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Foreword by

Chief Editor Jurnal Pendidikan Universiti Teknologi Malaysia

Assalamualaikum w.b.t and Good day,

First of all, I would like to express my sincere thanks and appreciation to the Jurnal Pendidikan Universiti Teknologi Malaysia Editorial Board for their hard work in making sure that the special edition volume of this journal is produced on time. I would also like to thank the articles' contributors and the advisory Board for their support, encouragement, guidance and advice. The production of this special edition volume was made possible as a result of collaborative and collective efforts of the members of the Jurnal Pendidikan Universiti Teknologi Malaysia. The Editorial Members has discussed, conferred and deliberated to ensure the journal materialized. Seventh articles have been refereed and chosen for this volume. As it has been decided that this will be a bilingual journal, six articles written in English and one article in Bahasa Malaysia have been chosen.

I believe that knowledge must be shared and would like to share the wisdom of these articles with all the readers. I am also confident that the articles in this journal will give a great value and ideas to all readers.

Thank you

Dr Zakiah binti Mohamad Ashari
Chief Editor
Jurnal Pendidikan Universiti Teknologi Malaysia

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JURNAL PENDIDIKAN
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KANDUNGAN　　　　　　　　　　　　**HALAMAN**

Penggunaan Muzik Latar Dalam Bilik Darjah

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Abstrak:

Kertas kerja ini merupakan kertas konsep yang membincangkan penggunaan muzik latar dalam pendidikan terutamanya dalam aktiviti pengajaran dan pembelajaran di bilik darjah. Tujuan muzik latar digunakan di bilik darjah adalah bagi memperbaiki kualiti dan kuantiti kerja pelajar. Disamping itu ia membantu mewujudkan kesediaan belajar dan merubah tingkah laku negatif para pelajar. Sorotan kajian tentang kesan muzik latar terhadap tumpuan, kognitif, prestasi, tingkah laku, motivasi dan *mood* memberi gambaran yang positif. Namun begitu terdapat beberapa isu yang memerlukan kajian yang lebih mendalam. Justeru kertas kerja ini akan mengupas tentang isu-isu berkaitan dengan kesan penggunaan muzik latar terhadap pembelajaran di bilik darjah.

Kata Kunci: Muzik Latar, Emosi, Kognitif, Tingkah laku, Prestasi.

1.0   Pengenalan

Dewasa ini pelajar terdedah dengan ledakan informasi digital dan media baru yang memberangsangkan. Justeru agak payah untuk melihat pelajar membaca akhbar, menonton video dan mendengar muzik tanpa melibatkan penggunaan komputer ataupun telefon pintar. Pengajaran dan pembelajaran di bilik darjah turut menerima impak hasil ledaj informasi digital dan media baru ini. Oleh itu pelajar dan guru perlu belajar tentang bagaimanakah cara untuk belajar dan bekerja secara cekap dan berkesan walaupun terdapatnya gangguan yang berterusan ini.

Ramai para sarjana telah menyelidiki isu tersebut. Ada di antara mereka yang mengkaji bagaimana muzik memberi kesan kepada kognitf pelajar. Menurut Anderson & Fuller (2010), beberapa penyelidik telah membuat kesimpulan bahawa muzik yang melibatkan lirik mengganggu kognitif. Walau bagaimanapun ia bertentangan dengan dapatan para penyelidik yang lain. Menurut Downing, Carlson, Hoffman, Gray & Thompson (2004), muzik membantu fungsi kognitif seperti membaca pemahaman dalam keadaan tertentu. Oleh itu perkara tersebut masih belum cukup berkembang untuk membentangkan hasil aplikasi amalinya.

Sehubungan itu adalah penting untuk mengkaji kesan muzik terhadap keupayaan pelajar memandangkan generasi pelajar yang mendatang mungkin diperkayakan atau hanya bergantung harap kepada rangsangan ransangan ini secara berterusan untuk memajukan diri. Justeru

penyelidikan yang meluas mengenai topik ini akan memberi kefahaman kepada pelajar dan guru tentang apa yang membantu atau pun yang menghalang individu untuk memberi tumpuan dan mengekalkan maklumat yang diterima.

