzo, 1997; Meneses & Gresham, 2000).

4.1. Lower ability versus higher ability

The responses of students from the HA and LA groups differ markedly in regards to individual and partner characteristic crucial for the effectiveness of RPT. The HA group perceives that tutoring skills in self is very important while the LA group perceives that patience and tutoring skills in their partner are important. The difference in responses may point to the heavier reliance on the HA partner to tutor the LA partner, even though RPT allows both partners to be on an equal plane. This reliance was also apparent when only LA students reported that they liked RPT because they are assisted by peers. As mentioned, as some HOTS may be beyond the ZPD of LA students, they may appreciate the guidance of a more knowledgeable other i.e. HA students. Teachers planning to implement RPT with HOTS questions should then consider pairing mixed-ability students instead of randomly assigning them into pairs.

4.2. Reflection journals versus focus groups

Overall, data from reflection journals were similar to those from focus groups for questions relevant to both sources. However, reflection journal responses were found to be more specific to the sessions compared to focus group responses, which addressed broad and long-term aspects of the programme. The fact that responses from these two sources matched also shows that the level of trustworthiness is substantial.

4.3. Self-regulated learning and student empowerment
The theme of self-regulated learning was identified in students’ responses from both the reflection journal and focus group. Self-regulated learning is learning guided by metacognition, motivation and also self-initiated actions such as planning, monitoring and evaluating (Zimmerman, 1990). In their responses, students employed metacognition to reflect on their mastery of HOTS, strategies that were useful and also their motivation. As reflection journals have been linked to self-regulated behaviour (Cazan, 2012), teachers may consider using them not only to elicit feedback about the programme, but also to develop self-regulated learning among students.

In addition to regulating their own learning, giving students a voice in the process to improve the programme also empowers them to take charge of their learning. In the research, students were very willing to give their opinions and suggestion about the programme. It is recommended that programme coordinators include students as much as possible in the decision-making processes of the programme so that students can take ownership of the programme, too.

5. Conclusion and Future Research

This qualitative research shows that students generally have positive perceptions of and attitudes toward RPT and these differ slightly according to the ability of the students in the pair. This research will be useful for teachers who are looking for ways to adapt RPT to the needs of their students and to their school contexts. Teachers should always try to incorporate students’ views and suggestions into the implementation of the programme.

6. Acknowledgements

We would like to thank Agensi Inovasi Malaysia (AIM) for funding the RPT programme in the school in this research. We would also like to thank the Malaysian Collective Impact Initiative (MCII) and Thoughts in Gear for their support and resources.

7. References


Peranan Pensyarah Penyelia sebagai Pemimpin Pengajaran dalam Amalan Profesional di IPG Kampus Sultan Abdul Halim

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Kata kunci: pensyarah penyelia, kepemimpinan pengajaran, praktikum, penyeliaan

1. Pengenalan


1.1. Pernyataan masalah

Penyelidikan bertujuan untuk membentuk guru pelatih yang kompeten dan berkualiti dengan menguasai aspek pedagogi pengajaran ketika mereka menjalani praktikum (Duke et al. 2006; Hashim & Mohd Daud 2001; Jamaluddin et al., 2006). Pelbagai masalah telah dikenal pasti dihadapi oleh guru pelatih ketika mereka menjalani praktikum. Tahap kesediaan dan pengetahuan pedagogi guru pelatih dikatakan kurang memuaskan (Abdul Razak & Ahmad Shukri 2002; Hazil1995); minat, sikap, pengetahuan dan kemahiran mengajar yang sederhana (Baharin 2006; Halimah 2006; Shariff et al., 1994) merupakan elemen yang telah dikenal pasti menjadi masalah utama kepada guru pelatih. Selain itu, keyakinan diri mereka dalam menyampaikan isi pelajaran juga didapati masih rendah (Hashim & Mohd Daud 2001); prestasi guru pelatih ketika praktikum kurang memuaskan (KPTM & KPM 2005). Malahan terdapat juga guru pelatih
tidak berusaha untuk meningkatkan kualiti pengajaran dan membuat penambahbaikan mutu pengajaran (Zakaria et al. 2001). Dalam hal peranan pensyarah penyesia wajar diketengahkan agar mereka dapat memainkan peranan sebagai pemimpin pengajaran. Kajian mengenai peranan pensyarah penyesia sebagai pemimpin pengajaran begitu terhad dikaji oleh peneluidik-penyelidik tempatan. Oleh yang demikian, kajian ini untuk meninjau peranan, bagaimana pensyarah penyesia dapat memainkan peranan sebagai pemimpin pengajaran semasa mereka menyelia pelajar-pelajar praktikum.

1.3 Objektif kajian
Kajian ini bertujuan untuk meninjau peranan peranan penyesia sebagai pemimpin pengajaran semasa menyelia praktikum pelajar-pelajar Semester 7 Pengajian Melayu.

1.4 Persoalan kajian

Apakah persepsi pelajar terhadap kepemimpinan pengajaran pensyarah penyesia semasa praktikum?

2. Tinjauan Literatur

2.1 Penyelidian
Penyelidian pengajaran merupakan aktiviti atau kegiatan yang dijalankan oleh penyesia untuk mempertingkatkan tugas pengajaran guru. Proses penyelidian pengajaran dilakukan terhadap guru-guru yang terlatih, yang bertugas secara tetap di sekolah dan penyelidian terhadap guru-guru pelatih yang menjalani latihan. Penyelidian terhadap guru-guru pelatih dilakukan oleh penyesia daripada institusi yang memberikan latihan kepada pelajar kerana pelajar perlu kemahiran pengajaran (Khairil Awnar, 2014).


2.2 Peranan Penyelidik
Garis panduan amalan profesional telah menggariskan tujuh tanggunjawab yang perlu dilakukan oleh pensyarah penyesia. Antaranya :

a. Menerima surat pelantikan sebagai pensyarah penyesia daripada Pengarah IPG.

b. Menerima maklumat berkaitan praktikum daripada Unit Praktikum.

c. Berbincang dengan pelajar tentang urusan bimbingan dan penyelidian praktikum.

d. Merancang jadual bimbingan dan penyelidian praktikum.

e. Mengadakan perbincangan dengan pengurus sekolah dan guru pembimbing secara berterusan untuk menjalinkan hubungan profesional.

f. Melaporkan kemajuan dan kes-kes disiplin pelajar dari semasa ke semasa kepada Unit Praktikum.

g. Menyemak dan membimbing pelajar

Pada pandangan guru pelatih, penyesia mempunyai pengetahuan yang luas dalam teori dan kaedah pengajaran. Selain itu, pelajar mengandaiy penyesia yang lebih berkebolehan dalam membimbing, memberi jawapan dan memberi cadangan-cadangan untuk menyelesaikan masalah-masalah berkaitan dengan pengajaran guru-guru pelatih. Pengetahuan penyesia tentang teknik mengajar menjadi kriteria utama (Syed Ismail Syed Mustafa, 2012).
2.3 Kepemimpinan pengajaran

2.4 Model kepemimpinan pengajaran

2.4.1. Dimensi 1: Mentakrif matlamat organisasi
Dimensi ini terdiri daripada dua subdimensi yang merangkumi matlamat organisasi yang jelas dan menyebarkan kepada seluruh warga dan komuniti setempat. Visi dan misi IPG adalah untuk melatihkan guru yang Setiap organisasi perlu menetapkan satu matlamat yang dibentuk dan dirangka secara bersama-sama antara pengetua dengan seluruh warga organisasi yang kemudianannya diterangkan dengan jelas dan difahami oleh seluruh warga sekolah serta masyarakat setempat yang berasaskan keupayaan dan tanggungjawab staf untuk melaksanakan tugas di organisasi (Weber, 1996; Hallinger & Murphy, 1985). Dalam hal ini pengarah IPG mengupayakan kepemimpinan pengajarannya kepada pensyarah-pensyarah penyelia untuk memantapkan pengajaran pelajar.


2.4.2. Dimensi 2: Mengurus kurikulam dan pengajaran

2.4.4. Dimensi 3: Pemupukan iklim pengajaran dan pembelajaran yang positif
Hallinger dan Murphy (1985) telah menyenaraikan sebanyak lima subdimensi yang perlu diberi perhatian oleh pemimpin pengajaran. Subdimensi dalam memupuk iklim pengajaran dan pembelajaran yang positif yang dikemukakan oleh Hallinger dan Murphy (1985) adalah mengawal masa pengajaran supaya tidak terganggu, memupuk perkembangan profesionalisme guru, menyediakan pelbagai insentif kepada guru, menyediakan intensif pembelajaran kepada pelajar dan berusaha untuk kerap berada di sekolah agar sentiasa kelihatan berada di sekolah.
Iklim sekolah yang berada dalam keadaan positif seperti yang dimaksudkan oleh Hallinger dan Murphy (1985) merupakan keadaan guru-guru dan pelajar-pelajar menggunakan sebanyak yang mungkin masa untuk pengajaran dan pembelajaran dan mereka berasa gembira untuk berada di sekolah. Perkembangan iklim yang positif dan sihat perlu dipupuk oleh pemimpin dengan mengadakan program perkembangan staf dari semasa ke semasa di peringkat dalam dan luaran (Hallinger & Murphy, 1985). Sebagai pemimpin pengajaran mereka perlu menjadi pemantau kemajuan akademik pelajar yang dibuat penilaian melalui penyelidikan yang dijalankan di sekolah-sekolah.

Selaku pemimpin pengajaran pensyarah penyelia juga perlu menyemak ujian sama ada ujian formatif atau sumatif telah dijalankan oleh pelajar semasa latihan praktikum, di samping menyemak hasil kerja pelajar. Ujian-ujian yang digunakan adalah untuk mengukur sejauh mana pelajar dapat menguasai pelajaran yang diperolehnya di bilik-bilik darjah (Hallinger & Murphy, 1995).

2. Metodologi


3.1. Sampel Kajian


3.2. Instrumen Kajian


4. Analisis Kajian

Soal selidik yang dikumpul dianalisis menggunakan perisian SPSS versi 20. Analisis deskriptif untuk mengukur min, sisihan piawai bagi melihat persepsi terhadap penyelidikan pensyarah penyelia semasa latihan praktikum dan meninjau peranan pensyarah penyelia sebagai pemimpin pengajaran semasa membinbing pelajar-pelajar ketika praktikum. Nilai kebolehpercayaan alpha yang tinggi telah dicapai bagi setiap item soal selidik yang dikesukakan menunjukkan cronbach alpha =.76. Hal ini bermakna item-item yang dikesukakan mempunyai kebolehpercayaan yang sederhana.

4.1. Apakah persepsi pelajar terhadap kepemimpinan pengajaran pensyarah penyelia semasa menjalani praktikum?

Dapatkan ini juga mendapat item keempat iaitu pensyarah penyelia menyemak buku persediaan mengajar dan mencadangkan penambahbaikan yang perlu dibuat. Proses semakan yang dibuat oleh pensyarah penyelia telah membantu guru-guru pelatih memantapkan perancangan pengajaran dan meningkatkan pengetahuan guru-guru pelatih tentang kaedah pengajaran yang sesuai dan tepat berdasarkan Dokumen Standard Bahasa Malaysia. Perkara ini secara langsung telah meningkatkan keyakinan guru-guru pelatih untuk mengajar dengan berkesan dan teratur.


Walaupun item kesembilan menunjukkan min yang rendah berbanding item yang lain, item pensyarah penyelia sentiasa memberikan motivasi dan membimbing pelajar ke arah perkembangan sahsiah yang baik, tetapi penting kerana dapat menunjukkan bahawa pensyarah penyelia bukan sahaja bertindak sebagai penyelia tetapi berupaya meningkatkan motivasi dan perkembangan sahsiah mereka. Hal ini penting kerana motivasi pelajar akan meningkat sekiranya mereka sering diingatkan dan dipupuk.

Item yang mendapat min tertinggi ialah item keenam, "Penyelia perlu mempunyai kepakaran yang tinggi dalam subjeknya". Berdasarkan kajian ini menunjukkan guru-guru pelatih memerlukan bimbingan daripada pensyarah yang mempunyai kepakaran dalam bidangnya. Faktor ini membantu guru-guru pelatih untuk meningkatkan pengetahuan, pengalaman dan kesediaan mengajar kerana kepakaran yang dimiliki oleh pensyarah penyelia akan membantu guru-guru mengajar dengan baik dan berkesan.


<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Min</th>
<th>Sishan Paiwai</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pensyarah memberi penerangan dan berbincang tentang penyeliaan yang akan dijalankan</td>
<td>4.73</td>
<td>0.449</td>
</tr>
<tr>
<td>2</td>
<td>Pensyarah perlu tegas semasa membuat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Perbincangan


Oleh hal demikian dapat dirumuskan bahawa bimbingan pengajaran oleh pensyarah dalam aspek perancangan pengajaran semasa mengikuti praktikum adalah sangat diperlukan oleh guru pelatih. Pensyarah penyelia telah menunjukkan peranan mereka sebagai pemimpin pengajaran. Pemimpin pengajaran merupakan pemimpin yang menurunkan ilmu dan kemahiran yang dimilikinya kepada pengikut-pengikutnya. Kepemimpinan dan bimbingan pensyarah terhadap penyeliaan guru pelatih merupakan elemen yang penting untuk menghasilkan guru pelatih yang berkualiti. Seiring dengan kehendak negara untuk menghasilkan guru yang berasa sahaja berkualiti tetapi mampu menghadapi cabaran masa hadapan. Di samping membolehkan guru pelatih memperkembangkan kompetensi diri dan seterusnya berupaya menjadi guru pelatih yang berkualiti seperti yang digariskan dalam matlamat program praktikum IPG.

6. Cadangan dan Implikasi

Pensyarah penyelia disarankan mengamalkan sikap yang terbuka dan sentiasa berinteraksi dengan guru pelatih semasa memberi bimbingan pengajaran yang mantap kepada guru-guru pelatih bawah...
seliaannya. Antara langkah-langkah yang boleh digunakan oleh pensyarah penyelia kepada guru pelatih bawah seliaanya seperti: (1) berkongsi pengalaman ketika memberikan bimbingan, (2) menyampaikan maklum balas bimbingan secara jelas, telus dan terbuka demi meningkatkan kualiti guru pelatih, (3) menjadikan tugas memberikan bimbingan pengajaran ketika praktikum sebagai sebahagian daripada tugas hakiki yang harus dilaksanakan dengan baik dan sempurna.

7. Kesimpulan
Pensyarah penyelia mampu menjadi pemimpin pengajaran kerana mereka mempunyai kemahiran, pengetahuan, pedagogi dan pengalaman mantap dalam bidang pengurusan kurikulum pengajaran bahasa Melayu. Kepemimpinan pengajaran yang berkesan perlu dimiliki oleh pensyarah dalam proses menyediakan guru pelatih menguasai kemahiran pengajaran serta penguasaan pedagogi yang mantap untuk menyampaikan ilmu di sekolah-sekolah.

8. Rujukan


Syed Ismail Syed Mustapa. (2014). Amalan bimbingan pengajaran pensyarah dan guru pembimbing dalam program Mentoring praktikum serta Impaknya terhadap kualiti guru pelatih. Dalam Jurnal Pendidikan Malaysia 38(1) 78


Pembelajaran Berasaskan Masalah

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Pusat Bahasa Melayu Singapura
Sekolah Rendah Xinmin


Kata Kunci: PBL, penerangan berdasarkan gambar, kemahiran bertutur

1. Pengenalan


Untuk melengkapkan murid dengan kemahiran lisan tidaklah mudah. Ia merupakan satu cabaran bagi guru. Oleh itu, pengajaran lisan tidak seharusnya sekedar menunjukkan cara bertutur dengan baik sahaja tetapi peluang harus diberi kepada murid untuk menggabungalinkan pengetahuan dan kemahiran yang dipelajari daripada mata pelajaran lain. Melalui pendekatan PBL, guru akan dapat meningkatkan kemahiran berfikir murid seperti menyelesaikan masalah, pemikiran analitis dan kritis seperti yang diharap dalam Sukatan Pelajaran Bahasa Melayu Sekolah Rendah 2015.

2. Tujuan Kajian

Kajian yang dijalankan ini bertujuan untuk:
1. meningkatkan kemahiran bertutur murid bagi bahagian penerangan berdasarkan; dan
2. menyediakan kaedah berstruktur untuk membantu murid membina kemahiran berfikir dan menyelesaikan masalah dengan menggunakan konsep PBL.

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3. Pernyataan Masalah


Murid yang sering ketundasan idea dan sering tidak menyokong idea-idea mereka akan menyebabkan pencapaian mereka tidak begitu baik. Guru yang mengajar kelas subjek kajian mengenal pasti bahawa murid sebenarnya tidak pasti apa yang dikehendaki dalam komponen penerangan berdasarkan gambar. Dengan ketidaksamaan itu, murid membuat penerangan dengan cara yang berbeza-beza. Ada yang murid yang berjaya menerangkan gambar dengan padat dan ada juga murid yang hanya menerangkan gambar secara ringkas.

Justeru itu, guru yang mengajar kelas subjek kajian menginginkan murid dapat menerangkan gambar lisan dengan padat. Guru perlu menyediakan satu kaedah berstruktur untuk membantu murid membina kemahiran berfikir dan menyelesaikan masalah yang dipaparkan dalam gambar lisan.

4. Kajian Lepas

Pembelajaran Berasaskan Masalah (PBL) bermula dengan sebagai satu metodologi pendidikan di Universiti McMaster Kanada pada tahun 1969. PBL adalah satu genre pembelajaran Konstruktivis kerana didapati tidak selaras dengan konstruktivisme. Individu membina pengertian kerana dia belajar.

Menurut Howard Barrows, PBL merupakan proses pendidikan yang memerlukan seseorang pelajar mengalami aktiviti pembelajaran yang bergerak dalam alam kehidupan yang nyata. Matlamat utama ialah mencabar pelajar melalui masalah sebagai stimulus kepada pembelajaran yang dapat digunakan pada masa hadapan.

“An education process that requires the learner to go through the same activities during learning that are valued in the world...The intent is to challenge the learner with problems found in practice but as a stimulus for learning and as a focus for organising what has been learned fo later recall and application for future work”

(Boud & Feletti, 2001)

Piaget (1970), mencadangkan bahawa salah satu motivasi untuk perkembangan intelek seseorang adalah ‘konflik kognitif’ yang timbul di antara pengalaman kanak-kanak itu dengan dunia dan memahaminya. Konflik ini merupakan perjuangan yang pengalaman pelajar apabila berhadapan dengan jurang dalam pengetahuan yang mereka perlu tahu untuk menyelesaikan masalah. Pelbagai perkara-perkara yang penting telah dikenal pasti dalam PBL, antaranya adalah:

1. Murid perlu bertanggungjawab dan merancang pembelajaran mereka sendiri;
2. Masalah adalah titik permulaan pembelajaran pengetahuan yang baharu;
3. Guru memudahkan pemikiran murid;
4. Murid harus melakukan cerminan; dan
5. Murid perlu belajar melalui proses penyelesaian masalah.
5. **Kaedah Kajian**


5.1. **Subjek kajian**

Kajian ini melibatkan sejumlah 16 orang murid Darjah 6 daripada kemahiran pelbagai yakni kemahiran sederhana dan kemahiran rendah (*Middle progressive, low progressive*). Pemilihan ini dilakukan berdasarkan markah keseluruhan murid-murid ini bagi komponen lisan (penerangan berdasarkan gambar). Murid-murid ini didapati menerangkan gambar dengan menggunakan ayat mudah, tidak padat dan tidak memberikan respons peribadi mereka. Teknik Pembelajaran Basaskan Masalah dijalankan di dalam kelas agar murid terlibat dalam pembelajaran secara aktif dengan menyelesaikan masalah yang memerlukan penyertaan mereka.

5.2. **Instrumen kajian**

Murid akan menjalani proses konsep PBL iaitu penjanaan idea, isu pembelajaran, pembelajaran kendiri, sintesis dan aplikasi, maklum balas dan pencerahan. Murid perlu melalui proses PBL bagi menyediakan kaedah berstruktur untuk membantu murid membangunkan kemahiran berfikir dan menyelesaikan masalah. Klip video, keratan-keratan akhbar yang sesuai dan aktiviti menjana kecerdasan minda juga digunakan dalam kajian ini bagi membantu murid untuk mendapatkan kosa kata yang sesuai dan tepat untuk menerangkan gambar. Slaid *PowerPoint* tentang penerangan teliti bagi proses PBL juga digunakan dalam kajian ini. Proses PBL dicetak dijadikan kad-kad mini untuk membimbing dan membantu murid semasa melalui proses PBL.

5.3. **Prosedur kajian**

Murid-murid melalui aktiviti yang pelbagai dan bertahap-tahap bagi mengukuhkan proses pembelajaran. Guru membuat pemantauan keberkesanannya penyelesaian masalah, mutu kerja murid dan guru memudahkan proses penyelesaian masalah. Murid akan melalui enam tahap dalam proses PBL.

Pertama, murid akan dikemukakan dengan masalah yang harus diselesaikan. Di tahap ini, murid perlu kenal pasti masalah yang dikemukakan dan senaraikan fakta-fakta, butiran-butiran penting dalam permasalahan yang dikemukakan.

Pada tahap kedua pula, murid perlu senaraikan idea-idea yang berkait dengan masalah yang dikemukakan. Tahap ini merupakan tahap sumbang saran di mana murid boleh kemukakan soalan-soalan. Idea-idea murid boleh berbentuk hipotesis, penerokaan dan kreatif tetapi yang pasti harus dapat menghuraikan masalah yang dikemukakan.

Pada tahap ketiga murid diminta untuk melihat isu pembelajaran dengan perspektif yang pelbagai. Murid harus tentukan apa yang perlu dicari untuk selesaikan masalah yang dikemukakan agar dapat menyelesaikan masalah yang wujud.

Pada tahap keempat memberi ruang bagi pembelajaran kendiri. Murid akan mencari maklumat yang diingini melalui pelbagai sumber. Segala maklumat relevan yang diperoleh akan dibentangkan dan dibincangkan dalam perbincangan seterusnya.

Pada tahap yang kelima, murid perlu meneliti dan merenung maklumat yang dikumpulkan. Murid perlu menganalisis, mengkritik dan menambah maklumat untuk membina dan berkolaborasi.
mengenai pengetahuan yang berkaitan dengan masalah. Di tahap ini juga murid perlu membina jawapan atau penjelasan yang diingini.

Akhir sekali, murid perlu membuat maklum balas dan pencerahan. Murid perlu merenung semula huraian dan penjelasan masalah bagi masalah yang dikemukakan.

6. Dapatkan Kajian dan Perbincangan


Berdasarkan data-kuantitatif seperti yang dibincangkan di atas, jelas menunjukkan kemahiran murid dalam bahagian penerangan berdasarkan gambar telah meningkat. Murid dapat mengikuti proses PBL yang diperkenalkan kepada mereka dengan berkesan. Murid tidak lagi teragak-agak dalam menyatakan pendapat, idea dan penyelesaian yang diketengahkan dalam gambar dan bukan hanya menerangkan aktiviti tanpa penyelesaian. Proses PBL yang telah murid-murid lalui telah membantu murid supaya lebih berkeyakinan untuk menyampaikan idea-idea mereka.

7. Kesimpulan

Kajian ini telah mencapai matlamat yang ingin dicapai. Dengan menyediakan ruang bagi murid untuk menjalani proses PBL, murid lebih berupaya memberikan respons yang lebih padat dengan memberikan penyesuaian bagi masalah yang diketengahkan dalam gambar. Struktur dalam proses PBL berjaya merangsang murid untuk menyampaikan idea-idea mereka dengan lebih menarik, teratur dan memberikan respons peribadi yang baik.


8. Rujukan


Menyemai Budaya Berfikir dalam Pengajaran dan Pembelajaran

Nuraina Mohamed Sin dan Haslina Ishak
Pusat Bahasa Melayu Singapura
Sekolah Rendah Fuhua


Kata Kunci: proses berfikir, menjana pemikiran, kritis, kreatif

1. Pengenalan

Jawatankuasa Semakan Bahasa Ibunda 2004 telah menyarankan agar Kurikulum Bahasa Ibunda menggunakan pendekatan yang berpusatkan murid yang memerlukan pengajaran bersifat interaktif dan memberikan mereka peluang untuk menggunakan Bahasa Ibunda dengan fasih dan yakin dalam situasi yang berbeza-beza. Kaedah Pembelajaran Berasaskan Masalah mampu untuk memberi peluang kepada murid untuk belajar dalam situasi yang autentik. Hal ini memberi ruang untuk mereka untuk memikirkan perkara-perkara yang dekat dengan pengalaman sedia ada mereka. Secara tidak langsung, murid menjadi lebih selesa dalam menggunakan Bahasa Ibunda ketika mengutarakan pendapat dan pandangan mereka meskipun berbeza daripada pandangan rakan-rakan yang lain.

2. Tujuan Kajian

Kajian ini bertujuan untuk:

1. menilai keberkesanan pendekatan komunikatif di bilik darjah menerusi Kaedah Pembelajaran Berasaskan Masalah;
2. memberi peluang kepada murid untuk melalui proses pembelajaran yang relevan; dan

3. Pernyataan Masalah

Murid perlu dididik untuk mengenal pasti masalah berdasarkan situasi yang diberikan demi memastikan mereka dapat memahami konteks atau situasi yang diberikan. Lazimnya mereka mahu menjawab soalan yang diutarakan guru dengan cepat namun jawapan yang diberikan kurang bernas dan mereka juga tidak mampu memberikan penjelasan bagi apa yang telah mereka nyatakan. Hal yang sama juga dilihat semasa latihan dan penilaian bagi kemahiran lisan. Mereka sering gagal mengembangkan idea yang disampaikan dengan baik dan meyakinkan.
4. Kajian Lepas


Richard Paul (1992) pula menyatakan adalah sukar bagi seseorang untuk membuat perbandingan antara fakta dan pendapat dalam kehidupan sehariannya. Namun, hal ini akan menjadi mudah dengan adanya andaian atau pemikiran yang rasional oleh individu itu. Pemikiran yang rasional ini sering dipengaruhi oleh kepercayaan dan sebab-sebab tertentu seperti pengalaman peribadi yang dialami olehnya. Andaian dan pemikiran seperti ini yang bakal membantu seseorang individu itu mencorak pemikiran yang boleh dianggap lebih berasas.

5. Kaedah Kajian


5.1. Instrumen kajian

Rajah 1: Lapan unsur pemikiran yang diadaptasi dari Richard Paul 8 *Elements of Reasoning*

1. **Tujuan Berfikir** (Purpose of Thinking)
2. **Menyoal Masalah** (Question at Issue)
3. **Maklumat – data, pengalaman, pemerhatian** (Information)
4. **Interpretasi dan Inferens** (Interpretation and Inference)
5. **Konsep** (Concepts)
6. **Andaian** (Assumptions)
7. **Kesan dan Akibat** (Implications and Consequences)
8. **Sudut Pandangan** (Point of View)

### 5.2. Prosedur kajian


Jadual: Contoh-contoh Situasi

<table>
<thead>
<tr>
<th>Minggu 1</th>
<th>Minggu 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manusia hanya ada sebiji mata</td>
<td>Sekolah tidak wujud</td>
</tr>
<tr>
<td>Manusia bertangan pendek</td>
<td>Siang tanpa matahari</td>
</tr>
<tr>
<td>Manusia berkaki pendek</td>
<td>Dunia tanpa api</td>
</tr>
<tr>
<td>Mata manusia tanpa kelopak</td>
<td>Waktu malam yang sangat panjang</td>
</tr>
<tr>
<td>Manusia hanya boleh melihat pada waktu malam</td>
<td></td>
</tr>
</tbody>
</table>

6. Dapatkan Kajian dan Perbincangan

Pada fasa pertama, kupasan atau pandangan murid terhadap situasi yang diberikan kepada murid dilihat sekadar pada tahap permukaan sahaja. Mereka gagal mengutarkan pandangan yang lebih kritis. Mereka hanya mampu memikirkan kesukaran yang bakal dihadapi berdasarkan kehidupan dan keperluan mereka pada dasarnya sahaja. Walaupun kaedah Pembelajaran Berasaskan Masalah mampu mengajak murid berfikir namun mereka tidak mampu berfikir secara kritis tanpa adanya panduan serta rangsangan guru. Mereka juga tidak mampu bertanya soalan sebarang soalan bagi memahami situasi atau konteks dengan lebih mendasar. Penyelesaian yang disarankan juga kurang menarik dan tidak kreatif.

Setelah menggunakan ‘The 8 Elements of Reasoning’ oleh Richard Paul (1992), murid semakin selesa dan yakin untuk mengajukan soalan- soalan yang membantu mereka memahami situasi yang guru berikan dengan lebih baik dan teliti. Soalan yang diajukan kemudiannya dijawab guru dan jawapan-jawapan itu menjadi maklumat tambahan untuk murid bagi membantu mereka mengenal pasti apakah sebenarnya masalah yang lebih tepat yang harus diselesaikan oleh mereka.

Rutin refleksi ‘I Used to Think…, Now I Think...’ oleh Ron Ritchhart yang digunakan memberi ruang kepada murid untuk mencatatkan apa yang mereka fikirkan. Mereka mampu untuk menyatakan perubahan idea atau pandangan asal mereka dan turut memberi sebab bagi perubahan tersebut. Murid menunjukkan tahap persediaan yang lebih baik semasa mengupas teks sastera yang dipilih. Mereka lebih selesa menerima soalan-soalan guru dan mampu memberikan respons yang positif bila dirangsang bagi mengenal pasti isi seperti, tema, dan pencirian watak. Mereka juga mampu membuat kaitan antara isi teks dengan pengalaman mereka sendiri berdasarkan perkongsian pengalaman atau pandangan mereka terhadap sesuatu perkara yang ditimbulkan guru.


Semasa proses kajian ini dijalankan, terdapat beberapa cabaran yang dihadapi guru. Guru harus bersedia dan bijak mencungkil isi-isi penting menerusi perkongsian untuk dijadikan bahasan mengajarkan agar tidak lari dari fokus setiap pengajaran yang dijalankan. Kebolehan atau teknik menyolok guru juga memainkan peranan yang penting bagi memastikan murid terus aktif dalam perbincangan dan dalam masa yang sama masih dapat merangsang mereka mencapai objektif pembelajaran. Selain itu, guru juga berhadapan dengan murid yang mempunyai ebolehan yang pelbagai yang mana kadang kala boleh menimbulkan kesukaran bagi guru untuk membentuk pemikiran kritis dalam diri murid seperti yang diharapkan. Guru perlu murid menguasai teknik menyolok dengan baik kerana kemahiran ini penting bagi menentukan atau mempengaruhi pemikiran murid dalam sesuatu pelajaran.

7. Kesimpulan


8. Penghargaan

Kami mengucapkan ribuan kasih kepada pihak Sekolah Rendah Fuhua dan Pusat Bahasa Melayu Singapura yang memberi kami peluang membentangkan hasil kajian kami di peringkat persidangan serantau. Terima kasih juga kepada dengan Cikgu Haslina Ishak yang telah terlibat dalam sesi pemantauan dan menjalankan kajian ini dengan kumpulan murid yang keda.

9. Rujukan


Quah May Ling & Ho Wah Kam (1998). Thinking Process: Going Beyond the Surface Curriculum, Upper
Saddle River, NJ: Prentice Hall.


R.A.F.T. dan Think-Tac-Toe dalam Pengajaran dan Pembelajaran

Ibrizi Ishak dan Hairani Sani
Pusat Bahasa Melayu Singapura
Sekolah Rendah Woodlands

Abstrak: Tugas menulis karangan berasaskan gambar bersiri merupakan sebahagian latihan yang sering murid lakukan. Hal ini boleh menimbulkan rasa bosan dalam kalangan mereka. Tambahan pula apabila mereka diminta menulis mengikut format kertas peperiksaan, dan pengajaran dilakukan tanpa mengambil kira keupayaan murid yang berbeza-beza dalam sesuatu kelas. Lantas, kajian ini bertujuan untuk menarik minat murid menulis melalui pengajaran pembezaan yang berkesan dan menyeluruh.


Kata Kunci: R.A.F.T. Think-tac-toe, pengajaran pembezaan, kreatif

1. Pengenalan

Pengajaran pembezaan ialah pendekatan yang telah luas dilaksanakan di kelas kerana keberkesanannya. Dengan menggunakan pendekatan pengajaran pembezaan, guru mengharapkan pengajaran lebih bermakna, menarik dan lebih difahami murid-murid. Pembezaan dalam pengajaran penting agar setiap murid dapat belajar dengan lebih berkesan. Dua kaedah yang dicuba ialah Think-Tac-Toe dan RAFT yang bermakna Peranan (Role), Audien (Audience), Format (Format) dan Topik (Topic). Kedua-duanya dapat digunakan dalam bilik darjah dengan menyesuaikan pengajaran mengikut topik-topik di dalam buku teks Mekar.

2. Tujuan Kajian

Kajian ini bertujuan untuk:

1. menekankan pentingnya guru menjalankan pengajaran pembezaan bagi memenuhi keperluan pembelajaran murid yang mempunyai latar belakang, keupayaan dan kesediaan yang berbeza.
2. membantu guru lebih yakin dan tahu cara melaksanakan pengajaran pembezaan;
3. meneliti keberkesan kaedah Think-Tac-Toe dalam pembelajaran murid; dan
4. meningkatkan penulisan murid dengan menggunakan kaedah RAFT.

3. Pernyataan Masalah

Penulisan sering menjadi satu cabaran bagi murid. Murid-murid secara umum kurang berminat dalam penulisan kerana mereka dapat jangkakan bentuk penulisan yang perlu ditulis, iaitu penulisan berpandukan gambar. Murid-murid kurang didedahkan kepada penulisan kreatif oleh kekangan yang dinyatakan lebih awal. Selain itu, murid mudah bosan dengan kertas latihan yang guru berikan kerana terlalu banyak komponen yang perlu diselesaikan. Tahap kesediaan murid pula kurang diambil kira apabila guru memberi latihan kepada murid-murid. Oleh itu, dengan pendekatan pengajaran pembezaan, diharapkan murid dapat menggarap pengetahuan, menyelesaikan latihan mengikut kesediaan mereka dan memilih sendiri latihan yang mereka mahu lakukan.
4. Kajian Lepas


5. Kaedah Kajian

Kajian ini memberikan tumpuan pada pengumpulan data yang berupa maklum balas murid. Selain itu, hasil pemerhatian guru turut dijadikan data dapan kajian. Memandangkan kajian ini dilakukan bagi setiap murid, pemerhatian guru dan temu bual diberikan penekanan untuk mendapatkan data. Waktu Professional Development, iaitu pembangunan profesional diperuntukkan bagi guru untuk merancang pengajaran dan meneliti bahan pengajaran. Selepas pengajaran dilakukan, guru akan memeriksa maklum balas dan menganalisis data yang dikumpulkan.

5.1. Subjek kajian

Subjek kajian terdiri daripada semua murid yang mempelajari bahasa Melayu dari Darjah 1 hingga Darjah 6. Lapan orang guru bahasa Melayu terlibat dalam kajian ini. Lapan orang guru menjalankan kaedah *Think-Tac-Toe* dalam penggal 1 dan 2 sementara dalam penggal 3 dan 4, semua guru menggunakan kaedah R.A.F.T dalam pengajaran mereka.

5.2. Instrumen kajian

Strategi *Think-Tac-Toe* dan R.A.F.T ini digunakan sebagai instrumen kajian. Guru mendapatkan maklum balas murid dengan membuat tinjauan yang melibatkan murid memberikan pendapat mereka tentang kaedah yang digunakan oleh guru.

5.3. Prosedur kajian

Sebelum kaedah ini dijalankan di dalam kelas, guru diberikan latihan tentang cara-cara menggunakankannya. Guru-guru diberikan bimbingan secara amali dan diberikan contoh-contoh untuk menyusun soalan dalam grid 3 x 3 seperti permainan *tic-tac-toe*.


sempurna boleh diberikan dalam format yang biasa apabila murid sudah memahami sepenuhnya petikan yang dibaca. Contoh soalan seperti dalam Jadual 1.


Guru boleh memulakan pelajaran dengan menayangkan video atau mana-mana bahan rangsangan yang boleh dijadikan topik pembicaraan. Setelah pembicaraan dijalankan, guru memberikan murid peranan yang mereka ingin pegang, audiensnya dan juga format tugas berdasarkan topik yang telah dibincangkan. Sebagai contoh, murid Darjah 4 diberikan tugas soalan berikut:

‘Bayangkan kamu Leftenan Adnan. Tuliskan surat kepada rakan kamu di kampung tentang pertempuran yang kamu hadapi.’

Melalui topik soalan yang diberikan, murid diberikan peranan sebagai Leftenan Adnan, audiensnya ialah rakan sekampung, formatnya ialah surat dan topiknya ialah tentang pertempuran yang telah berlaku. Justeru, murid harus menulis mengikut RAFT yang telah diberikan.

6. Dapatkan Kajian dan Perbincangan

Dapatkan kajian menunjukkan, berdasarkan pemerhatian guru terhadap respons dan pelibatan murid dalam kelas serta tugas yang dihasilkan oleh murid menunjukkan kesan yang menggalakkan. Murid lebih terangsang dan memahami cara menjawab soalan-soalan yang diberikan.

Murid juga menunjukkan sikap yang positif menggunakan kaedah Think-Tac-Toe dan RAFT dalam pembelajaran. Hasil pemerhatian ini menunjukkan bahawa strategi ini membawa kesan yang amat baik. Murid memberikan maklum balas yang positif pada kedua-dua kaedah tersebut. Murid yang lemah juga dapat belajar mengikut tata cara keupayaan mereka.