1.1 Kepentingan Muzik dalam Pendidikan

Pelajar secara nalurinya ingin memahami bagaimana dunia berfungsi. Pemahaman ini penting untuk meningkatkan kemahiran mereka dalam menambah baik kualiti kehidupan. Sehubungan itu salah satu strategi pengajaran dan pembelajaran yang digunakan di bilik darjah adalah pembelajaran yang melibatkan deria. Penggunaan deria dalam pengajaran dan pembelajaran merupakan sesuatu yang menyeronokkan kerana pelajar belajar melalui aktiviti visual, imej, warna, aroma terapi dan bunyi. Pembelajaran yang melibatkan deria ini mempunyai keupayaan untuk mempengaruhi pelajar untuk belajar. Dalam masa yang sama kemahiran mendengar adalah salah satu kemahiran belajar yang perlu sentiasa diasah dan dipertajamkan agar ianya mampu untuk berfikir secara kritis dan kreatif.

Menurut Carey (2002), dalam aspek bunyi ia merujuk kepada ucapan, bunyi bising dan muzik. Pakar sains saraf pula mendapati bahawa aspek bunyi tersebut diproses di bahagian otak yang berlainan. Oleh itu daripada semua rangsangan emosi, muzik dianggap yang paling istimewa. Yehudi Menuhin (1979), menganggap muzik sebagai satu bentuk luahan perasaan yang jelas terutamanya apabila ia menyentuh emosi diri. Sementara Mursell menurut Elliot (1995) menyatakan bahawa dalam hal kesenian muzik adalah yang paling emosional. Muzik adalah intipati emosi pengalaman yang terhablur dalam nada.

Dalam hal berkaitan, Stephen Handel (1989) menjelaskan mengapa muzik lebih emosional daripada seni visual. Menurut beliau mendengar itu adalah sentripetal. Ia akan menarik anda untuk melihat dunia atau memisahkan anda daripada dunia. Dalam konteks ini dunia dimaksudkan adalah dunia muzik. Justeru apabila muzik yang diperdengarkan melagukan kesedihan maka perasaan anda akan tersentuh sehingga menyebabkan anda mengalirkan air mata tanpa disedari. Ia diakui oleh saintis terkenal Stefan Koelsch (2005) yang mengesahkan hubungan muzik yang beremosi dengan pusat emosi di otak. Menurut Savan (1996) muzik akan bertindak untuk melakukan perubahan fizikal disebabkan oleh emosi dan perubahan fisiologi yang tidak dapat dipisahkan. Muzik mampu mendorong emosi dengan kesungguhan yang cukup kuat. Sehubungan itu muzik menerusi emosi, akan membangkitkan perasaan yang mampu memanipulasi tingkah laku manusia.

Ahli falsafah pendidikan muzik Elliot (1995) menegaskan bahawa matlamat sebenar dalam kehidupan adalah pertumbuhan diri, penghargaan kendiri, dan keseronokan. Pertumbuhan diri bukan hanya daripada introspeksi dan pengetahuan diri tetapi berkenaan dengan memahami dunia di sekeliling kita. Kejayaan memperoleh pengetahuan diri adalah disebabkan oleh penghargaan kendiri yang telah menyediakan pengalaman baru bagi meningkatkan kesedaran diri. Dalam hal ini penghargaan kendiri sangat penting dalam membentuk tingkah laku positif demi kesediaan belajar. Penghargaan kendiri akan memacu kehendak untuk belajar dan seterusnya memperoleh kejayaan dalam pelajaran. Oleh yang demikian individu yang telah masuk ke tahap pertama aliran akan bermotivasi untuk memperoleh kejayaan dalam pelajaran.

Sementara itu dalam teori pembelajaran kognitf pula, minda mempunyai sumber perhatian yang terhad dalam memproses arus maklumat yang selari. Minda boleh tunduk kepada beban terutamanya apabila terlalu banyak maklumat yang perlu diproses. Oleh itu dalam konteks muzik, beban maklumat yang banyak dijangka akan mengganggu proses kognitif. Bagaimanapun berdasarkan teori kecerdasan pelbagai yang dipelopori oleh Gardner, perkara tersebut disangkal kerana pemprosesan kecerdasan berlaku secara berasingan di bahagian berlainan di otak. Pengkategorian tentang halangan pula dibuat bukan secara langsung. Justeru sebarang peningkatan dalam prestasi tugasan ia akan meningkatkan pencapaian akademik.