Refleksi murid juga didapat amat memberangsangkan. Rata-rata murid berasa seronok melihat hasil kerja mereka dimuat naik ke dalam blog dan dapat membaca penulisan rakan yang lain. Dengan berkongsi hasil kerja mereka, murid dapat melihat contoh hasil kerja yang lebih baik dan boleh menjadi panduan kepada mereka.

Guru juga berpendapat kaedah Think-Tac-Toe telah membina keyakinan murid untuk menjawab soalan kefahaman kerana mereka diberikan pilihan untuk menjawab soalan. Soalan yang dilakukan dalam permainan Think-Tac-Toe juga pelbagai dari aspek tahap kepayahannya supaya semua murid yakin menjawabnya.

Selepas menjalankan kaedah RAFT, guru mendapati bahawa penulisan murid lebih kreatif dan murid menulis secara sedar akan kehendak situasi yang dibentangkan kepada mereka. Daripada hasil kerja murid, guru mendapati bahawa kenyataan murid menulis dengan lebih memahami proses penulisan dan lebih fokus.

7. Kesimpulan

Kaedah Think-Tac-Toe dan RAFT jelas memberikan kesan yang positif terhadap pembelajaran murid dan pada masa yang sama menimbulkan keseronokan. Dengan melaksanakan kedua-dua kaedah ini, keyakinan guru telah dapat ditingkatkan dan dapat menjalankan pengajaran pembezaan dengan lebih berkesan. Guru-guru lebih peka dengan profil murid, kesediaan dan cara pembelajaran mereka Murid-murid pula lebih berminat untuk mengambil bahagian dalam aktiviti di dalam kelas dan lebih yakin menjawab soalan-soalan yang lebih mencabar.

8. Penghargaan

9. **Rujukan**


Explicit Phonetic Instruction in Pronunciation Teaching and Learning in Higher Education Settings: The Case of Voiceless Dental Fricatives /θ/ and Rhotics /r/ For Chinese Learners of English

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Abstract: In the development of effective pedagogy in English language classrooms, little attention is given to pronunciation teaching and learning, especially in higher education settings in Malaysia. This paper attempts to explore this issue by investigating the pronunciation of Chinese learners of English after receiving an explicit instruction in English phonetics. The subjects were undergraduate Chinese students of Universiti Utara Malaysia (UUM) who were grouped according to their countries of origin, i.e., Malaysia and China. 20 participants were recruited for this study and these participants had two distinct learning backgrounds: [1] English as a second language (ESL) for the Chinese participants from Malaysia; and [2] English as a foreign language (EFL) for the Chinese participants from China. The target phones were voiceless dental fricatives /θ/ and rhotics /r/ that are known to be problematic for both groups of Chinese speakers learning English. The participants’ production of the target phones was measured in a pre-test and post test design using a word-list reading task and technology-enhanced materials, i.e., computer-assisted language learning (CALL). The findings revealed that explicit phonetic instruction facilitated effectively in speech learning improvement. This empirical data will be seen as a contribution to SOTL research in pronunciation teaching and learning.

Keywords: Explicit phonetic instruction, Chinese learners, CALL

1. Introduction

Miscommunication often occurs among second languages (L2) learners who have inadequate phonological awareness in communication (Plakans, 1997; Gravois, 2005). An L2 learner should be able to identify and use the linguistically significant phonemes of the language appropriately in order to avoid miscommunication and unintelligibility resulting from inadequacy of phonological awareness. For instance, there are common problems among Chinese learners of English who cannot differentiate certain sounds in minimal pairs in English. For example, the word think versus sink (voiceless dental fricatives versus voiceless alveolar fricatives), and rice versus lice (rhotics versus laterals), which can potentially hinder communication process. These problems may be prevented or remedied by explicit phonetic instruction on phonemic distinction in L2 sounds. Phonetic instruction emphasises the differences between learners’ first language (L1) and L2 phonological systems with regard to phonemic inventories, articulation of analogous phones, grapheme-phoneme correspondences and phonological processes.

Explicit phonetic instruction is a central method used in ESL classroom, especially in pronunciation teaching and learning. Explicit instruction is an emphasis on the phonetic parameters relevant to the segmental sounds (i.e., isolated consonants and vowels) which are illustrated with drawings (e.g., Clark, 1967) or animated diagrams of the vocal tract and waveforms and spectrograms produced with acoustical analysis software (e.g., Lord, 2005). DeKeyser (2003) maintained that “an instructional treatment is explicit if rule explanation forms part of the instruction (deduction) or if learners are asked to attend to particular firms and try to find the rules themselves (induction)” (p.321).
Pronunciation practice varies considerably from word reading to jazz chants, and feedback varying from teacher-fronted pronunciation modelling to the visual and individualised feedback provided by acoustical analysis software packages. All these exercises, in addition to the core component of explicit lessons, have been thought to facilitate acquisition of target-like L2 pronunciation (Arteaga, 2000; Elliott, 2003).

The extent to which targeted instruction helps learners improve their L2 accent is still an empirical question. While the amount of general language instruction does not seem to affect global accent (Piske, MacKay, & Flege, 2001), pronunciation instruction has been shown to improve L2 production accuracy (Neufeld, 1977; Piske et al., 2001) in L2 as well as foreign language contexts, including English (Pennington & Richards, 1986), French (Clark, 1967; Walz, 1980), German (McCandless & Winitz, 1986; Moyer, 1999), and Spanish (Elliott, 1995, 2003; Lord, 2005), leading some researchers to suggest that most adult L2 learners do not achieve native-like pronunciation without the help of explicit instruction (Bon-gaerts et al., 1997; Fullana, 2006). Drawing learners' attention to particular acoustic features of the L2 system, even briefly, seems more expedient than merely exposing them to L2 sounds in the hope that they will discover those relevant acoustic features for themselves (Wipf, 1985).

The present study evaluated the effectiveness of explicit teaching of English phonetics. Other researchers have examined various elements and methodologies of pronunciation instruction. Chung (2008) compared explicit, implicit, and noticing instruction for improving Chinese learners' production of English word stress and found that all groups improved equally on the post test, but the explicit group was significantly better in the delayed post test. It seems particularly relevant to question the effectiveness of explicit instruction in phonetics because it is precisely this element of pronunciation instruction that is least appealing to those who view it as overly form-focused and in opposition to their communicative, meaning-focused methodology (see discussions in Arteaga, 2000, and Morin, 2007) and argue that pronunciation instruction needs to be better integrated into communicative activities (Isaacs, 2009). Alternatives for bringing learners' attention to the L2 sound system, perhaps through targeted exposure, focused listening, dictation, transcription, or other means, should be explored and weighed against the potential benefits of explicit phonetics instruction.

2. **Research Methodology**

**It's Fry Not Fly: English Pronunciation Tutorial (IFNFEPT)** is newly developed software that helps learners pronounce target sounds correctly. The idea of developing this software is to integrate the use of technology in English classroom, such as videos, games and practices, or in other words, using multimedia elements in language teaching in order to make the teaching and learning more interesting. The researchers used the ADDIE design model (Molenda, 2003) in order to build and develop the software. The reason of using the ADDIE instructional design model was because it was simple and clearly depicted the phases involved in the development of IFNFEPT. There were five main phases in ADDIE Model which were the analysis phase, design phase, development phase and evaluation phase. The IFNFEPT software development process based on the ADDIE model is summarised in Fig. 1.

2.1. **Phase 1: Analysis**

In this phase, researchers built an understanding on the needs of the software users, developing and building the software content, the goals of the software, the strengths and the weakness of the software. The problems of pronouncing target sounds were identified so that the software could help solve the pronunciation of the sounds. The target group of the software was Chinese learners of English from Malaysia and China who have problems in pronouncing the /θ/ and /r/ sounds. Therefore, the topic or content chosen
for this software was the introduction to English phonetics and the target sounds, which included the native speaker’s way of pronouncing the /θ/ and /r/ sounds.

2.2. **Phase 2: Software design**

The design phase was implemented after the analysis of needs and contents were completed. At this phase, the learning and teaching materials related to phonetics and the target sounds were put into sequence and arranged accordingly. The researchers used International Phonetic Alphabet (IPA) charts, video tutorials and also hands-on practices as the teaching aids included in IFNFEPT. There were three modules included in IFNFEPT, which was built using Microsoft Words as a basic illustrator or a storyboard for the software.

![Software Design Diagram](image)

2.3. **Phase 3: Software development**

Development refers to process of developing IFNFEPT software. This software was developed and produced by integrating existing applications such as authoring, graphics, audio recordings, video tutorials and other interactive functions. This software was developed with the help from a multimedia company, Hiblox Sdn. Bhd. situated in Sibu, Sarawak. During this phase, a lot of instructions were given to the module...
developer in order to get the best product ready for testing. Many fixing and tuning processes were done at this stage. The combination of the provided materials and the soft skills possessed by the experts complemented each other in developing the software.

2.4. Phase 4: Implementation

The IFNFEPT software was presented in its actual form to 20 users to test its effectiveness and smoothness. Through this implementation, the researchers were able to detect any problems in the software and were able to improve the software for future users. The researchers were able to identify any problems that might be overlooked during its development. This would allow the researchers to identify the weakness of the software and its quality before it was officially released or being set in websites.

2.5. Phase 5: Evaluation

The evaluation process involved getting feedbacks, opinions and reviews from users. This process was completed by 20 participants who were from China and Malaysia. The participants were Chinese learners of English. The evaluation process was useful to ensure that the software was effective and enabled the researchers to evaluate the sustainability of the software’s design, content, text, colour and audio. This process also helped the researchers to measure the practicality of the practices and tutorial in this software, whether they were too redundant or not.

3. Research Findings

Discussed below are the parts developed in the IFNFEPT software.

A. Software Title Display

Title display (see Fig. 2) was the main display that users first saw when they opened the software. The welcome homepage displayed the IFNFEPT title, the welcome messages, the outline of the tutorial, and acknowledgement. From the homepage, participants were able to know the subject matter and the focus of each module.

B. Module 1: Introduction Display

After the participants were briefed on the reasoning of the title display, they were directed to Module 1: Introduction page (see Fig. 3). Here, the participants were explained on the objectives of Module 1 and its focus. There were five parts in this module which focused on the introduction of phonetic symbols such as the vowels and consonants sounds, the articulators, the different target sounds and their substitutions, and the practices of listening and voice recording. There were three modules in the IFNFEPT and each module presented the same introduction page with different focus and objectives.

C. Module 1: Introduction of Phonetic Symbols

International Phonetic Alphabet (IPA) Chart was introduced to the participants who mostly saw the symbols for the first time (see Fig. 4). This chart was very interactive in which the participants were able to listen to each sound of the symbols when they clicked on the symbols. This chart was adopted from British Council website and was fully used to let the participants try and listen to the sounds and clicked on the examples.

D. Module 1: Consonant and Articulators Display

On the next page, page 2, participants were directed to the introduction of consonants and articulators (see Fig. 5-6). The articulators were labeled for each part to let the participants be informed. Here, the participants were also directed to watch a video on organs of speech and their functions.
It’s fry, not fly: English Pronunciation Tutorial

Introduction

This tutorial is designed for those interested in English pronunciation. It consists of three modules: Introduction to English Sounds, Module 1 Introduction Display, and Module 3 International Phonetic Alphabet (IPA) Chart. These modules are intended to help learners understand the pronunciation of English words and improve their speaking skills.

Module 1: Introduction

At the end of the module, the participants will be able to:

1. Recognize English phonetic symbols and their sounds.
2. Identify and produce the major phonetic sounds in English.

Module 2: Module 1 Introduction Display

This module focuses on English phonetics, the study of speech sounds. We will cover the International Phonetic Alphabet (IPA) chart, which represents English pronunciation using symbols.

Module 3: International Phonetic Alphabet (IPA) Chart

The International Phonetic Alphabet (IPA) is a system of symbols used to represent the sounds of spoken languages. It is widely used in linguistics for the description of the pronunciation of words in English.

Acknowledgments

This tutorial was developed by Michael M. Asiah and Orisagbe E. Osagie. It is part of the Scholarly Teaching Project (STLP) grant. The Jhulaon retired from teaching and is currently working on developing this tutorial for the benefit of English language learners.

Fig. 2: Software Title Display/Homepage

Fig. 3: Module 1 Introduction Display

Fig. 4: International Phonetic Alphabet (IPA) Chart
E. Practice Display

In each module, there was a section where the participants were able to listen to the native speaker’s pronunciation of minimal pairs, and then they were able to record and playback the recording in order to listen and compare their pronunciation with the native speaker’s pronunciation (see Fig. 7). This type of practice was presented in each module, according to the focus on each module.
**F: Modules 2 and 3 – the /θ/ and /r/ tutorial display**

For Modules 2 and 3, participants were directed to watch tutorial videos on the /θ/ and /r/ sounds (see Fig. 8). In these videos, a native English speaker demonstrated the accurate way to pronounce the sounds and provide examples and explanation on the target sounds. Here, the participants had the opportunity to watch, listen and practice verbally to pronounce the words.

![Fig. 8: The /θ/ and /r/ video tutorials](image)

**G: Modules 2 and 3 – Listen and Click Practices**

For Modules 2 and 3, there was a session where the participants were required to do the listening practice (see Fig. 9). This practice required the participants to click and listen to the words being pronounced, and then, they had to choose the right words which were represented by the voice. After they had chosen the answers, they clicked on the ‘check your answer’ button to see the right answers.

![Fig. 9: Click, Listen and Choose Practice](image)

**H: Tongue Twisters and Poem Recital Games**

In Modules 2 and 3, there were tongue twisters and poem recital games based on each focus (on the target sounds) in the modules (see Fig. 10 & 11). The participants were required to say the tongue twisters out loud after listening to the native speaker’s demonstration. While reading the tongue twisters and poem aloud, they were required to record their voice by clicking on the record button before they started.
The implementation phase was done when 20 participants explored and tested the IFNFEPT. These participants were given enough time to explore the IFNFEPT and were given a set of questionnaire after they had finished exploring. Evaluation phase was done on the content prepared, the practicality of the practices and the modules itself, whether the software was easy to use and understand, and whether the software helps to enhance their pronunciation of the target sounds or not. The items in the questionnaire used the five-level Likert Scale: 1 = Strongly Disagree, 2= Somewhat Disagree, 3= Neither Agree nor Disagree, 4= Somewhat Agree, and 5= Strongly Agree. Research findings are shown in Table 1.

**TABLE 1: User Opinions on the IFNFEPT Software**

<table>
<thead>
<tr>
<th>Items</th>
<th>Statement</th>
<th>Mean</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>These modules are easy to understand and follow.</td>
<td>4.55</td>
</tr>
<tr>
<td>2</td>
<td>These modules are boring.</td>
<td>1.4</td>
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<tr>
<td>3</td>
<td>These modules help me a lot in improving my English pronunciation on the target sound /r/.</td>
<td>4.5</td>
</tr>
</tbody>
</table>
I can pronounce the target sound /θ/ correctly after learning from these modules. 4.65

These modules do not enhance my knowledge on English sounds. 1.25

I’m not interested in learning English phonetics. 1.25

The videos in the modules are interesting. 4.2

I don’t like the practices in the modules 1.25

These modules are not suitable for Chinese learners of English. 1.6

I would recommend my English teachers to use these modules in their classrooms. 4.35

<table>
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<tr>
<th>QUESTION/PARTICIPANT</th>
<th>Q1</th>
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<th>Q3</th>
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Mean 4.55 1.4 4.5 4.65 1.25 1.25 4.2 1.25 1.6 4.35
Based on Tables 1 and 2, for Question 1, 12 participants strongly agreed that these modules were easy to understand and follow; 7 participants somewhat agreed and only 1 participant was not sure about it. For Question 2, 14 participants strongly disagreed that the modules were boring; 5 participants chose to somewhat disagree and only 1 participant chose to somewhat agree with the statement. When it comes to Question 3, 12 participants strongly agreed that these modules help them a lot in improving their English pronunciation on the target sound /r/; 6 participants somewhat agreed and 2 participants chose to neither agree nor disagree with the statement.

Question 4 tested whether the participants could pronounce the target sound /θ/ correctly after learning from these modules; 14 of the participants strongly agreed, while 5 participants somewhat agreed and only 1 participant was not sure with the statement. For Question 5, 16 participants strongly disagreed with the statement that suggested these modules did not enhance their knowledge on English sounds; 3 participants somewhat disagreed and only 1 participant was not sure. When it comes to Question 6, 15 participants strongly disagreed they were not interested in learning English phonetics; 5, however, somewhat disagreed. Question 7 stated the videos in the modules were interesting and this statement was strongly agreed by 7 participants and somewhat agreed by 10 participants; 3 participants were not sure with the statement.

For Question 8, 16 participant strongly disagreed that they did not like the practice in the module; 3 participants somewhat disagreed and only 1 participant was not sure with the statement. Question 9 stated that these modules were not suitable for Chinese learners of English and this was strongly disagreed by 13 participants; 5 somewhat disagreed, and 1 participant strongly agreed, and only 1 somewhat agreed. The last Question 10 asked the participants to recommend their English teacher to use these modules in their classroom; 11 strongly agreed, 5 somewhat agreed, and 4 neither agreed nor disagreed.

4. Conclusion

From the findings, IFNFEPT software helped enhance the pronunciation of English target sounds and the participants could easily explore and follow the tutorial in the software. Most of the participants found it interesting and some of them would recommend this software to be used in English classrooms. Its effectiveness of helping learners to enhance their pronunciation of the target sounds were evident from the questionnaire responses and also from their improvements in the word-lists reading session. However, there are many things that need to be improved and fixed in the software that may polish its potential in helping L2 learners in the future, before it is officially established and published.

5. Acknowledgements

This tutorial was designed by researchers from Universiti Utara Malaysia (UUM). It was part of the Scholarship of Teaching and Learning (SoTL) grant provided by UUM (S/O Code: 13392). The project was led by Dr. Mohd Hilmi bin Hamzah (hilmihamzah@uum.edu.my) and assisted by Ms. Nurul Mardhiah Mohd Nashuha (mardhiahnashuha@gmail.com). We would like to thank Hiblox Sdn. Bhd. for developing this tutorial for the benefits of English language learners.

6. References


How Does Teach for Malaysia’s Student Learning Vision of Empowerment Translate into Classroom Practice?

Yeong Ru Wong and Nadia Ezzat

Teach For Malaysia

Abstract: Teach for Malaysia strives towards the vision: ‘One Day all children in Malaysia will have the opportunity to attain an excellent education’. But how do we make this possible for all children? What opportunities are required and what is an excellent education in our context? Over the past 5 years, TFM has gathered data on impact and outcomes on the students we serve to understand better. Notably, TFM has implemented a bi-annual student survey, ‘Tripod’, developed by Harvard University using years of research on teacher effectiveness, supported by the Bill and Melinda Gates Foundation and in partnership with the global education group Teach for All. The survey asks students to evaluate their teachers practice based on statements that measure the effectiveness of the teacher; the results of which equips teachers to be able to evaluate and improve their practice by correlating the survey findings with their classroom observations and student achievement data. In addition to this, TFM met with students, parents, teachers, community leaders and the wider educational landscape to develop a contextualised Student Vision for all children in Malaysia, focusing on key areas of student voice, values and capabilities. This has translated into key tools for classroom observation and development trackers to support Fellows to lead their pedagogical development as a reflective practitioner. This study shares the principles and findings of this research, and why we feel student empowerment sits at the heart of our work on nation-building.

TFM Fellow/LDO numbers

| Ratio of LDO to Fellows | 1:13 |
| % Fellows who stayed in teaching (Teaching Alumni) | 35% |
| Total number of fellows | 301 |

1. Introduction

TFM is founded on the vision of all children having the opportunity to attain an excellent education. This inevitably raises the questions: what is an excellent education in the context of a system that is actively trying to transform itself? How can we move towards a new criteria of success, which both keeps us accountable and takes on board the interests of the communities we were trying to serve? This paper outlines the process through which TFM has tried to address this challenge and what we have learnt from the process.

The first essential step in our research was to develop a locally contextualised vision of what an ‘excellent education’ would really look like in Malaysia. As our remit was cross country and in band 4-7 schools, we also realised that we needed to fully understand what ‘disadvantaged’ meant in our context in order to make a real difference. This was a real challenge, as ‘little continues to be known about what actually happens in classrooms, particularly from a national perspective,’ (Tee, Samuel, Nor & Nadarajan, 2016). In light of this, we conducted an in-depth research in communities around the country, in order to establish what Malaysian citizens felt they needed in education to succeed in life. As students were key stakeholders, we knew that we needed to reach out to them and their families. We conducted interviews and focus groups with students, parents and communities; we wanted to speak to the beneficiaries of the education as often they are the ones not spoken to, and yet they are the ones most affected. We also consulted school staff, shadowed students in schools and
sought the opinions of community leaders. In addition, we used our global network research, data on student impact and outcomes, as well as the Malaysian Education Blueprint 2013-2025, in order to really determine what Malaysian students needed.

What we discovered throughout our investigation, was that as in many developing education models globally, the Malaysian education blueprint strives to shift the focus of excellent education from merely grades to the holistic development of the child. But school systems still remained focused on passivity and grades (typically leading to outcomes around textbook knowledge and memory); and this came in direct contrast to the stakeholder feedback from students to local government officials, who described wanting the success of children to include more ownership, active engagement, collaboration and self-initiative.

This desire for student agency showed us that ‘an excellent education’ in a disadvantaged Malaysian context is about having voice, values and capability and hence we created our Student Vision (Fig. 1).

![STUDENT VISION](Fig.1: TFM Student Vision)

Our TFM Student Vision: A Malaysia where all children are empowered to be leaders of their own learning, their future and the future of Malaysia.

Student leadership and empowerment therefore, is the core of our work at TFM; it is this that we believe will ultimately improve the future of this country and make a difference to the lives of our children. ‘Success in life requires the capacity and propensity to take purposeful action. In other words, it requires agency’ (Ferguson, Phillips, Rowley, & Friedlander, 2015).
2. What is the Student Vision about?

Before we examine how Teach for Malaysia has begun to work on achieving this vision, let’s explore the concepts of student leadership and empowerment in more detail, to establish what that reality would look like for our students in classrooms and schools on a daily basis. ‘Empowerment’ is about giving our students the permission, power and the right to do something; it is about giving them the confidence and strength to act; by enabling them to increase their control over their own life. This then makes them ‘leaders; those who are leading their classrooms, schools, and eventually the nation. At its heart it is about making pupils active participants in their learning, rather than recipients. This concept is also well known globally as the key to a successful future, “the more we increase the active participation and partnership with young people, the better we serve them. And the more comprehensively we work with them as service partners, the more we increase our public value to the entire community” (Carmen Martinez).

We have translated these concepts into our TFM Student Learning Vision (Fig.2) in order to understand further what this would look like in classrooms. In a classroom where the students’ outcomes are manifested, we would expect our students to say, ’I know what I have learned so far and where I am now. I know what I want to learn and I am aware of how much I need to progress. I know who can help me and what I can do to get to where I want to.’ This student centred vision has become the cornerstone of our work, our vision for the classroom and our for fellowship programme.

![Fig.2: TFM Student Learning Vision](image)

The aim of this study, therefore, is to explore how this vision of student empowerment and agency translates into classroom practice and to examine the tools and strategies that we believe are effective in building this culture across the nation.
3. Achieving our Student Learning Vision

Once our Student Learning Vision was articulated, an observation rubric to assess classroom and teacher alignment with this vision was then required. Teacher observation as we know, is one of the key methods through which we assess the quality of teaching, and in turn, learn how to develop our practice further. There has been extensive research to evidence this over the last few decades, but the quality of the observation tool used and the subsequent feedback from the observer can make a real difference to the outcome. TFM used a teacher observation rubric for this purpose starting originally as the Guru Cemerlang Rubric and then made into the Fellow Cemerlang Rubric in 2015. This initial development to the tool was brought about by research on ‘Teaching as Leadership’ (Steven Farr, Teach for America) where the role of the teacher extends beyond classroom practice but into leadership of change. The framework supports educators to be leaders in their classrooms and schools, gives clarity on what it means to be an effective teacher, describes key elements of practice and provides a clear vision of success. We used the research from this well regarded global theory and, in turn, combined the aspects of the Teaching as Leadership framework into our existing Fellow Cemerlang rubric.

This rubric, however, still did not represent the specific needs of students in the Malaysian disadvantaged context; we required a tool that would tell us explicitly whether our Student Learning Vision was being realised in classrooms on a daily basis; a tool that was fully aligned with what are aims are. Thus, we worked on creating a rubric with the Student Vision and Student Learning Vision as the central-focus. We kept the visual familiarity of the Guru and Fellow Cemerlang for buy-in from our stakeholders, but this new rubric was aligned with our visions and described what we wanted to be visibly seen and explicit in classrooms from our teachers. The First three aspects of the rubric were original but the others created by us; most recently, we added the ‘Presentation’ aspect, as this was the element that describes how the teacher behaves in the classroom and facilitates learning in ways that enable student leadership and empowerment. Our SLV Rubric can be accessed via the below link.

https://docs.google.com/spreadsheets/d/1_6V1ZRSafshFpB6jaZL4ordRAhU8zoCOUcjaK7gi1Cw/edit#gid=0

Our SLV Rubric forms a core part of how we are working to achieve our vision on a day to day basis; we use it to inform our Pre-Service Programme, our LDO training and to inform our continuous fellow development.

4. Measuring our Progress

It was then clear that we needed a form of evidence that could bolster and measure this type of approach, in particular bridging the local context with global standards.

One of our most utilised tools that measures student outcomes in recent years is the Tripod Survey, a tool that was developed by Harvard University, using years of education research. This tool surveys students on several key categories of teaching and learning, known as the 7Cs: care, confer, captivate, clarify, consolidate, challenge and classroom management (Ferguson et al., 2015). Tripod is highly regarded globally and is endorsed by the Bill and Melinda Gates Foundation who carried out research on The Measures of Effective Teaching Project wherein it was discovered that the Tripod is a highly effective way to measure teacher effectiveness, ‘teachers’ student survey results are predictive of student achievement gains.’ This offers huge potential; if Tripod surveys are implemented early enough in the academic year, teachers can shift their practice as necessary and make immediate improvements to student performance.

Of course, there are inevitably challenges that we continue to face with student surveys and these challenges tie in with the very heart of our work at TFM. Students in Malaysia as we know, ‘are generally not accustomed to completing surveys or to giving their opinions on the quality of their
teacher.’ (TFM LD Focus Group on Tripod, 2017) At times, this makes them feel uneasy and in turn, may affect their survey responses. It is imperative, however, that we endorse these surveys as a key part of measuring progress, as we know that they are an extremely meaningful tool for teacher feedback. The Measures of Effective Teaching Project also confirmed that, ‘students know an effective classroom when they experience one’ but beyond that, ‘student surveys produce more consistent results than classroom observations or achievement gain measures (Kane & Cantrell, 2010). These are powerful findings that have informed us that these surveys can be used as an extremely effective tool to improve teacher performance. In light of this knowledge, we need to ensure that we continuously and consistently encourage voice, agency and leadership in our classrooms so that our students are empowered to give us meaningful feedback.

For TFM, Tripod is paramount; in itself, it promotes student empowerment as it is based solely on student voice and opinion. It also informs TFM and our fellows of areas of classroom practice and the programme as a whole that need to be developed further. In addition, the individual teacher is empowered, having their pupils directly speaking out directly to them allows them to take action immediately.

The data we collect from Tripod is something that we use in our everyday work at TFM; our LDOs use the language and format of the survey (7Cs) to lead coaching conversations with fellows. In addition, we analyse the metadata in order to determine what elements we want to change within our Pre-Service Programme, LDO support and fellowship design. Additionally, the fact that Tripod is a recognised and widely used tool all over the world, means that it is something that truly supports our education to be world class and allows TFM to share our best practice globally too. Teachers and schools using Tripod also have access to reflection questions and simple and applicable classroom strategies that they can use to improve their daily practice in each category of the survey. Here are some outlined below from the category ‘confer:’

4.1 Reflection questions
Consider these questions as you reflect on your classroom practice:
• How often do you invite students to share their ideas and opinions in the context of learning activities? • How often do you ask students to answer questions or solve problems together and discuss their responses? • How do you ensure that all students have opportunities to express their views? • How do you model respect for diverse viewpoints? • How do you respond when students ask unclear or unexpected questions or share divergent views? • How often do you provide students with opportunities to share their thoughts about how learning activities should proceed? • How often do you seek feedback from students about the effectiveness of learning activities?

4.2 Sample strategies
Try implementing teaching strategies like these in your classroom:
• Establish and model expectations for respectful classroom exchanges, especially in the context of disagreement. For example, ask students what respectful communication looks like, sounds like, and feels like. • Incorporate small group and whole class discussions into learning activities. • Invite students to share their views about how to structure specific learning activities or how to handle classroom dilemmas. • Ask students to give each other feedback about how their work meets established criteria.

5. What the data has revealed so far
Our data on Tripod shows us our progress in comparison to other Teach For networks, but most importantly, it tells us the areas in which are teachers are succeeding in the classroom and the areas in which more training and development is required. We have shown below as an example, our highest and lowest scores within Tripod from 2016, using the two categories, care and classroom control. These two are in fact, the key areas to focus on, as recommended by Harvard University as the basis of effective teaching (Ferguson & Danielson, 2014). What we can see here is that we are scoring highly on the ‘care’ category, which tells us that our relationship building is having a positive effect on our students learning. Classroom Management, however, is an area where we need to improve in
order to provide the best opportunities for our students. We use our Tripod data in partnership with the SLV Rubric to enable us to gather a full picture of our progress towards achieving our student vision of empowerment and leadership.

Fig. 3: Tripod Score for the Control Category

Fig. 4: Tripod Score for the Care Category
6. How we aim to use the tools to investigate further

This year we will continue to analyse the SLV Rubric observation data and Tripod data in a variety of ways in order to measure our progress towards our Student Vision and make developments accordingly. We are training fellows to now carry out more than one Tripod survey per year in order to elicit feedback sooner. Fellows will also now begin to input their Tripod scores into our new Fellow Development Tracker and use their respective Professional Learning Communities (PLCs) to get share the learning on the data and discuss best practice. We are also leading focus groups with LDOs to find out what student behaviours and teacher behaviours are observable in classrooms demonstrating the aspects of the SLV rubric. We will then break down these behaviours into simple teaching strategies to support our fellows in these areas. The constant use and development of these tools are providing valuable opportunities to achieve our visions.

7. Moving Forward

As we have seen, the combination of Teach for Malaysia’s student surveys and teacher observation tool, is core to realising our vision of empowerment and leadership. Going forward, we aim to see empowered teachers in classrooms across Malaysia using this data to constantly reflect and improve their classroom practice. Effective teachers will then, in turn, have a positive impact on academic results and student agency will improve. In order to really transform the future lives of our students, however, we not only need highly reflective practitioners, we also need schools and ministries to enable this transformation. Student agency needs not just to be recognised by this nation, but to be fundamental to success in the Malaysian education system. In other words, if our examinations continue to assess memory and knowledge, in what ways are we valuing skills? TFM sought to define and implement a transformational vision for educational excellence, which is grounded in the views of the students and communities we seek to serve. But the only way we can truly achieve this vision is if we are united.

9. References


Improving Critical Thinking Skills among Accounting Students through Coaching Approach

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Abstract: Critical thinking is the skill to think evidently and reasonably about what to do or to have confidence in which involve in reflective and independent thinking. Realizing that the importance of critical thinking skill to accounting student, the researcher do a study to improve the skills by using one of the effective learning tool, which is coaching approach. Coaching approach is a method that directly involves the learner, by actively encouraging them to do something in order to achieve their goals. A culture of mentoring and coaching will, over time, have an impact on young people and their learning. The approach can increase reflectivity and clarity of thinking, improved psychological wellbeing and confidence and better problem-solving skills or decision-making. This study employed action research with the use of ‘Grow Coaching Model’. A management accounting students comprised of 29 participants were under studied. The instrument used to measure the attitude of critical thinking skills is Universiti Utara Critical Thinking Skills Rubric. In this study, the researcher’s reflection and observation checklist was used to gather data throughout the intervention. This provides information of changes /improvement on how well the students develop critical thinking skills ability, reaction and understanding. Results showed that students’ critical thinking skill are enhanced through coaching approach. Effective bonding/closeness between student and lecturer as well as longer time per student are needed to make this approach successful.

Keywords: Coaching approach, Education, Action research.

1. Introduction

In the higher education institutions, effective teaching and learning is an important topic of discussion among the educators to ensure the students get the best learning experience and outcome from the sessions. Researchers in the education field have developed variety of teaching strategies to facilitate the achievement of effective teaching and learning sessions. Among the strategies proposed are the cooperative learning (Johnson, Johnson and Smith, 1989), experiential learning by Kolb (2014), problem-based learning (Albanese and Mitchell, 1993), peer learning (Boud, Cohen and Sampson, 2014), spatial learning (Holley and Dansereau, 2014) and the most current strategies is digital learning through games. Using these various teaching methods, educators found variety of implications on students learning experience and understanding of the subjects under discussion.

Recently, Othman and Chia (2015) proposed another innovation to the teaching and learning strategies that is by applying a coaching technique into the teaching and learning session. Their study indicate that the teaching strategy have a positive effects on the students understanding and skill. However, studies on the integration of coaching model as a teaching strategy is very limited. Coaching is more popular in sports, medical and business industry compared to education. Therefore, this study aims to explore the effects of integration of a coaching model in teaching and learning to students’ critical thinking skills.
2. Critical Thinking Skills

Critical thinking is “the ability to think clearly and rationally about what to do or what to believe. It includes the ability to engage in reflective and independent thinking” (Lau & Chan, 2017). Critical thinking is important to students in providing them to become an excellent employee or entrepreneur because with the skills they are able to identify issue/problem in a complex situation and able to assess and justify the situation, able to think beyond boundaries at most times and to provide challenging views and able to make decision based on real solid evidence and to identify the source of evidence (Edwards, 2015; Flood, 2015; Facione, & Gittens, 2015; Whiley, Witt, Colvin, Sapiains Arrue & Kotir, 2017).

Braun (2004) suggests that “empirical assessment data on the success of techniques for developing critical thinking skills are minimal” (p. 235) and Sormunen and Chalupa (1994) stressed that “increasing pressure to produce employees who can think critically” (p. 172). The World Economic Forum issued a report (January 2016) "The Future of Jobs". It says:

“The Fourth Industrial Revolution, which includes developments in previously disjointed fields such as artificial intelligence and machine-learning, robotics, nanotechnology, 3-D printing, and genetics and biotechnology, will cause widespread disruption not only to business models but also to labour markets over the next five years, with enormous change predicted in the skill sets needed to thrive in the new landscape.”

Realizing that the importance of critical thinking skill to accounting student, the researcher do a study to improve the skills by using one of the effective learning tool, which is coaching approach.

3. Effective Learning Techniques

Learning is the lifelong activities for everyone to be successful our life. Therefore, an effective learning process is vital to ensure the learning process leads to its intended goals. Various techniques and strategies has been introduced and applied in the classroom to ensure effective teaching and learning activities. Discussing the issue of effective teaching requires us to firstly understand the definition and ultimate goal of teaching and learning. Atkins, Brown and Brown (2002) defined that teaching is an activity that concerned with providing students with opportunities to learn and the objective of learning are to gains knowledge and skills, deepening of understanding, the development of problem-solving and changes in perception, attitudes, values and behaviour. In addition, Brown also highlighted another important goal of learning that is to develop the capabilities to learn to the students. Clear understanding of these definitions will improve our understanding on the criteria for effective teaching and learning in our teaching and learning sessions.

The effectiveness of a particular teaching methods such as the experiential learning, problem-based learning and co-operative learning have been discussed by many authors. For instance, Albanese and Mitchell (1993) provide evidence on the impact of using the PBL on medical students. They found positive and negative impacts of PBL as a teaching method in a medical school setting. Their study shows that medical students who have gone through the PBL learning methods perform well on clinical evaluation and faculty evaluations. However, they scored lower on basic sciences examination; view themselves as less well prepared for the examination. The PBL students also tend to engage in backward reasoning rather than forward reasoning and appeared to have gaps in their cognitive knowledge compare to their traditional learners' counterparts. Slavin (2010) found that the positive impact of co-operative learning is depending on two key factors that are the availability of a clear group objective and the effective individual learning skill of every members. Kirschner, Sweller, and Clark (2006) categorised the experiential, problem-based and inquiry-based teaching as the less instructional teaching methods. They commented that these teaching methods as less effective to learners compare to the instructional or guided teaching methods. However, they did not provide any specific method that are considered as more instructional or guided methods.
Knowing the implication of these teaching techniques of students’ learning, this paper attempt to improve accounting students’ critical thinking skill by understanding the effectiveness integrating a coaching model that is the "G.R.O.W" model into the teaching activities on students ability to gains knowledge and skills among the accounting students in UUM. The implications of teaching on students’ ability to gain knowledge and skills is one of the outcome of teaching and learning activities mention by Atkins, Brown and Brown (2002).

4. Coaching

Coaching is defined by Whitmore (2002) as a technique to train or tutor others to “unlocking a person’s potential to maximize their own performance” (p8). Coaching helps a person to learn rather than teaching them.

CIPD (2009) define coaching as a technique used to develop a person’s skills and knowledge so that their job performance improves. Coaching activities usually lasts for a short period and focuses on specific skills and goals. Coaching is not a popular topic of discussion among educators as a teaching strategy. It is more popular and applied in the sports, business and psychology field of studies. However, a recent study by Othman and Chia (2015) supported the integration of coaching model into teaching activities. Their study shows that the coaching strategies in their teaching activities improved students’ understanding and skills.