Berdasarkan hukum Yerkes-Dodson, setiap rangsangan akan meningkatkan prestasi tugasan kepada tahap optimum. Namun sebaik sahaja tahap tersebut menyeberangi tahap optimum prestasi tugasan akan merosot. Oleh yang demikian, Hallam, Price *et al.,* (2002) mencadangkan agar muzik boleh digunakan untuk mengekalkan tahap kesungguhan pelajar untuk belajar. Walau bagaimanapun semuanya bergantung kepada set tugasan yang diberi. Semakin besar cabaran untuk kognitif, semakin kurang rangsangan diperlukan. Sementara itu tugasan yang memerlukan stamina, kegigihan dan penilaian akan mendapat manfaat daripada tahap yang lebih tinggi sebagai rangsangan untuk meningkatkan motivasi.

Dalam hal berkaitan, Furham dan Allass (1999), mencadangkan faktor profil personaliti perlu diambil kira sebelum mempertimbangkan tentang rangsangan. Berpandukan kepada teori Eysenck's 1967, yang mana jenis personaliti dilabelkan sebagai introvert dan extrovert, Furham dan Allass (1999), mendakwa bahawa jenis personaliti akan menentukan jumlah rangsangan luar yang diperlukan bagi menghasilkan tahap optimum rangsangan. Pada kebiasaanya personaliti manusia adalah unik. Ia akan berada di mana-mana antara introvert-extrovert mengikut kesesuaian. Apa yang jelas adalah personaliti manusia tidak berada pada kedua-dua kutub sepanjang masa. Para pelajar introvert memerlukan sedikit rangsangan agar pelajar tidak berasa bimbang dan cemas berbanding dengan pelajar exstrovert yang menginginkan tahap rangsangan yang agak tinggi dalam bertoleransi dengan muzik. Hasil kajian Furham dan Allass (1999), mendapati bahawa personaliti introvert melaksanakan tugasnya dengan baik dalam suasana senyap berbanding dengan personaliti extroverts. Oleh yang demikian dapatlah difahami bahawa tahap rangsangan personaliti diperlukan untuk mencapai rangsangan yang optimum bagi setiap individu.

1.2   *Penggunaan Muzik Latar Dalam Bilik Darjah*

Muzik latar merupakan muzik yang dimainkan untuk tujuan didengar secara pasif. Ia menyentuh dan meresapi kehidupan seharian kita tanpa disedari. Ia berlaku semasa kita sedang memandu, membeli belah, menjamu selera, membaca dan bekerja. Muzik latar digunakan secara meluas dalam masyarakat terutamanya dalam bidang pemasaran, psikologi sukan, dan perubatan. Ia digunakan dengan tujuan mengurangkan tekanan, mencipta ilusi, memanipulasi persepsi, mengubah keadaan emosi dan meningkatkan kesejahteraan kehidupan. Sehubungan itu penggunaan muzik latar turut digunakan di bilik darjah sebagai satu strategi pengajaran dan pembelajaran guru dalam usaha meningkatkan prestasi pelajar selain memastikan aktiviti pembelajaran menjadi satu aktiviti yang menyeronokkan.

Penggunaan muzik latar di bilik darjah lebih bertumpu kepada aktiviti menulis, membaca, mengira dan aktiviti kerja dalam kumpulan. Scot (1970) mendapati bahawa memperkenalkan muzik latar di bilik darjah mempunyai pengaruh untuk bersikap tenang. Savan (1996) dalam kajiannya mendapati bahawa apabila muzik latar dimainkan pelajar menjadi lebih tenang dan bekerjasama dalam menyiapkan tugasan berkumpulan. Justeru para pelajar menjadi lebih produktif apabila muzik latar diperkenalkan di bilik darjah.