4.1 Coaching models

There a few coaching models available in practice such as STRIDE, OSKAR and GROW models (Othman and Chia, 2015). Shaker (2012) highlighted three models that are the EQ, EXACT and GROW models. Among these, the GROW is more popular and widely used by coaches worldwide (Othman and Chia, 2015). According to Shaker (2012) the first coaching model is the EQ model that emphasized more on leadership while the GROW model is the core to coaching. This section will discuss only the GROW model as this is the model selected to be used in this study for its easy to understand and implement and suit with the learning process of accounting subject.

The GROW model.

The GROW model is developed by Sir John Whitmore (2002). Figure 1 below shows the cycle of the model.
Figure 1 illustrates the GROW model from Whithmore (2002). The coaching activities are categorised into four stages that are; the Grow, Reality, Options and Will. Each stages have its own goals. At the grow stage, the coach guided the coachees to identify what they want from the session. The focus is more on the solutions rather than problems. At the reality stage, the coachees need to review his or her current situations with regards to the topic under discussion. In the option stage, the coachees are guided to explore on the available options they have to achieve their intended goals and finally in the will stage, the coachees are helped to identify their own best options to achieve the goals.

This study suggested that this model can be integrated into teaching sessions as it is expected to drive the students to actively learn in class. In the Grow stage, teachers are expected to guide the students to understand the goals of the session for example to understand the learning outcome from the class. By setting this early in the class, students are expected to actively learn, process and able to evaluate their own learning from the class. In the second stage, the reality stage, teachers should help the students to understand their level of knowledge with concerning the topic. Understand their level of knowledge on the topic is expected to open up their mind on the wider reality of that knowledge that they can or should learn. Thirdly, in the options stage, teachers are expected to guide the students to search for alternatives or other relevant or comparable knowledge related to the topic under discussion. This is expected to develop students thinking skills in which they can make comparison and evaluations on the topic discussed. Finally, in stage will, teachers are expected to guide the students to make their own judgement or decision on the application of the knowledge in their daily activities as the product of knowledge learned from the class. Applying this strategy in class is expected to lead the students to actively learn, unlearn and relearn any topic and apply it for good reasons.

5. Methodology

This study employed action research. According to Mc Niff (2010), action research is done by the practitioner. It involves oneself thinking about and reflecting on his/her work. Action research is an enquiry conducted by oneself where the practitioner think about his/her own life and work. In action research report, it shows how practitioner has carried out a systematic investigation into his/her own behaviour, and the reasons for that behaviour. In this study, the lecturer observation, checklist and interviews were used by the lecturer/ researcher to gather data throughout the intervention.

A management accounting students comprised of 29 participants were under studied. In this study, the lecturer is acting or behave as if she is ‘the coach’ in the learning session. The instrument used to measure the attitude of critical thinking skills is Universiti Utara Critical Thinking Skills Rubric. In this study, the researcher’s reflection and observation checklist was used to gather data throughout the intervention. This provides information of changes /improvement on how well the students develop critical thinking skills ability, reaction and understanding. Students were asked to reflect on their experience and feelings and comments on the effectiveness of the teaching session based on the four GROW teaching stages.

Below were the phases/stages used in this study:

Phase 1: Beginning
Stage 1 – Grow – Before starting the session, students were asked to provide their ideas on the goal of the class (pre-assessment). The lecturer guided the students on the real objectives of the class. Get to an agreement on the objectives between the lecturer and the students. Students’ goals may be different from the lecturer’s intended goals. – asked the students to rewrite the goals after explanations.
Stage 2 – Reality – The lecturer guided the students to search and think of their own available knowledge on the topic under discussion. Dig further to get more – the lecturer asked the students to reflex on their own knowledge regarding the topic.
Phase 2: Middle

Stage 3 – Option – In the class/teaching session, the lecturer guided the students to relate, compare and contrast with the available knowledge that the students have. - asked the students to write the goals. The lecturer guided the students to search for other possible topic or concepts that may be in the same line to the topic under discussion. For example, if the topic is about a specific performance management system – guide the students to find for more performance management system in practice to widen their knowledge on that topic.

Stage 4 – Will - The lecturer guided the students on what can they do with that knowledge? Practicing the knowledge will sharpen their understanding on that topic. The lecturer assessed the students understanding of the topic using critical thinking rubric. By using critical thinking rubric, the lecturer can understand the students’ ability to identify and analyse issue/ problem in a complex situation and able to assess and justify the situation, clearly explain a situation and assess the discussion, think beyond boundaries at most times and to provide challenging views and able to make decision based on real solid evidence and to identify the source of evidence.

Phase 3: Observation and Reflection

For every stages students were asked to mention/write their feedbacks on their learning experience and how they think it helped them to understand their topics with the use of coaching approach. Semi structured interviews were conducted with the students to explore more on their feelings about the class and the effectiveness of that teaching session. The reflections were done by the lecturer on every stages.

6. Findings and Conclusion

The purpose of this study is to use coaching approach to improve accounting student’s critical thinking skills with the use of Grow Model. This study is divided into three phases; Beginning phase where it includes stage 1-Grow and stage 2-Reality, Middle phase where it includes stage 3-Option and stage 4-Will and Final phase where the observation and reflections take place.

The beginning phase:

In stage 1: Grow - What do you want to achieve. At the beginning of the session, the lecturer as students on their goal for the lesson. Most of them expressed their view, which are quite general perspective;

“I want to be expert and fully understand the topic”

Acting as a coach, the lecturer try to ensure that at the first stage, the students understand the goal of the lesson under study by giving clear explanation. So that students’ goals are specific and aligned with the lesson’s goal or course learning outcome which is ‘Students are able to calculate techniques in long term decision making’.

This action had created awareness and readiness on the expected goal. The feedback from students showed that only two third of the students understand the goal of the lesson under study even after the lecturer give explanations on the expected goal.

In stage 2: Reality – Current situation. In order to enhance the students’ understanding of the topic/lesson under study, the coach/lecturer tried to understand the level of knowledge and experience that the students had. The feedback showed that current knowledge and experience of the students on the topic under study are considerably medium-low. With this understanding, the coach/lecturer enhance the explanations and discussions of the topic.

The middle phase:
In stage 3: Option – What could you do. Understand that students’ level of understanding are low, the lecturer enhance the discussion of the topic. There were about ten different scenario exercises done during the session. Every students were guided on every exercises. The lecturer will only move to the next exercises clarifying with students whether they understand or not.

During discussions of the exercises, the coach/lecturer imposed other options to enhance students’ understanding. The lecturer searches for other possible topic or concepts that may be in the same line to the lesson under study. This has enhanced students’ understanding in solving the given exercises. The students able to identify and analyze issue/problem in a complex situation and able to assess and justify the situation in the exercise given.

In stage 4: Will – What will you do. Students were guided on what they can do with the knowledge and how practicing the knowledge can enhance their understanding on the topic. The feedback showed that students able to think beyond boundaries at most times and to provide challenging views.

After the completion of lesson, all 29 students were given a quiz with the use of critical thinking rubric. All participants score full mark on the quiz.

The full marks of quiz is 5%.

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<th>Critical thinking criteria</th>
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<th>Able to analyze issue/problem in a complex situation and able to assess and justify the situation.</th>
<th>Able to develop and improve thinking skills. Able to analyze and clearly explain a situation and assess the discussion.</th>
<th>Able to think beyond boundaries at most times and to provide challenging views.</th>
<th>Able to make decision based on real solid evidence and to identify the source of evidence.</th>
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The final phase: Observation and Reflections

At the beginning, students felt awkward when they were asked about their goals or what they want to achieve from the topic since nobody else asked about their goals before started a new topic. They were quite confused why the lecturer asked the question. After giving some explanation on coaching approach, they felt relax and started mention/writing their goals. After they had done written their goals, the lecturer explained the goal to be achieve for the topic/lesson. Their faces looked relief after the lecturer give clear explanation on what to aspect or to achieve for the topic/lesson under study.

Since the students had been explained about this coaching approach, they were not asking further questions when they were asked about their previous knowledge on the topics under study. Instead, they were just mention/write about their previous knowledge on the topics. Understanding the students’ previous experience is important in measuring how much efforts must the coach/lecturer must put in coaching the students.

After understanding the level of understanding of the students, the coach/lecturer explained/discussed repeatedly on different kinds of exercises. The coach/lecturer would move to the next exercises after clarifying with students whether they understand or not on the existing exercise. During teaching session,
every students take part and concentrated on the explanation and exercise given. They looked focus on the topic since the topic is related to real life circumstances. The coach/lecturer tried the best to link or connect the discussion with real situation. From observation, most students felt comfortable with this teaching approach since the lecturer keep repeatedly explained on any parts that they were not understood and only move to the next exercise only if every students said they understand and grant permission to proceed to the next techniques.

In written feedback after the lesson finished, there are few students who put rate ‘medium’ or ‘low’ in their understanding with the remark that they feel uncertain on their understanding if they were to do other new exercises. This shows that, even though the coach/lecturer keep explaining and asking if the student understand or not, some student are not telling the whole truth in front of their coach/lecturer. This might relate to bonding/closeness aspects where the trust must be built first in order for the student to follow the coach/lecturer’s guidance. Trust allows student to share their genuine selves with the lecturer, without fear of being judged or mistreated. It put confidence in coachee-coachrelationship (Hauer, K. E., Oza, S. K., Kogan, J. R., Stankiewicz, C. A., Stenfors - Hayes, T., Cate, O. T., & O'sullivan, 2015; Netolicky, 2016; Zhang, Z., & Surujlal, J., 2015). The researcher/lecturer also felt that the time spending per student is important in ensuring the coaching process can take place since this approach needs the coach/lecturer guides the students exclusively.

In conclusion, coaching approach has enhanced the critical skills of accounting students in identifying and analyzing issue/problem in a complex situation and able to assess and justify the situation. Students have more opportunity in discussing topic under study more effectively. With the constant help/guidance from coach/lecturer, students are also able to think beyond boundaries at most times and to provide challenging views.

Coaching approach however, need ‘bond’ or closeness between students and coach/lecturer. It is important to develop a trust based connection but establishing and maintaining the connection is quite complex and challenging. By developing trust, students confidently can express their problems or give their views more effectively. Longer time per student are needed to make this approach successful since more time are spent in each students. Thus small groups are more applicable in a limited session.

7. References


Improving Communication and Critical Thinking Skills among Accounting Students Through The Use Of Flipped Learning

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Abstract: Many researchers have attempted to study the efficiency of e-learning and blended learning concepts on teaching and learning processes. One of the most recent developments in technology enhanced method in teaching and learning is a method called flipped learning. It is an approach where the traditional one-way lecture is flipped to make room for active learning opportunities where educators shift learning into the individual learning space facilitated by technology. This study attempts to implement flipped learning approach in the effort to enhance communication and critical thinking skills among accounting students in Tunku Puteri Intan Syafinaz School of Accounting (TISSA) in Universiti Utara Malaysia. The study involved 49 students from BKAL1013 Business Accounting Group O class from the first semester of 2016/2017. The objective of this study is to examine how the use of flipped learning can help to improve communication and critical thinking skills in problem solving among students taking the accounting subject.

From this study, the results showed that students’ communication and critical thinking skill has developed with the use of flipped learning. Sufficient time however, is needed for students to understand the content from the lectures given in the form of a video used as the media in this project used as an e-learning platform in this project, as well as the ‘catchy’ contents should be created to enhance interest from the students to watch the video.

Keywords: Flipped learning, technology in education, action research

1. Introduction

The use of technology in delivering university’s courses has become ubiquitous in this era of knowledge enhancement. Since the 1980’s the use of technology to deliver accounting courses were strongly recommended (Friedman, 1981). Nevertheless, the use of technology in university courses has been reportedly to be largely focused in delivering contents rather than as a medium to interact among students. This style of teaching and learning is still considered as traditional with technology used only as a means of delivering information and course contents.

In the traditional teaching method which is also known as the teacher-centred learning approach, the teacher or instructor delivers knowledge in a classroom in a one-way direction. This method urges students to be passive learners where they solely rely on learning by listening, memorising and knowledge repetition.

Particularly, in the accounting education sector, the traditional mode of teaching relates to the method of teaching where the accounting courses are taught in the classroom lecture mode, where the students complete their assignments without the aid of technology or other tutorial devices (Friedman, 1981). A number of studies have been done to investigate the students’ achievements differences when using technology to aid the teaching and learning processes in accounting courses (Dowling, Godfrey, & Gyles, 2003; Du, 2011; Jones & Chen, 2008; Freeman & Hancock, 2013; Musallam, 2010; Warter-Perez &
Dong, 2012). Friedman (1981) did a study to determine whether there is a significant difference in the achievement between two groups of students, the groups which uses computers as a tool as problem-solving tool for their assignments and the control group which used the traditional method of teaching accounting courses. Their results show that the group that used the computer as problem-solving tool achieved significantly higher scores compared to the control group.

2. Communication and Critical Thinking Skills among Students

There are several issues and problems related to the traditional learning and teaching method and one of them being students not able to fluently address their problems in class. In the traditional settings of lecturer centred learning, students tend to remain inactive and the communication flow tends to be a one way communication. The students would therefore tend to wait for the solution to any assignment and exercises answer from the lecturer, while some students are actually not doing their homework/tasks at all. Some students are merely shy in explaining their answers in class and have difficulty in answering the "how" and "why" questions.

Through the flipped learning approach, the lectures on the topics are given in the form of video, audio or other multimedia, for the students to listen and understand the topics while the ‘homework’ or questions are discussed in class. It is hoped that by incorporating flipped learning in teaching and learning, the method could be an effective strategy to assist students to reflect about what they have learned in class during discussions, thus the critical thinking and communication skills of the students would developed. This is important in order for the students to be successful by improving their communication and critical thinking skills and becoming life-long learners.

Therefore, this study attempts to implement flipped learning approach in the effort to enhance communication and critical thinking skills among accounting students in Tunku Puteri Intan Safinaz School of Accounting (TISSA) in Universiti Utara Malaysia.

3. Flipped Learning Approach

More recently, the enhancement in technology used in teaching and learning has rapidly evolved. Many researchers have attempted to study the efficiency of e-learning and blended learning concepts on teaching and learning processes. Particularly in accounting courses taught in higher learning institutions, researchers have attempted to investigate the effect of the use of blended learning in delivering accounting courses and mixed results have been found (Dowling, Godfrey, & Gyles, 2003; Du, 2011; Jones & Chen, 2008; Keller, Hassell, Webber, & Johnson, 2009). Du (2011) who examined the comparison between the traditional and blended learning in an introductory principals of accounting course, found that the course that blended learning approach improves the students’ final exam performance.

One of the most recent developments in technology enhanced method in teaching and learning is a method called flipped learning. It is an approach where the traditional one-way lecture is flipped to make room for active learning opportunities (Freeman & Hancock, 2013). Several researchers have provided definitions of flipped learning (Freeman & Hancock, 2013; Musallam, 2010; Warter-Perez & Dong, 2012). For example, Musallam (2010) described that in the flipped learning approach, the educators shift learning into the individual learning space facilitated by technology. This includes the process of recording and narrating class lecture videos and audios or curate video lessons from the internet thus, subsequently the videos are accessed by students in their own convenience. Using this approach, students’ study time which traditionally used to complete their homework given by teachers or lecturers, are used to engage with the class lecture using videos or other media prepared by the lecturers. Conversely, the
activities such problem solving, knowledge application and collaborative exercise, traditionally done as homework after class sessions, are now conducted in class with the presence of the lecturer to guide them.

3.1. Previous studies on flipped learning approach

Researchers have demonstrated positive impacts resulted from their studies done to examine the effect of flipped learning approach on students’ learning processes (Ferreira-Meyers, 2015; Musallam, 2010; Warter-Perez & Dong, 2012). From the results of their survey, Warter-Perez and Dong (2012) demonstrated that students felt that the flipped class learning environment was more interactive and that the new learning environment allowed them to gain better hands-on skills and they also agreed that the flipped class helped them to learn the content better. In addition, Ferreira-Meyers (2015) contended that the flipped learning model can enable educators to make the shift from teacher-driven instruction to student-centred learning where the excellence in students’ communication and critical thinking skills are the centre of concern.

In line with this, the area of focus for this study is therefore to improve students’ communication and critical thinking skills through the use of flipped learning. It is strongly believed that without solid foundation of communication and critical thinking skills, students will likely be faced with a huge struggle throughout their studies and working life. As the traditional method of teaching and learning does not promote communication and critical thinking skills, it is felt that enhancement on this approach should be implemented. In the traditional method, the class meeting time is occupied with lecturer delivering lessons through class activities using PowerPoints. From the researchers’ experience and observation, students usually pay less attention on the presentation or explaining method used by the lecturer. This is because the students are not participating in the process of learning. To the lecturers, most of the time in class has been utilized for lecturing and catering on any questions arises by the students. In reality, the students rarely ask the lecturer. Using flipped learning, the lecturer will upload the lecture in e-learning portal and the students then will do the ‘homework’ in the class. Therefore, it is deemed that by using the flipped learning approach, more time can be allocated to develop students’ skill in communicating the subject or problem.

4. Methodology

This study employed action research. According to Mc Niff (2010), “Action research is a term which refers to a practical way of looking at your own work to check that it is as you would like it to be”. Action research is done by the practitioner. It involves oneself thinking about and reflecting on his/her work. Action research is an enquiry conducted by oneself where the practitioner think about his/her own life and work. In action research report, it shows how practitioner has carried out a systematic investigation into his/her own behaviour, and the reasons for that behaviour.

Action research is open ended. It does not begin with a fixed hypothesis. It begins with an idea that the practitioner develop. The research process is the developmental process of following through the idea, seeing how it goes, and continually checking whether it is in line with what the practitioner wish to happen. Seen in this way, action research is a form of self-evaluation. It is used widely in professional contexts such as appraisal, mentoring and self-assessment.

The study involved 49 students from BKAL1013 Business Accounting Group O class from the first semester of 2016/2017. This class is chosen because Business Accounting subject is the most fundamental accounting subject and the subject requires students to have hands on technical understanding on accounting knowledge therefore suits the objective of this study. The objective of this study is to examine how the use of flipped learning can help to improve communication and critical thinking skills in problem solving among students taking the accounting subject. The evaluation for the result of this study will be based on the communication and critical thinking rubric assessment currently used in accounting subjects in TISSA. An evaluation of the suitability of the current rubric to evaluate the
aspect of communication and critical thinking skills in the implementation of flipped learning is also examined. In this study, the lecturer observation, checklist and interviews were used by the lecturer/researcher to gather data throughout the intervention. There are three phases of data collection, Pre-Implementation, During Implementation and Post Implementation. In each phases, reflections were taking placed. Qualitative data analyses which include thematic analysis and content analysis are used to analyse the qualitative data.

5. Findings and Discussion

From the results, it has been found that most of the students’ communication and critical thinking skill enhance with the use of flipped learning. They react positively toward the video uploaded. They said:

“I like it because the video discuss the topic and make me understand about the questions and answers.”

“I feel more alive in my classroom.”

“It gives me a good experience in understanding the question provided.”

The result on exercise assessment showed that students able to demonstrate passion for the topic presented. The classroom became lively where the students can actively communicate with each other on the exercise given. This is consistent with previous studies which shows that through flipped learning, the students actually are able to identify issue/problem in a complex situation and able to assess and justify the situation (Kashefi, Ismail and Mohammad Yusof, 2012).

“I discuss with my friend and frequently ask the lecturer on solutions”

“It assists me in answering the exercise because I can repeatedly watch the example question”

During the class session, it is found that not all students are able to watch the video. This is due to limited time given for the students to watch the video. They also stressed that they need more time to watch the video repeatedly in order to understand. Reflectively, not all students can understand the content of the video since their level of understanding are at different level.

6. Conclusion

As a conclusion, through flipped learning approach, students can prepare earlier by watching the lecture video and if they cannot understand, they can watch the video again to understand the specific section that they need more understanding.

Based on the findings, it is also concluded that through flipped learning, the lecturer can have more time to focus on each student as the class session in conducted by having the students to solve the exercises questions. The videos are given earlier therefore the students can understand the topic before they enter the class session. They can also have more time to think critically in solving the problems in class.

In the first session, the students did not know what to expect because they do not the awareness of how flipped learning session is done. After the first session, students have more understanding on how the flipped learning is conducted therefore they are more prepared before they enter the class in the second session.

After the reflections, it is concluded that the videos that is going to be developed in flipped learning sessions should be created in a more simple, easy to understand and more interesting with enhanced technology such as Biteable.com, Powtoon.com and others.
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A New Teaching Approach for Improved Learning of Elementary Statistics

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Abstract: Elementary Statistics is offered as a servicing course every semester, involving over a thousand students in classes of about fifty. The persistent issue of high failure rates among students continues to add burden to resources as the repeaters must retake the course until they pass in order to graduate. This study revisits the teaching and learning methods and proposes a new teaching approach by incorporating e-learning and student-centred learning to engage students effectively for better understanding and promote critical thinking. The new teaching approach was effective in improving overall affect: students’ feelings about statistics. Students felt more comfortable in class, and the teaching and learning process became more fun. Their anxieties towards statistics were also reduced when they realized that the calculations were not that complex. To conclude, a student-centered learning approach with daily motivation and continuous quality improvement efforts is possible to change the attitudes of students towards statistics: from fear to fun effective learning.

Keywords: teaching statistics, learning empowerment, e-learning

1. Introduction

The importance of Statistics in every field of knowledge and practice is undeniable; statistical skills are critical for university graduates to survive and excel in their chosen career. Accordingly, Statistics is a pre-requisite course for graduating especially for business and management fields. As an eminent management university, UUM under the School of Quantitative Sciences (SQS) offers servicing course of SQQS1013 Elementary Statistics every semester, involving over a thousand students in classes of about fifty. Several problems have been persistent for many years, primarily high failure rates for example, more than 20% in semester A121. Another is lack of motivation as evident by poor attendance. These problems require corrective actions in order to sustain our academic reputation as well as enhancing customer satisfaction. Thus, this research study is undertaken to resolve the main issue of high failure rates by improving the teaching and learning of the course.

Generally, the subject of statistics is sub-divided into main categories: collection of data, analysis of data, and inference from data (Moore, 2006). Among factors affecting student performance are English competency, attitude towards course, attendance and participation, as well as math anxiety (Zimmer & Fuller, 1996). The fear of mathematics interferes with learning mathematics which leads to more negative math experiences (Preis & Biggs, 2001) A study on workbook curriculum (Carlson & Winquist, 2011), required students to read content before and during class and then work in groups to complete problems and answer conceptual questions pertaining to the material they read. Researchers have presented evidence that students’ exam scores are higher when taught with an active learning approach than when taught with more traditional approaches (Ryan, 2006; Christopher & Marek, 2009).

2. Teaching and Learning of Elementary Statistics

2.1. Current teaching scenario

The current method of teaching is teacher-centered learning, which is passive learning. Lecturers use visual aids in the form of presentation slides, whiteboard and visualizer. To encourage participation,
interactive class activities are sometimes initiated by individual lecturer, but the overall lessons remain teacher-centred. The final course marks are composed of 50% coursework and 50% final examination. The former consists of 5% Quiz, 20% Group Assignment and 25% Test. Currently, the approach of group assignments is examination-oriented and does not encourage in-depth statistical thinking. To improve the teaching and learning of this course, we propose to enhance the overall teaching approach to better engage learners.

Based on feedback from the former students, the following issues have been regarded as causes of their difficulties in learning statistics. These are English proficiency, fear of numbers and symbols, and lack of practice or exercises especially on the last two chapters. The first two items are very much student-dependent as they concern self-competency as well as perception and attitude. It is mandatory that the course be taught in full English. A way to alleviate the problems is to consistently motivate them while delivering the lessons in ways that make learning easy (or seemingly). For example, the slides are provided upfront and students are reminded to look up the meaning of any unfamiliar words or symbols. Upon further probing, the lack of practice of the last two chapters stems from poor understanding of the prior chapters on probability. This is critical for fix because the last two chapters often make up 50% of the final examination. In-process feedback gathered from the current group also revealed similar responses.

Discussions with lecturers who have taught the course contributed the following findings. Students often prefer to sit and work in group with their own friends; this does not facilitate effective learning as quite often the weak students are in the same groups formed by themselves. Although the group assignment (20%) is intended to promote cooperative learning within groups, some common issues hinder its objective. Among those are: lack of participation from each member, often resulting in only one or two members completing the bulk of the work, and also last minute compilation of isolated work pieces just before the submission deadline. The individual student’s poor understanding is only revealed when grading their mid-semester test (25%). It is vital to detect such students much earlier in the process or best to strategize group work and activities in order to maximize participation.

### 2.2. The new approach

Based on prior teaching experiences and students feedback gathered during previous semesters, the following approach was developed and implemented on a group of students during semester A142. “Attitude matters most” is a common saying and student attitudes towards a subject lead to academic success (Popham, 2005). First and foremost, students’ attitudes were worked on by resetting their mindset and belief system. Short inspiring stories or motivational quotes were shared at the beginning of lessons. Learning objectives by each chapter were emphasized to all students for preparation and monitoring. Facebook group was created upon students’ agreement to facilitate timely communication concerning the course. Statistics was repackaged in a form of story-telling: begin with real life applications that students can relate to. For instance, M&M’s games of throw/catch and counting within each team managed to demonstrate the basic probability concepts as well as the descriptive statistics, while relating to sample representativeness in statistical inference.

The guiding principles in redesigning the course conduct follows three standards (Cobb, 1992) recommended by the American Statistical Association (ASA) and the Mathematical Association of America (MAA): (i) emphasize statistical thinking (ii) more data and concepts; less theory, fewer recipes and (iii) foster active learning. The course promotes students to explore data and discover statistical ideas and draw inferences from the data by experiences they received in group discussions and activities. Aligned with Malaysia’s CAPs and NKRA, the use of technology such as web tool 2.0 (Embi, 2011) in teaching and learning of this course was implemented.

Constructive alignment (Biggs, 1999) and student-centred learning through in-class explorations and discussions were also considered. Students construct meaning from what they do to learn and instructor aligns the planned activities and assessments with the intended learning outcomes. Students learn a specific topic via web 2.0 tools as appropriate to have better understanding on that topic. They are
encouraged to explore data and discover statistical ideas and draw inferences from the data by experiences they received in group discussions and activities.

A pre-assessment test consisting of eight multiple choice questions on basic algebra was given to the students on week 1. The results were used to form teams of four comprising a student with lowest mark, one with the highest mark and another two in the middle. The weaker was paired with the stronger as twins, and similarly for the other two with average marks. Twins were briefed on their roles and responsibility to learn and discuss among them. Team members sat together in class and the leader of each team was empowered to ensure full participation of members; any problems must be escalated to the lecturer timely. At the end of the course, team leaders were to complete evaluation for each member.

A list of formulae was provided to students and referred to as their “best friend” to psychologically de-alienate the often-f feared symbols. While learning each topic, the relevant formula was introduced with emphasis on its meaning. Interpretation of values was emphasized instead of just the calculation part. Adding meaning to symbols and values does simplify learning. The various chapters were consistently linked-up to each other and were related to real applications. Examples of Statistics in practical applications such as Hans Roslings’ youtube videos and info-graphics were shared on facebook. Students were encouraged to share statistics around them randomly in class or on facebook group. Some good videos on basic probability such as Venn diagram from the website of patrickjmt.com were helpful for student revision.

In the past, a group assignment (20%) was given with submission deadline before the end of semester. This did not promote timely assessment and feedback to students. The new approach attempts to facilitate students learning by working together throughout the entire process. The group assignment was split into two parts (2 x 10%): both submitted before the mid-semester test. The assignments were submitted in soft copies, marked, commented and made available to all students; this promotes students to learn from everyone’s mistakes and keep improving. Some common mistakes and key learnings were discussed either on facebook group or during class. To address the issues of “copy and paste” among students, the assignments required real data collection within the class and each team investigates different variables. Use of an important tool, Microsoft Excel was made mandatory to promote analysis and presentation of real data, as well as to equip them with the commonly sought after skills at work.

2.3. Results of implementation

Based on students’ feedback, the assigned team and twin structure worked well. Story telling of statistics in practice exposed them to the big picture, enable relation to daily life. They appreciated the timely grading and feedback of results for quizzes, test and assignments which was effective for their learning process. Split group assignments allowed ample time for recovery and improvement as their submission dates were timely to intercept mid-semester test. Sharing of marked soft copies promoted learning and competition among teams. Games engaged and facilitated learning and deeper understanding of the topics, while online videos assisted understanding of some topics. Facebook group improved participation among students, and anonymous online feedback mechanism via padlet.com gathered honest opinions/comments for continual improvement. Use of Microsoft Excel in recording students marks enabled progress tracking, and timely identification of potential failures for remedial process. Students were rewarded for progress and achievement by giving them tokens during class or acknowledgement via facebook group. “Focus! Think! Refocus! Rethink! Practice! Practice! Practice!” was like a mantra in the class. Strong teamwork was evident among them as they cared for each other’s learning.

This new approach was well received by the students and their final examination results were very encouraging. None of them gave up on any of the questions especially the feared last two chapters; the two students (3%) who failed the course managed to obtain more than 40% in overall marks.

3. Acknowledgements

Gratitude goes to the students and lecturers involved in the study during semester A142, University Teaching Learning Centre (UUM UTLC) and last but not least, Universiti Utara Malaysia for awarding us
with the Scholarship of Teaching and Learning (SoTL) grant (SO Code: 13015) to carry out this research project.

4. References


The 21st Century Challenge: Empowering Boys and Children from Lower Socio-economic Backgrounds

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Abstract: Historical trends within the South East Asian region show that given equal access to formal schooling, boys and children of lower-socioeconomic status (SES) tend to have poorer academic outcomes as compared to their counterparts i.e. girls and those from higher-socioeconomic backgrounds. Focusing on Malaysia, a cross-sectional study was conducted drawing on quantitative analysis of the 1999 - 2011 Trends in International Mathematics and Science Study (TIMSS). The findings of this study show that (1) the underachievement of boys could be explained by a lack of kinesthetic learning elements in classrooms and (2) the underachievement of lower-SES children is due to their lack of cultural capital. Tentative recommendations are put forward to empower these groups of learners.

Keywords: achievement gap, boys, low socioeconomic status

1. Introduction

Since the turn of the century, student performance on international educational surveys such as the Trends in International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessments (PISA) has been central to public discourse. Achievement in basic skills such as reading, mathematics and science are said to be fundamental for improving an individual’s employability and a nation’s ability to compete in the global economy (Beech, 2001; Fadel, Bialik & Trilling, 2015). While foreign ‘best practices’ are readily gleaned from cross-national comparisons, little is known about the extent to which national education systems provide all children with quality outcomes.

In the South East Asian region, achievement gap studies are scarce, with clear distinction in the focus of the disparity over time. During the 1980s, developing countries such as Malaysia, Thailand and Indonesia all showed marked disparity along gender (King and Hill, 1993) and socioeconomic lines (United Nations Development Program, 1995). Parents have traditionally preferred to educate sons over daughters due to the perception that boys grow to become bread-winners while girls gravitate towards housekeeping and caregiving (King and Hill, 1993). Meanwhile, children from lower socioeconomic status (SES) who struggle with poverty, malnutrition and child labour tend to drop out of school (Post and Pong, 2009, Symaco, 2014).

While the gender gap has successfully narrowed, even reversed, to favour girls since the 1990s (Pong, 1993; Knodel, 1997; Mullis et al., 2012; Martin et al., 2012), the gap between children from low- and high-SES backgrounds persist, and in some instances widened (Saw, 2016; Pattaravanich, Williams, Lyson and Archavanitkul, 2005).

Focusing on Malaysia, Ismail and Awang (2007, 2009, 2012) found that fourteen-year-old girls tend to outperform boys, non-native speakers tend to outperform Malay-native speakers, while those from higher SES backgrounds tend to outperform those from lower SES backgrounds (as measured by parental education). While this series of studies have succeeded in capturing the disparity in educational outcomes
(specifically, Mathematics), they remain largely at a descriptive level, do not track developments over time and do not attempt to relate the findings to any existing theories.

Saw (2016) advanced Ismail and Awang’s (2007, 2009, 2012) findings by investigating the Mathematics and Science achievement of fourteen-year-old students across four cohorts. Drawing on the TIMSS 1999-2011 data, it was found that there is a trend favouring girls, non-Malays and children from high-SES backgrounds. Saw’s (2016) most intriguing find was that over the years, the SES gap has widened much more than the gender and racial gaps. Albeit a significant contribution to the literature, Saw’s (2016) work also did not move beyond the descriptive level nor relate to any theories.

Therefore, this paper is significant as it is one of the first attempts to explain the gender and SES achievement gaps in Malaysia from existing theories. Four hypotheses will be derived and tested in this paper. The theories reviewed are not exhaustive and more studies are necessary to examine other existing explanations.

2. Explaining the Underachievement of Boys

2.1. Biological and hormonal differences

One theory on the underachievement of boys stems from biological and hormonal differences between the sexes (Lloyd, 2011). Puberty is a universal milestone in child development characterized by a surge of testosterone hormones in boys and estrogen in girls. During the early adolescence period (10-14 years), girls show earlier physical and sexual maturation and this trend is also mirrored in brain development (Blakemore, Burnett and Dahl, 2010; Giedd, Raznahan, Millis and Lenroot, 2012). Giedd et al. (2012) demonstrated that the frontal and parietal lobes reached peak gray matter volume during the onset of puberty, which occurs one to three years earlier in girls than in boys. While the frontal lobe regulates executive functions such as reasoning and decision making, the parietal love is concerned with sensation and perception as well as the integration of sensory inputs; processes which are essential for academic success.

*Hypothesis 1: This biological determinism hypothesis predicts that fourteen-year-old Malaysian boys will perform poorer than girls on all four TIMSS studies because of their latent brain development.*

2.2. Different learning styles

An alternative theory is given by the concept of learning styles. Learning styles refer to ‘the manner in which individuals choose to or are inclined to approach a learning situation’ (Cassidy, 2004: 420). It follows that students learn and perform best when teachers teach and assess them according to their learning styles. Decades of research on gendered learning styles among Western children show that boys are kinesthetic learners (i.e. prefer learning through physical movements), excel in classrooms that have competitive elements, are ICT focused and have short-term academic targets (Bleach, 1998; Gurian, Henley and Trueman, 2001; King and Gurian, 2006). Girls on the other hand, are generally better at ‘verbal-emotive’, ‘sit-still’, ‘take-notes’ and ‘listen-carefully’ types of tasks (Gurian et al., 2001; King and Gurian, 2006).

*Hypothesis 2: Based on this assumption, fourteen-year-old Malaysian boys will outperform girls in Science but not in Mathematics because Science classrooms afford boys with more kinesthetic learning elements e.g. laboratory and field work.*

3. Explaining the Underachievement of Low-SES Children

3.1. Child labour

Children from low-SES backgrounds tend to engage in part-time work during schooling in order to help their families earn a living (Pattaravanich et al., 2005; Post and Pong, 2009). In a comparative study of 8 countries, Post and Pong (2009) found that students from lower-SES backgrounds were more likely
to work up to 20 hours per week. The authors found that the Mathematics and Science achievement gap between working and non-working children in South East Asian and African countries were larger as compared to the gap in Western countries. In Indonesia for example, this is due to the labour-intensive nature of working in the fishing and agricultural industries (Agus, Suryahadi and Sumarto, 2005, as cited in Post and Pong, 2009). A ‘zero-sum’ relation between the allocation of resources to employment and studies was proposed; more time and energy devoted to work will necessarily detract from academic achievement.

Hypothesis 3: This hypothesis predicts a negative relationship between time spent in part-time work and Mathematics and Science achievement. We would also expect children from low-SES families to engage in more part-time work as compared to their higher-SES counterparts.

3.2. Cultural capital

Alternatively, Bourdieu (1977) argues that low-SES children underachieve because they lack familiarity with the dominant culture in society and are particularly unable to understand and use ‘educated’ language. The author argues that schools assume that all children possess similar levels of cultural capital when in reality, there are distinct class differences favouring those from higher-SES families. Thus, ‘pedagogic transmissions’ are received unequally as students from low-SES families simply do not understand what their teachers are trying to get across (Bourdieu, 1974, as cited in Sullivan, 2001). Bourdieu (1986) argues that parents transmit cultural capital to their children in three forms: (1) in the embodied state i.e. long-lasting dispositions of the mind and body, (2) in the objectified state i.e. cultural goods such as pictures, books and dictionaries and (3) in the institutionalized state i.e. educational qualifications.

Hypothesis 4: The cultural capital theory posits that children from high-SES families will outperform children from low-SES families. SES would be the greatest individual-level predictor of Mathematics and Science achievement.

4. Data, indicators and methods of analysis

4.1. TIMSS

The Trends in International Mathematics and Science Study (TIMSS) is a cross-national study organized by the International Association for the Evaluation of Educational Achievement (IEA). Conducted once every four years since 1995, there are now more than 60 countries participating in TIMSS, making it one of the most extensive international educational surveys on student achievement.

TIMSS uses a two-stage stratified sampling design whereby each country randomly selects a certain number of schools to be tested, one class is randomly selected, and all students within the class sit for both the Mathematics and Science tests (Olson, Martin and Mullis, 2008). Thus yielding a nationally representative sample.

TIMSS test items were constructed by subject-matter experts in close collaboration with member states (Olson et al., 2008). Questions were designed to examine three cognitive domains i.e. knowing, applying and reasoning. The test duration is 90 minutes and no one student sat for all test items as they were randomly assigned to different booklets based on TIMSS matrix sampling approach.

4.2. The Malaysian sample

Malaysia only enrolled her eighth-grade students on TIMSS starting in 1999. This paper examines the achievement of students on TIMSS 1999, 2003, 2007 and 2011. Students have a mean age of 14.3 years.