2.0 Sorotan Kajian Kesan Penggunaan Muzik Latar

Dalam konteks pembelajaran di bilik darjah, tujuan muzik latar digunakan adalah bagi memperbaiki kualiti dan kuantiti kerja pelajar. Disamping itu ia membantu mewujudkan kesediaan belajar dan merubah tingkah laku negatif para pelajar. Sorotan kajian tentang kesan muzik latar terhadap tumpuan, kognitif, prestasi, tingkah laku, motivasi dan *mood* memberi gambaran yang positif.

2.1 *Kognitif*

Salah satu tanggapan yang sering diperbesarkan oleh media tentang hubungan antara muzik dengan keupayaan kognitif adalah kesan muzik Mozart untuk membuat bayi menjadi lebih pintar. Menurut Rauscher, Shaw & Ky (1993) muzik klasik yang disusun khas oleh Mozart mampu meningkatkan prestasi kognitif. Bowman's (2007) dalam kajiannya mendapati bahawa muzik Mozart dapat meningkatkan keupayaan pemahaman mendengar.

Sementara itu Miller (2014) ada menyatakan bahawa, pelajar yang mengambil ujian IQ sejurus selepas mendengar muzik Mozart mempunyai skor yang lebih baik berbanding dengan hari sebelumnya, yang mana mereka telah mengambilnya tanpa muzik terdahulu. Walaupun kajian tersebut dibuat secara singkat namun hujahan tentang hasil dapatan kajian tersebut memberi manfaat kepada proses kognitif.

Ramai penyelidik telah membina konsep asal kesan muzik Mozart ini. Kajian Jausovec, Jauservic dan Garlic (2006) mendapati bahawa mendengar muzik Mozart membantu mengaktifkan bidang tugas yang berkaitan dengan otak dan menutup bahagian-bahagian otak yang tidak relevan. Sementara Caldwell Tiby (2007), mendapati bahawa terdapatnya kesan sejagat dan unik dalam muzik klasik Mozart. Perubahan kognitif berlaku pada peringkat pra pemerhatian ketika pelajar melaksanakan tugasan pertama.

Justeru berdasarkan kepada dapatan kajian tersebut, terdapatnya keperluan untuk membuat kajian lanjutan bagi memahami aspek muzik klasik dan kesannya kepada otak. Hasil kajian Harmon *et al.,* (2008), mendapati bahawa mendengar muzik Mozart telah mencipta gelombang alpha di otak yang melibatkan aktiviti kognitif sehingga menghasilkan peningkatan dalam persembahan.

Selain itu, kajian tentang kesan muzik latar terhadap keupayaan kognitif turut menunjukkan hasil yang positif. Kajian Hall (1952) mendapati bahawa muzik mampu meningkatkan keupayaan kognitif. Sementara Hayness (2003) dalam kajiannya pula mendapati bahawa belajar dengan adanya muzik latar dapat mengurangkan kebimbangan pelajar. Skor

pencapaian pelajar pula tidak terjejas walaupun tahap kebimbangan pelajar tinggi ataupun rendah.

Bagaimanapun hasil kajian Fogelson's (1973) menunjukkan bahawa mendengar muzik semasa melaksanakan tugasan boleh mengganggu proses kognitif yang kompleks. Begitu juga dengan kajian Smith and Morris (1977), Dolegui, A. S. (2013), yang mendapati bahawa semasa ujian pemprosesan kognitif pelajar berjaya melaksanakan tugasan yang diberi dengan lebih baik tanpa muzik latar. Oleh yang demikian dapat kita fahami bahawa dalam semua situasi yang dinyatakan, kesan muzik latar terhadap keupayaan kognitif turut bergantung kepada gaya belajar pelajar, jenis muzik dan persekitaran pembelajaran.

2.2 Tumpuan

Banyak kajian yang telah dibuat oleh para sarjana bagi mengkaji kesan muzik latar terhadap tumpuan pelajar. Kristin J.Sigman, B.S., (2005), dalam kajiannya mendapati bahawa tidak ada perubahan pada tahap tumpuan apabila muzik latar digunakan dalam persekitaran pembelajaran. Sementara hasil kajian Thompson, Schellenberg dan Letnic, (2011), pula menunjukkan bahawa tempo muzik yang cepat dan laras bunyi yang kuat mengganggu pemahaman bacaan teks petikan rencana. Mereka juga mendapati yang mendengar jenis muzik latar instrumental dalam tempo yang berubah-ubah, turut mengganggu tahap tumpuan ketika membaca.

Namun ia berbeza dengan hasil dapatan para sarjana yang lain. Bade,D., Bade,R., Hoerres,D., Kremsreiter,A. (2012) dalam kajian mereka mendapati bahawa mendengar muzik dalam tempo yang berbeza ketika menyiapkan tugasan yang mudah tidak mengganggu tumpuan. Begitu juga dengan hasil dapatan kajian Sarah Elizabeth Maas (2013), mendapati bahawa muzik klasik sebagai muzik latar mempunyai hubungan positif dengan skor matematik, berbanding dengan muzik rap dan rock yang hanya memberi sedikit kesan terhadap skor matematik.

Oleh yang demikian dapatlah difahami bahawa budaya membaca dengan persekitaran yang senyap di bilik darjah menjadi salah satu faktor mengapa memainkan muzik latar ketika membaca mengganggu tumpuan. Selain itu laras bunyi muzik yang diperdengarkan turut menjadi punca kepada hilangnya tumpuan ketika membaca. Walau bagaimanapun gaya belajar pelajar pada hari ini sebenarnya akan menentukan sama ada muzik latar yang diperdengarkan mengganggu tumpuan atau tidak.

2.3 Prestasi

Kajian berkaitan dengan kesan muzik latar terhadap peningkatan atau penurunan prestasi banyak dibuat oleh para sarjana.Kebanyakan hasil kajian tersebut menunjukkan hasil yang positif. Hall (1952), dalam kajiannya mendapati bahawa apabila muzik latar dimainkan prestasi ujian bacaan menjadi bertambah baik. Sementara Scott (1970), pula mendapati bahawa muzik latar dapat meningkatkan prestasi akademik kanak-kanak hiperaktif.

Manakala hasil kajian Nasser Rashidi (2011), mendapati bahawa terdapat perbezaan yang signifikan antara prestasi pelajar yang membaca petikan pemahaman dalam keadaan mendengar

muzik latar Mozart dengan tanpa mendengar muzik latar. Begitu juga dengan, kajian Adelfa C. Silor (2012) yang mendapati bahawa, pelajar yang menjawab soalan ujian pemahaman bacaan dengan menggunakan muzik klasik sebagai muzik latar, mendapat skor yang lebih tinggi berbanding dengan keputusan pelajar yang mengambil ujian pemahaman tanpa muzik klasik sebagai muzik latar.

Namun begitu hasil kajian Harmon, L.,Troester, K., Pickeick, T., Pelosi, G. (2008) mendapati bahawa jenis muzik tidak memberi kesan terhadap pembelajaran. Manakala kajian Jäncke, Sandmann (2010), turut menunjukkan bahawa menggunakan muzik latar yang berbeza tidak mempengaruhi peningkatan pembelajaran lisan. Justeru dalam hal sedemikian dapatlah kita fahami bahawa jenis muzik latar yang berbeza tidak mempengaruhi tidak tahap peningkatan prestasi pelajar.

2.4 Tingkah Laku

Menurut Lewis (2002), kajian para sarjana telah membuktikan bahawa muzik klasik barat mampu menenangkan tingkah laku pelajar. Hasil kajian Kevin N. White (2007), mendapati bahawa menggunakan muzik latar di bilik darjah sangat efektif. Penggunaan muzik di bilik darjah memberi kesan positif bukan sahaja kepada individu tetapi keseluruhan pelajar di bilik darjah.Tingkah laku pelajar pula bertambah baik dan bermotivasi untuk belajar serta berkeupayaan untuk melaksanakan tugasan yang diberi. Hasil kajian tersebut selaras dengan dapatan kajian Terasa Lesiuk (2005), yang mendapati bahawa muzik latar memainkan peranan penting dalam membentuk minda positif semasa menjalankan tugas sehingga meningkatkan tahap kualiti kerja. Sementara itu hasil kajian Alexzender R Gather (2010), pula mendapati bahawa mendengar muzik bukan komersial sebagai bahan bantu mengajar sangat berkesan dalam memandu pelajar untuk meningkatkan tahap kemahiran belajar.