The Malaysian sample met TIMSS precision requirements of at least 150 schools and 4000 students. The number of schools included in the study ranged from 152 in the year 1999 to 180 in 2011
(see Table 1 below). The number of students who participated in the study ranged from 4466 in 2007 to 5733 in 2011. Excluding missing data, all students were included in the analysis.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Number of schools, n</td>
<td>152</td>
<td>150</td>
<td>165</td>
<td>180</td>
</tr>
<tr>
<td>Number of students, n</td>
<td>5577</td>
<td>5314</td>
<td>4466</td>
<td>5733</td>
</tr>
</tbody>
</table>

4.3. Indicators

*Gender:* Based on students’ response to the question ‘Are you a boy or a girl?’, the proportion of girls included in the analysis were 54.4% in 1999, 57.8% in 2003, 53.3% in 2007 and 50.7% in 2011.

*Socioeconomic status (SES):* Four items from the TIMSS student questionnaire were used as indicators of family SES: (1) father’s education, (2) mother’s education, (3) number of books at home and (4) home educational resources i.e. calculator, computer, study desk and dictionary. On each study, these variables were measured using the same scale except for parental education. In order to obtain a standardized score across all four cohorts, data was translated into estimated number years of schooling. For example, ‘finished primary’ and ‘ISCED 1’ were recoded as 6 years of schooling while ‘finished university’ or ISCED 5A’ were recoded as 16 years of schooling. Each indicator was then standardized to have a mean of zero and a standard deviation of one. With equal weights assigned to each indicator, an index of family SES was computed.

*Mathematics and Science achievement:* TIMSS uses the Item Response Theory to compute five plausible values which indicate student performance. These plausible values have a mean of 500 and a standard deviation of 100. Mathematics and Science scores were analyzed separately using the aggregate scores. Davier, Gonzales and Mislevy (2009) stated that this allows researchers to obtain reliable mean scores. However, the sampling variance reported would be an underestimation of the dispersion of the data.

*Child Labour:* Child labour was indicated by the question “On a normal school day, how much time do you spend before or after school working at a paid job”. Participants could select one out of five responses: (1) no time, (2) less than 1 hour, (3) 1-2 hours, (4) 2-4 hours and (5) 4 or more hours. These are translated into mean estimated hours of work per week. For example, ‘less than 1 hour’ was recoded as 2.5 hours per week while ‘more than 2 but less than 4 hours’, 15 hours per week. A standardized score was then obtained. This test item was omitted by the test administrators in 2011.

4.4. Methods of analysis

Data was subject to sampling weight adjustments prior to analysis. The TOTWGT variable computed by TIMSS was used. This study mainly utilizes the independent-samples-of-means test to compare the mean scores of dichotomous groups i.e. boys versus girls, low-SES versus high-SES children. Pearson’s product-moment correlation coefficient was used to assess the relationship between child labour, academic achievement and socioeconomic status.

5. Results

5.1. The underachievement of boys

*Mathematics*

As demonstrated by previous research, Malaysian students’ Mathematics achievement on TIMSS decreased drastically from 1999 to 2011 (see Table 2 below). Examining the gender gap, it was found that fourteen-year-old boys performed significantly poorer than girls starting in 2003. Using the independent samples of means test, we observe that in 2003 boys scored a mean of 504.5 points while girls scored a
mean of 512.1 points; \( t(3420) = 3.420, p = .001 \). This gap favouring girls increased to an 18.6-point difference in 2011; \( t(3908) = 6.661, p <.001 \).

### TABLE 2: Gender Difference in Mathematics

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Girls</td>
<td>Mean</td>
<td>521.4</td>
<td>512.1</td>
<td>478.9</td>
</tr>
<tr>
<td></td>
<td>Standard deviation</td>
<td>(75.5)</td>
<td>(69.9)</td>
<td>(74.5)</td>
</tr>
<tr>
<td>Boys</td>
<td>Mean</td>
<td>516.7</td>
<td>504.5</td>
<td>468.2</td>
</tr>
<tr>
<td></td>
<td>Standard deviation</td>
<td>(78.9)</td>
<td>(72.9)</td>
<td>(78.1)</td>
</tr>
<tr>
<td>Mean difference (Girls-Boys)</td>
<td>4.7</td>
<td>7.6**</td>
<td>10.6***</td>
<td>18.6***</td>
</tr>
</tbody>
</table>

### Science

Malaysian students’ Science achievement on TIMSS showed a slight increase in 2003 followed by a sharp decrease up to 2011 (see Table 3 below). Examining the gender gap in Science, it was found that fourteen-year-old boys performed significantly better than girls in 1999 and 2003. In 1999, boys scored a mean of 497.6 while girls scored a mean of 488.1; \( t(3819) = -4.016, p < .001 \). This 9-point difference favouring boys was also observed in 2003. However, in 2007, girls outperform boys by a mean of 475.0 to 466.0; \( t(4204) = 3.579, p<.001 \). By 2011, this gender gap in Science increased to a 15-point difference.

### TABLE 3: Gender Difference in Science

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>Mean</td>
<td>488.1</td>
<td>505.5</td>
<td>475.0</td>
</tr>
<tr>
<td></td>
<td>Standard deviation</td>
<td>(73.0)</td>
<td>(62.0)</td>
<td>(80.1)</td>
</tr>
<tr>
<td>Boys</td>
<td>Mean</td>
<td>497.6</td>
<td>515.4</td>
<td>466.0</td>
</tr>
<tr>
<td></td>
<td>Standard deviation</td>
<td>(75.2)</td>
<td>(62.0)</td>
<td>(88.9)</td>
</tr>
<tr>
<td>Mean difference (Girls-Boys)</td>
<td>-9.5***</td>
<td>-9.9***</td>
<td>9.0***</td>
<td>15.0***</td>
</tr>
</tbody>
</table>

**Do boys underachieve because of biological and hormonal differences?**

This claim can be refuted as boys performed as well as girls in the 1999 Mathematics test and further outperformed girls in the 1999 and 2003 Science tests.

**Do boys and girls learn differently?**

There is some evidence in support of this hypothesis. Adhering to predictions, the 1999 and 2003 data show that girls outperformed boys in Mathematics while boys outperformed girls in Science. However, from 2007 onwards, the gender gap in Science had reversed to favour girls followed by a widening trend. A closer examination of the TIMSS data reveal that students were equally likely to engage in laboratory work across all four cohorts. In other words, boys underachieve in the latter cohorts despite having similar exposure to kinesthetic learning elements.

### 5.2. The underachievement of low-SES children

**Mathematics**

As an extension to Saw’s (2016) finding, quintile analysis was conducted to demonstrate the extent of the disparity. Table 4 shows a narrowing trend between 1999 and 2003. However, any gains made during this period was soon reversed. In 2011, children from the lowest-SES quintile (M = 396.5) were lagging behind their highest-SES quintile peers (M = 504.6) by a staggering 108.1 points; \( t(1006)=-23.05, p <.001 \).

### TABLE 4: The gap between low- and high-SES children in Mathematics
Similarly in Science, children from low-SES backgrounds performed significantly poorer than their high-SES peers on all four cohorts. Table 5 shows a similar narrowing trend between 1999 and 2003. Children from the lowest quintile (M= 487.6) seem to be ‘catching up’ to their peers in the highest quintile (M = 550.6); t(1239) = -19.03, p<.001. However, from 2003 onwards, there was a stark reversal and the gap between the lowest and highest-SES children was 123.2 points in 2011.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest Quintile</td>
<td>470.4</td>
<td>487.6</td>
<td>438.1</td>
<td>383.1</td>
</tr>
<tr>
<td></td>
<td>(64.0)</td>
<td>(57.3)</td>
<td>(69.4)</td>
<td>(91.8)</td>
</tr>
<tr>
<td>Second Quintile</td>
<td>481.6</td>
<td>496.5</td>
<td>462.9</td>
<td>408.7</td>
</tr>
<tr>
<td></td>
<td>(65.8)</td>
<td>(60.2)</td>
<td>(71.1)</td>
<td>(89.1)</td>
</tr>
<tr>
<td>Third Quintile</td>
<td>488.4</td>
<td>510.8</td>
<td>476.5</td>
<td>436.5</td>
</tr>
<tr>
<td></td>
<td>(66.7)</td>
<td>(56.0)</td>
<td>(78.2)</td>
<td>(87.1)</td>
</tr>
<tr>
<td>Fourth Quintile</td>
<td>511.1</td>
<td>526.3</td>
<td>494.1</td>
<td>470.9</td>
</tr>
<tr>
<td></td>
<td>(69.6)</td>
<td>(55.3)</td>
<td>(73.5)</td>
<td>(81.7)</td>
</tr>
<tr>
<td>Highest Quintile</td>
<td>550.8</td>
<td>550.6</td>
<td>529.3</td>
<td>506.3</td>
</tr>
<tr>
<td></td>
<td>(67.3)</td>
<td>(59.2)</td>
<td>(75.6)</td>
<td>(74.6)</td>
</tr>
<tr>
<td>Mean difference (Highest-lowest)</td>
<td>80.4***</td>
<td>63.0***</td>
<td>91.2***</td>
<td>123.2***</td>
</tr>
</tbody>
</table>

Can the underachievement of low-SES children be explained by child labour?

The findings of this study support the aforementioned hypothesis. Table 6 below shows that the greater the amount of part-time work, the lower the scores on Mathematics and Science, and the higher the likelihood it represents low-SES children. Using Pearson’s product-moment correlation coefficient, data can be interpreted as follows. In 2007, part-time work was negatively correlated to Mathematics achievement by a magnitude of r = -0.188, p < .001 and with Science achievement by a magnitude of r = -0.244, p < .001. Part-time work was also negatively correlated to SES (r = -0.068, p < .001). Although these correlations are statistically significant, they represent a small to medium effect.

<table>
<thead>
<tr>
<th></th>
<th>1999</th>
<th>2003</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIMSS Math</td>
<td>-0.080***</td>
<td>-0.107***</td>
<td>-0.188***</td>
</tr>
<tr>
<td>TIMSS Science</td>
<td>-0.076***</td>
<td>-0.244***</td>
<td>-0.244***</td>
</tr>
<tr>
<td>SES</td>
<td>-0.066***</td>
<td>-0.108***</td>
<td>-0.068***</td>
</tr>
</tbody>
</table>
However, a closer look at the cross-sectional data showed that only up to 6 per cent of students engaged in more than 2 hours of part time work per week. This modest figure coupled with the relatively small effect in the correlation coefficients suggest that child labour does not fully explain the SES achievement gap.

*Can a lack of cultural capital explain the underachievement of low-SES children?*

The findings of this study lend support to Bourdieu’s (1977; 1986) cultural capital theory. Using parental education, home educational resources and number of books at home as indicators of cultural capital, jarring disparities between children from the lowest- and highest-SES quintiles were observed in both Mathematics and Science across all four cohorts.

6. Conclusion and Discussion

This study offers preliminary explanations for the underachievement of boys and low-SES children in Malaysia. The former could be explained in part by a lack of kinesthetic learning elements in classrooms. As I have shown elsewhere (Ching, 2016), the enactment of the *Teaching and Learning of Science and Mathematics in English (PPSMI)* policy which places huge emphasis on the English language affects boys whose language abilities are inferior to girls, negatively (Maccoby and Jacklin, 1974; Lloyd, 2011).

To empower boys, this paper proposes that more activities which incorporate physical movements be introduced into lessons and assessments.

The underachievement of low-SES children in 21st century Malaysia can best be explained by a lack of cultural capital, and not engagement with part-time work. Cultural capital, as defined by the ability to use and understand ‘educated’ language in classrooms, ingrained patterns of learning, and access to learning resources, is a greater predictor of achievement as compared to gender and race (Ching, 2016).

As such, to empower children from lower-SES groups, teachers should use simple language while teaching, strive to establish a positive learning culture in classrooms and facilitate access to a variety of learning resources.

7. References


Influence of Cooperative Type Model of Group Investigation on Students’ Cognitive Learning Outcomes

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University of Medan, Indonesia

Abstract: This study aims to determine the effect of cooperative learning model of Group Investigation (GI) on learning outcomes and student interpersonal communication development. The study is quasi experimental, with two group pretest post-test design. The study population was all students of class XI SMA Negeri 11 Medan in academic year 2016/2017. Samples were taken from two classes of the population by random sampling technique. One class is the experimental class taught by cooperative learning model GI and the control class was taught by conventional learning. The research instruments consisted of cognitive tests. Achievement test used to measure learning outcomes. Cognitive learning outcomes were analyzed by t-test. The results showed that there was an influence of cooperative learning model GI on learning outcomes. Through the cooperative model GI type, atmosphere to learn was more effective, cooperative relationships in the learning group inspired students to have courage to express opinions, communicate and share information with friends in solving learning problems.

Keywords: cooperative learning type group investigation, cognitive learning outcomes

1. Introduction

The main support for the achievement of development goals is the quality of Indonesian human quality education. Quality education is not done only through the transformation of knowledge in science and technology, but among others supported by the development of the ability of learners to help themselves to choose and make decisions in the achievement of its goals. The ability of the participants is not only the academic aspect, but also concerning aspects of personal development, social, intellectual maturity, and value systems.

Factors that lead to less success in academics is not only intelligence, but also character issues, namely self-confidence, ability to cooperate, social skills, ability to concentrate, empathy and communication skills. A person's ability to interact is called interpersonal communication skills.

Teachers should ask questions that lead students to think and ask scientifically oriented questions, open-ended questions that get them to carry out investigations to find scientific answers (Li & Arshad, 2015. p.154). This can be done to improve learning outcomes and student interpersonal communication. According to Siska, Sudardjo & Purnamaningsih (2003, p.70), one of the factors that affect a person's interpersonal communication skills is confidence. The higher the confidence, the lower the interpersonal communication anxiety, and vice versa.

Physics is a science that includes clumps of Science, therefore, has the same characteristics with the physics of Science; these characteristics are the objects of physics, how to obtain and use.

1.1. Learning physics in SMA / MA

There are two issues related to physics that are inseparable, namely physics as a product (in the form of facts, concepts, principles, laws, and theories) and physics as the process (scientific work). Therefore, a physics lesson is a lesson that teaches a wide range of knowledge that can develop the power of reason; the analysis so that almost all the problems connected with nature can be understood.

From my observation, there are still many students who find difficulty in studying physics because they cannot understand the physics of matter taught by teachers as a whole, resulting in low student
learning outcomes. In learning physics, the conventional learning model is still used, with an average value of less than satisfactory. Low student learning outcomes is due to the learning process that is only centered on the teacher (teacher centered) so that students just listen to the teacher's explanation.

Teachers also rarely provide the opportunity for students to interact with classmates or with teachers. Students mostly memorize the subject matter without relating the lessons to everyday life. The learning model used is less varied, resulting in the student being bored and less active when learning. Because they rarely do practicum or an experiment in understanding physics lessons, learning physics becomes less meaningful for students. Astra, Wahyuni and Nasbey (2015, p.75), and Akcay and Doymuş (2012, p.110) describe that the process of learning physics in a teacher-centered school causes teachers actively involved not to directly transfer the information to the students during the course of interaction.

Low student learning outcomes is because the process of learning to this day still gives dominance to the teacher and does not provide access for students to develop independently through the discovery and thinking processes (Sakinah & Purwanto, 2014, p.84; Irwan & Sani, 2015, p.42; & Wahyuningsih, Sarwi, & Sugianto, 2012, p.2).

The problems of students who find Physics difficult and are less active, and the lack of interaction and interpersonal communication skills to lessons need to be pursued. The solution is to perform actions that can change the atmosphere of learning that engages students. Students think that physics is boring and difficult to understand because there are too many formulas to be memorized and symbols that they do not understand, so that students are less interested in studying physics (Folina, Indrawati, & Astutik, 2012, p. 348; Musthofa, 2013, p. 56).

One effort to improve student learning outcomes through the implementation of working together to develop students’ interpersonal communication, i.e., to implement a cooperative learning model. Cooperative learning model is an approach to learning that is appropriate to increase the activity and communication of students during the learning process that takes place. This learning comes from the concept that students can easily find and understand difficult concepts if it were in discussions with a friend. The main idea in cooperative learning is students working together to study and take responsibility for their learning progress. Akcay & Doymuş (2014 p.18) explains that the cooperative learning is a method of learning where students are assigned to small groups in the classroom as well as other environments and where they are helped to learn together. Students achieve more and increase individual confidence, develop communication skills and participate actively.

2. Methodology

The type of research was quasi experiment by two group pretest – posttest design. The study population was all students of class XI SMA Negeri 11 Medan in academic year 2016/2017. The sample in this study consists of two classes, namely the experimental class and control class, determined by random sampling technique. The study involved two classes that were given different treatment. One class was used as an experimental class and other class used as a control group. The results of student learning was found by giving a multiple choice test in second grade before and after treatment, which was analyzed using t-test (Sudjana, 2005).

3. Result and Discussion

In the implementation stage, teachers implemented cooperative learning model of GI appropriate lesson plant. Researchers divided the students into several groups, each group to guide experimentation and discussion. After that, each group presented their report. During the learning activity, the researchers conducted observations of the cognitive learning. The results of these observations were analyzed to see the effect of cooperative learning model GI during the learning process. The results showed that the effects of using cooperative learning model type GI on learning outcomes. It can be seen from the posttest results of the experimental class and control class.
TABLE 1: The average value of the experimental class and control

<table>
<thead>
<tr>
<th>Class Data</th>
<th>Average Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
</tr>
<tr>
<td>Experiment</td>
<td>43.46</td>
</tr>
<tr>
<td>Control</td>
<td>37.17</td>
</tr>
</tbody>
</table>

The above table shows that the average value resulting from the experimental class is higher than the average value generated from the control class, so it can be concluded that the learning outcomes of the experimental class that learned using cooperative learning model type GI was better compared with the control class that learned with conventional models. This is consistent with research by Sakinah and Purwanto (2014) which stated that the learning outcomes in the experimental class was better than in the control class. Student learning outcomes were better in the experimental group than the control group because of some of the benefits of cooperative learning model GI compared to conventional learning, cooperative learning model GI focused more on students, who will be more active to construct direct knowledge through any activities that have been designed. In the control class which was teacher-centered learning, while students only heard, not too many students were involved in the work.

According to research conducted by Risnawati, Yulianti, Dwijananti (2012:13); Praptiwi & Handhika (2012:47); Mahardika, Subiki, & Mukharomah (2013:227), which states that the GI is a form of cooperative learning model that emphasizes the participation and activities of the students to find their own material (information) lessons will be learned through the materials provided. Students are involved from the planning, both in determining the topic as well as a way to learn through investigation.

The purpose of cooperative learning is to improve self-confidence and communication skills of individuals, strengthening the power of problem solving and critical thinking, and students actively participate in the educational process (Simsek, 2013: 5; Wahyuningsih, et all, 2012: 2).