Kajian Savan (1996) yang mendapati bahawa kesan muzik latar terhadap tingkah laku pelajar sangat luar biasa. Walaupun semasa muzik latar dimainkan, keadaan pelajar tetap tenang dan saling bekerjasama. Ia selaras dengan hasil kajian Hallam, S. Price, J. dan Katasaou, G. (2002), yang mendapati bahawa muzik yang menenangkan dan santai mempunyai kesan positif terhadap tingkah laku pelajar dalam mengatasi masalah matematik dan mengingati kata-kata dari ayat.

Kajian Scot (1970), pula mendapati bahawa pengenalan muzik latar di bilik darjah mempunyai pengaruh terhadap persekitaran yang menenangkan. Kajian Rauscher, F. (1993), mendapati bahawa pelajar yang mendengar muzik Mozart Sonata K448 lebih cepat dan lebih baik dalam melaksanakan tugasan. Menurut Hallam, S. dan Price, J. (1998), hasil kajian Hall (1952) mendapati bahawa prestasi pada ujian pemahaman bacaan telah menjadi bertambah baik apabila muzik latar dimainkan.

Anderson *et al.,* (2000), menyatakan bahawa kebanyakan para guru percaya yang muzik mampu membantu mencipta emosi yang positif dan persekitaran yang kondusif untuk belajar. Menurut Lawrence (2001), memperdengarkan muzik latar di bilik darjah sangat berkesan dalam membantu pelajar menyiapkan tugasan dengan senyap. Kajian Dinsmore (2003) mendapati

bahawa lebih separuh pelajar dalam kajiannya berasa lebih selesa dan santai dengan muzik yang lembut sewaktu melaksanakan tugasan.

Kajian Rauscher, F. (1993), mendapati bahawa pelajar yang mendengar muzik Mozart Sonata K448 melaksanakan tugasan yang diberi dengan lebih cepat dan lebih baik. Olhlhaverl (1998) menyatakan bahawa muzik latar mampu mempengaruhi denyut jantung, postur tubuh dan gambaran mental pendengarnya. Oleh yang demikian, dapatlah kita fahami bahawa penggunaan muzik latar di bilik darjah telah membawa kepada perubahan tingkah laku pelajar yang positif.

2.5   *Mood dan Motivasi*

Dalam kajian Summers, Hoffman, Neff, Hanson, dan Pierce (1990), mendapati bahawa muzik santai yang dimainkan sebagai muzik latar turut membantu untuk mewujudkan perasaan tenang di hati. Ia selaras dengan dapatan kajian Middleton,T., Gauthier,A., Grenier,S. (2012) yang menunjukkan bahawa mendengar muzik sebelum melaksanakan tugasan mampu memberi ketenangan hati. Krumhansl, (1997); Scheel dan Westefeld, (1999); Rentfrow dan Gosling, (2003) mengakui bahawa memang terdapatnya hubungan antara berbagai jenis muzik dan *mood* (suasana hati). Walau bagaimanapun hasil kajian Christopher Rea, Pamelyn Macdonald, Gwen Carnes, (2010), pula mendapati bahawa terdapat perbezaan yang signifikan dalam mood (suasana hati) antara muzik latar klasik, heavy metal, dan muzik pop. Sehubungan itu dapatlah kita fahami bahawa jenis muzik latar yang diperdengarkan turut memberi kesan kepada *mood* (suasana hati) sekiranya digunakan sebagai salah satu bahan bantu mengajar bagi menjadikan pembelajaran satu yang menyeronokkan.

Penggunaan muzik latar dalam bilik darjah sebenarnya mampu meningkatkan motivasi pelajar untuk belajar. Kajian Tucker (1981) menunjukkan bahawa penggunaan muzik latar dalam pengajaran membaca boleh meningkatkan motivasi pelajar. Hasil daripada dorongan tersebut turut meningkatkan kebolehan membaca kanak kanak. Sementara kajian Foster,C., Pocari,J., Anders,M. (2010) pula mendapati bahawa semakin cepat tempo muzik akan meningkatkan tahap kesungguhan pelajar melaksanakan tugasannya. Justeru, tidak hairanlah sekiranya dapatan kajian Kevin N. White (2007) menunjukkan bahawa terdapat hubungan yang kuat antara muzik latar dengan meningkatnya motivasi pelajar untuk belajar.