A study conducted by Tsoi & Chia (2004) states that through the GI model, students interact with a lot of information while working collaboratively with others in a cooperative situation to investigate the problem, planning and presentation, and evaluate the results of their work. All members of the group in cooperative learning GI have tasks. This causes each member of the group to be active, there is interaction between students and students, and students with teachers. Students are trained to develop social communication skills, encouraging students to appreciate other people's opinions, and improve the academic skills of students, and students are trained to speak to the class. Therefore, GI cooperative learning model does not only affect the cognitive learning, but also on the development of interpersonal communication and psychomotor learning outcomes of students. According to Akcay & Doymuş (2012: 116), the main purpose of the implementation of cooperative technique is to give responsibility to the students and interaction with one another.

The existence of interactions between students causes interpersonal communication with each other. So during the investigation process, students are required to have good skills in communication. The development of students' interpersonal communication happens because students become more active, as the subject of learning in the classroom, actively studying the learning material, opinions, questions and answers, to promote knowledge, solve problems, discussions, and draw conclusions.

Through the activities of designing, researching, studying and doing practical work, students will gain work experience that is valuable and likely to apply kefahaman theories that have been learned through the tasks are accounted for (Chiu, Mahat, Hassan, Chik, & Yahya, 2010: 134).

The success of the GI cooperative learning model is based on many things i.e., this model stressed on the involvement of students in full. Investigation or inquiry conducted as learning activity, which gives students the possibility to develop understanding through various activities and learning outcomes in accordance with the development of the students. Learning activities traversed by solving problems or...
issues assigned by the teacher, while the subsequent learning activities tend to be open, meaning not strictly structured by the teacher, which in practice refers to various theories of the investigation.

Although cooperative learning model of GI results in better learning and development of interpersonal communication which tends to increase as compared to conventional learning, there are some obstacles in conducting research: the relatively large amount makes the researcher unable to maximize managing time so there is a learning activity that is less effective, particularly in terms of control, drive and discipline students.

4. Conclusion

Based on an analysis of data from studies conducted, it can be concluded that student learning outcomes of students who were subjected to cooperative learning model type group investigation was better than the learning outcomes of students who were subjected to the conventional learning models. It can be seen from the average post-test students after being treated.

5. Acknowledgements

Acknowledgements to the school, SMA Negeri 11 Medan and all those who have helped in this research.

6. References


Pembelajaran Penilaian Teks Naratif

Mohammad Fazli Salleh dan Khairunnisa Mohamed

Pusat Bahasa Melayu Singapura
Sekolah Rendah East Coast


**Kata Kunci:** bacaan, inferens, kognitif, kefahaman, metakognitif

1. **Pengenalan**


Kajian pengajaran ini adalah usaha guru-guru dari sekolah kami dan bertujuan untuk meluaskan lagi proses pembelajaran dan pengajaran dalam memperkengkapkan para pelajar dengan kemahiran yang dapat membantu mereka menangani latihan kefahaman dengan lebih berkkesan. Pemahaman teks memerlukan seseorang membaca itu menganalisis kandungan yang ada dan ini penting untuk mencetuskan proses pemikiran yang membolehkan para pelajar untuk membentuk pendapat.


2. **Tujuan Kajian**

3. Pernyataan Masalah


Antara faktor yang menyumbang kepada kegusaran ini, adalah keterbatasan kosa kata dalam kalangan murid. Keterbatasan ini menjejaskan kebolehan para pelajar untuk membina pemahaman yang baik dan mengumpulkan idea mereka dalam bentuk tulisan lantas menghambat para pelajar untuk mengaprestiasikan teks.

Keterbatasan ini secara khususnya merujuk kepada golongan kata adjektif. Sebagai contoh, perkataan “baik” digunakan secara sewenang-wenangnya untuk menggambarkan sesuatu perbuatan positif. Akibatnya, murid tidak tepat mengumpulkan idea mereka serta memenuhi kehendak soalan-soalan inferens.

4. Kajian Lepas

Kaedah W.P.S. memberi tumpuan pada proses metakognitif seseorang dalam membina pemahaman yang baik dalam bacaan. Proses metakognitif membolehkan seseorang itu melakukan langkah-langkah tertentu yang dapat membantu mereka dalam berfikir. Fikiran yang berstruktur pula akan membantu seorang pelajar itu untuk membina pemahaman yang baik dalam bacaan. Beberapa kajian telah dijalankan untuk menguji keberkesanan strategi-strategi metakognisi dalam pembelajaran.


Dapat disimpulkan daripada kajian ini bahwa strategi metakognisi yang disediakan oleh guru kepada murid dapat membantu mereka dalam mengekalkan pemahaman yang baik dalam bacaan. Dapat disimpulkan daripada kajian ini bahwa strategi metakognisi yang disediakan oleh guru kepada murid dapat membantu mereka dalam mengekalkan pemahaman yang baik dalam bacaan.

5. KAEdah Kajian


Kajian pengajaran yang menggunakan kaedah W.P.S ini merupakan usaha sejuk yang dijalankan untuk mengasah kemahiran menganalisa teks bagi murid serta membantu guru untuk mengajar kemahiran tersebut dengan lebih berstruktur.

Kajian pengajaran ini dijalankan sebanyak dua sesi (Lesson Study Cycle 1 and 2) Guru-guru yang terlibat sama dalam kajian turut melakukan pemerhatian sewaktu kajian pengajaran dilaksanakan. Setelah guru selesai melaksanakan sesi pengajaran yang pertama, kesemua guru-guru pemerhati yang terlibat dalam kajian tersebut akan membuat refleksi tentang pengajaran dan pembelajaran tersebut. Guru-guru juga akan
berbincang tentang keberkesanan pengajaran tersebut dengan melihat kekuatan dan kelemahan proses pengajaran. Objektif guru pemerhati adalah untuk memantau proses pembelajaran murid semasa kajian dijalankan.

Pascapersidangan diadakan untuk mendapatkan maklum balas guru-guru berkenaan dengan pelaksanaan kajian serta keberkesanan pendekatan yang digunakan agar kajian ini dapat diperhalusi dengan penambahbaikan. Oleh itu, penambahbaikan telah dilakukan dengan memperbaiki rancangan pelajaran. Seterusnya, sesi pengajaran yang kedua dilakukan dengan merujuk kepada rancangan pelajaran yang telah dimurnikan. Rajah 1 menunjukkan proses kajian pengajaran yang dijalankan:

![Rajah 1: Proses kajian](image)


### 6. Dapatan Kajian Dan Perbincangan


Hasilnya, perbincangan antara guru dengan murid dalam kelas lebih aktif. Walaupun ada kalanya agak payah untuk mengungkapkan idea-idea dalam kekata, murid lebih proaktif dan cuba berkongsi pandangan mereka bersama rakan-rakan sedarjah. Jadual 1 dan 2 menunjukkan markah bagi soalan-soalan inferens (38 - 40) sebelum dan selepas kajian pengajaran dijalankan.
Jadual 1: Markah bagi Prakajian

<table>
<thead>
<tr>
<th>Markah</th>
<th>S38</th>
<th>S39</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 – 4 markah</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>2 markah</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>0 - 1 markah</td>
<td>25</td>
<td>16</td>
</tr>
</tbody>
</table>

Kemerosotan purata untuk murid yang mendapat markah 0-1 adalah peningkatan yang amat ketara. Berdasarkan dapan kajian di atas, kaedah W.P.S adalah suatu strategi metakognisi yang dapat meningkatkan tahap pemahaman dalam bacaan.

7. Kesimpulan

Kajian yang telah dijalankan ini telah memperkuat keberkesanan strategi metakognisi yang perlu diterapkan dalam pembelajaran di dalam kelas. Kemahiran metakognisi yang didedahkan dalam pembelajaran menjadi landasan untuk memungkinkan daya pemikiran yang lebih kritis.


8. Penghargaan

Ribuan terima kasih kepada Pengetua Sekolah Rendah East Coast, Puan Jessie Lim Chien Chin kerana telah memberi peluang ini kepada kami. Sokongan beliau telah memberi kami membantu kami mempertingkat pengajaran dan pembelajaran di bilik darjah melalui kajian ini.

Kami juga turut ingin berterima kasih dengan guru teman seperjuangan kami, Cikgu Rozanah Kasnan dan Cikgu Azhar Abdul Rashid kerana telah banyak membantu dan memberi tunjuk ajar kepada kami sepanjang tempoh menyiapkan kertas kajian ini. Pengalaman yang diraih sepanjang proses ini telah memperkukuhkan lagi semangat kami sebagai pendidik bahasa Melayu.

Akhir sekali, kalungan terima kasih kepada Pusat bahasa Melayu Singapura yang memberi peluang kepada kami untuk mempertingkatkan hasil kajian ini di persidangan serantau dan membantu kami memurnikan kertas kajian ini. Tunjuk ajar, kerjasama dan dorongan yang diberikan oleh semua pihak membolehkan kami berjaya menyiapkan kerja kerja ini dengan jayanya.
9. Rujukan


Exploring the Use of Structured Reflections in Assessment as Learning for Postgraduates

Azlina Murad Sani
Universiti Utara Malaysia

Abstract: This paper will share an assessment as learning strategy that was put into practice to support postgraduate students’ active and critical engagement with course content. Synergizing elements of reflective writing and assessment as learning, the strategy was based on two basic assumptions: firstly, that reflection would generate deeper thinking about the subject matter, and secondly, that an appropriate form of assessment would engage learners in the kind of learning that should be taking place. At periodic intervals throughout a 14-week semester, a group of master’s degree students wrote rubric-based in-class reflections on pre-selected topics as part of their regular coursework. Analysis of student writing and instructor feedback showed a positive change in the nature of reflection, from descriptive to dialogic, over the task period. This suggests a deeper engagement with course content.

Keywords: learning-oriented assessment, reflective writing, postgraduates

1. Introduction

In addition to multiple work and family commitments, mature learners who advance to the postgraduate level face unique challenges that influence academic learning. These may include attitudinal barriers (e.g., feeling too old, too busy, or uninterested), pedagogical barriers (e.g., lack of instructional support to integrate new knowledge and skills), as well as academic barriers (e.g., rusty attention and memory skills, critical thinking and reflection skills) (McKeracher, Stuart & Potter, 2006). The existence of the latter barriers indicate the importance of enhancing and nurturing academic learning skills among postgraduate students.

Studying for a higher degree requires the ability to assess ideas critically, and to rationalize beliefs and actions (Johnstone, 2008). As such skills weaken from lack of practice, it would be useful for professionals returning to academic study to relearn how to engage more deeply with subject matter, to question existing knowledge and ideas, and propose novel perspectives. The challenge for me was to create opportunities to support my education postgraduates’ critical engagement with course content, so that they would transition from surface learning to deeper learning. This paper shares a classroom strategy that was put into practice for this purpose, and reports on the outcomes of its implementation. The strategy concerned incorporated the notions of assessment as learning and reflective writing.

1.1 Assessment as learning

Assessment as learning (AaL) is a learning-oriented form of assessment (Carless, 2007) that emphasizes metacognitive processes, i.e., students’ thinking about their learning, and the strategies and mechanisms they use to support and advance learning (Earl, 2006). Dann, (2014, p. 150) observes that AaL “offers a process through which …involvement in assessment can feature as part of learning.” To facilitate rethinking and adjusting for further improvement, AaL tasks may incorporate opportunities for learners to self-assess the extent of their capabilities, including knowledge, level of understanding and strategies for learning (Earl, 2006).
Feedback is always an important feature in assessment. When relevant and timely feedback is incorporated into an AaL task, it is expected to ‘feed forward’ for students’ learning enhancement (Carless, 2007). Besides conventional written feedback from peers or an instructor, rubrics can also be used since its core elements, namely criteria, quality indicators and score, help students not only to visualize what success at a task means, but also to make dependable judgements about the quality of their own work (Reddy & Andrade, 2010; Stiggins, in Andrade & Du, 2005).

1.2 Reflections

Sen (2010) draws attention to different types of reflective practice, and distinguishes between the nature of reflective writing for work situations and academic contexts. For academic learning, Moon (as cited in Sen, 2010) suggests that reflections would comprise a subject matter, a specified purpose, and the learning, action or clarification that is required from the learner. The inclusion of these components is consistent with the view that reflective writing is a means of learning how to learn (Bourner, 2003), or how to take ownership of ideas from lectures and academic books (Bolton, 2010). The fact that reflective writing expectations differ according to context also suggests that students who are more familiar with practical, professional reflections would benefit from some concrete guidance as they embark on reflective writing for academic learning. Guiding questions, for example, have been effectively applied to improve writing quality (Moussa-Inaty, 2015).

Hatton and Smith (1995) classify reflective writing into four types:

1. descriptive writing, which merely describes events or literature, and is therefore not reflective;
2. descriptive reflection, which combines descriptions with justifications, and may reflect awareness of ideas from the literature in these justifications;
3. dialogic reflection, which involves a more careful consideration of situations, and is characterized by judgements, alternative explanations or hypothesizing;
4. critical reflection, in which there is recognition that perspectives and actions are influenced by contextual factors, and should be understood in relation to them.

Hatton and Smith’s framework of reflective writing distinguishes between the depth of thinking involved during the reflective writing process, and allows the identification of levels of reflection achieved by students. Rivera (2017) suggests that these reflection types exist on a continuum. The same assumption is applied in this paper.

2. Aim

I believed that my postgraduate students needed to engage at a deeper level with content. To learn to do so, they should be able to critically assess their current way of engaging with new ideas and further utilize that knowledge for personal improvement (Earl, 2006).

This small classroom research explored the potential of using structured reflective writing to support the students’ engagement with subject matter. I devised and implemented the task, and systematically gathered evidence to understand (a) the nature of students’ reflections on content/subject matter over the task period, and (b) the influences of structured reflective writing on the students’ learning.

3. Task Implementation

An intact class of 12 postgraduate students, comprising mainly primary to tertiary level English teachers participated in the reflective writing task as part of their assessed coursework. This paper reports on the reflective writing of six of the students, with 3 to 9 years of teaching experience, who were from the upper, middle and lower third of the class on course performance.

The task contributed 10% towards their total course marks, and was implemented in the following way: In the second week of class, students were ‘re-familiarized’ with the expectations of reflection for academic learning via a student reflection guide and the assessment rubric that would be used for scoring their writing. The reflection guide comprised a selection of ‘reflective writing sentence starters’ adapted
from internet sources (see, for example, reflective-writing-sentence-starters.html). The students may use these ‘stems’ to structure responses that would fulfil the reflection elements, i.e., to record what was learned, give insights about the idea, show deeper thinking and draw conclusions. The reflection scoring rubric, accessible at any time, informed them of the assessment criteria—quality of content understanding and quality of reflection—and related descriptors. Reflections were scored by me, on a range of 0-5 from novice, to amateur, to reflective. The students could refer to both the guide and the rubric at any time to facilitate their thinking-to-write.

Between weeks 3-10 of the semester, the students wrote four scheduled 15 to 20 minute reflections at the end of class, based on a specific question pertaining to the topic coverage of the day. Reflection 1 provided the baseline data on how the students reflected. In Week 11, they wrote a final reflection in which they provided reactions on having to undergo the reflection task.

Instructor feedback was provided a week before the following reflection. This comprised the individual scores on the rubric, written comments relating to their understanding of content, as well as direct or indirect suggestions for further improvement in the nature of reflection. The guide, rubric and feedback provided a structure to support learning and metacognitive processes.

4. Data Analysis and Findings

4.1 Nature of student reflections on content over the task period

The students’ reflections and my written feedback to them were qualitatively analyzed against Hatton & Smith’s (1995) framework. The students’ baseline writing was found to be largely in the descriptive to descriptive reflective range. There was a tendency to summarize content from the class discussion and describe experiences. Based on the feedback data, areas that needed improvement included comprehension of concepts and (lack of) personal insights such as taking a stand, focusing and thinking through to add depth to personal views.

Before the second reflection task, the students were able to reassess their ability to reflect based on the lecturer’s feedback. As they personally worked out how engage more deeply with the material, some students incorporated more personal and concrete examples of events and actions, but neglected to connect to concepts covered in class. Yet others attempted to demonstrate understanding of the material with a more elaborate theoretical description, but lacked concrete real life connections. Despite a slight improvement in the quality of writing, the second reflection was, as a whole, still mainly descriptive to descriptive reflective.

The feedback data from the third reflection showed that students still needed direction to think from different angles. However, there was some evidence of comprehension monitoring, as well as reflections of a more dialogic nature, such as questioning their own assumptions or expanding on their own interpretation of an idea.

In the fourth reflection, students’ views and opinions tended to be more concrete and focused. There were clearer attempts at dialogic reflection such as venturing questions and issues, and speculating on impact. Elements of critical reflection, although sparse, did emerge in some explanations and justifications.

Overall, a positive change was observed in the nature of reflections over the time period, from mainly descriptive towards mainly dialogic. This suggests that while there were individual differences in quality, structured reflections with timely feedback had the potential to facilitate deeper thinking.

4.2 Influence of structured reflective writing on student learning

To explore the influences of the structured reflective writing on learning, the students’ final reflections were analyzed thematically following Braun & Clarke (2006). The findings suggests that the reflective writing possibly influenced both metacognitive process as well as content of learning. Students reported that having to write reflectively led to increased attention during class, and also prompted self-assessment. Three forms of self-assessment emerged, as shown in the sample extracts below:
1. Level of understanding:
   “Every time I write the reflection, I am able to see where I stand, I mean how clear I understand the content of the topic I learned on that day.” (S9)

2. Capacity as a student:
   “…reflect on my strengths and weakness as a student as well as a teacher.” (S8)

3. Learning effort:
   “I am a last minute person…this activity has led me to the thought about consistency in readings, revising and checking my own learning.” (S11)

In relation to content learning the recurring theme was ‘drawing personal connections’. Students expressed that they thought deeper in order to relate newly learned concepts with existing knowledge and experiences, as suggested by the rubric descriptors (“…makes me to think deeply about my students.” (S6)). Nonetheless, some pressure also was felt by being assessed, and by writing under time constraints (“I will be stressed up also thinking over what the questions will be and how to answer them” (S7)).

5. Conclusion

An assessment as learning strategy incorporating reflective writing was explored to guide and support students’ towards deeper thinking about subject matter covered in a taught course. At the initial stage, writing was found to be mainly descriptive, consistent with an earlier finding (Gomez, as cited in Bolton, 2010, p.12) that education students’ reflections were “unchallenging” and “non-risk taking,” focusing on personal narratives and personal points of view. At the end of the task period, there was generally better engagement with content, despite individual differences in the quality and manner of reflection. The final outcome of the task supports the assertion that both reflective writing and learning oriented assessment positively influences self-development, metacognitive awareness and academic learning (Earl, 2006; Sen, 2010). It is also worth noting that writing in-class rather than take-home reflections might have had some effect as well. The anticipation of having to write on a topic immediately and be assessed on it probably led to attentiveness in class. Paying attention would have resulted in better understanding, which consequently enabled students to think, question and connect with the subject matter more meaningfully. As a student (S1) remarked in her final reflection, if she and her peers had been asked to write the reflections out of class, they would have had access to plenty of resources for ideas, or even to copy from. However, being forced to reflect “without any help from google or anything… we learn to understand.”

6. Acknowledgements

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7. References