3.0   Meta-Analisis Kajian Kesan Penggunaan Muzik Latar 2010-2014

Berdasarkan meta-analisis kajian penggunaan muzik latar dari tahun 2010 – 2014 mendapati bahawa kebanyakan kajian yang di buat menggunakan reka bentuk kajian eksperimental. Lagu-lagu (muzik) yang dipilih merupakan lagu klasik barat dengan keutamaan diberikan kepada lagu hasil karya komposer Mozart. Selain itu muzik Rock, Rap turut digunakan sebagai muzik latar. Dalam hal yang sama, tempo muzik dan laras bunyi turut diambil kira kerana ia memberi kesan yang berbeza. Hasil kajian yang dibuat oleh para sarjana ini lebih berfokus kepada kesan motivasi, tingkah laku, tumpuan, dan pencapaian. Sementara cadangan kajian lanjutan adalah berkait rapat dengan pemilihan jenis muzik dan gaya belajar pelajar.

Jadual 1**: Meta-Analisis Kajian Kesan Penggunaan Muzik Latar 2010-2014**

Pengarang /Tahun	Tajuk	Kekunci Penemuan
Chraif, Mitrofan, Goluc, Gâtej 2014	*The influence of progressive rock music on motivation regarding personal goals, motivation regarding competition and level of aspiration on young students in psychology*	Muzik progresif boleh menjadi satu rangsangan penting untuk meningkatkan prestasi di tempat kerja.
Sarah Elizabeth Maas 2013	*The Effect of Background Music on Math Test Performance of High School Students*	Muzik klasik mempunyai hubungan positif dengan pencapaian skor matematik
Adelfa C. Silor 2012	*Effectiveness of Classical Music as Background in the Story Video Comprehension Strategy among Students with Multiple Intelligence*	Dalam integrasi kaedah-kaedah dalam pengajaran, penggunaan teknologi maklumat adalah sangat berkesan.
Thompson, Schellenberg, Letnic 2011	*Fast And Loud Background Music Disrupts Reading Comprehension*	Tempo muzik yang pantas dan laras bunyi yang kuat mengganggu pemahaman bacaan teks petikan rencana
Nasser Rashidi, Farman Faham 2011	*The Effect of Classical Music on the Reading Comprehension of Iranian Students*	Terdapat perbezaan yang signifikan antara prestasi pelajar yang membaca petikan pemahaman dalam keadaan mendengar muzik latar Mozart dengan tanpa mendengar muzik latar.
Jäncke, Sandmann 2010	*Music listening while you learn: No influence of background music on verbal learning*	Menggunakan muzik latar yang berbeza tidak mempengaruhi peningkatan pembelajaran lisan.
Peter Tze – Ming Chou 2010	*Attention drainage effect: How background music effects concentration in Taiwanese college students*	Muzik yang intensiti tinggi sangat mengganggu dan memberi kesan kepada tumpuan dan pencapaian

4.0 Isu Dalam Pemilihan Muzik Latar Untuk Penyelidikan

Terdapat isu dalam penyelidikan tentang kesan penggunaan muzik latar di bilik darjah. Pemasalahan tersebut ada hubungannya dengan pemilihan muzik latar. Pemilihan muzik latar oleh para penyelidik adakalanya berdasarkan kepada muzik yang digunakan dalam kajian lepas. Persoalannya kini, sejauh manakah keupayaan muzik latar yang dipilih membantu memperoleh gerak balas dan tingkah laku pelajar yang dihasratkan.

4.1   Jenis Muzik

Kebanyakan muzik latar yang dipilih oleh pengkaji adalah berdasarkan kepada jenis muzik dan bukannya disebabkan oleh konsep muzik yang ada. Menurut Furnham dan Allass (1999), jenis muzik tidak menggambarkan ciri ciri muzik tersebut terutamanya dalam hal berkaitan dengan aspek rangsangan mahupun gangguan. Sebagai contoh muzik smooth jazz yang digunakan untuk menjadi muzik latar dalam mengkaji kesan muzik latar terhadap pembelajaran di bilik darjah. Persoalannya adalah sejauh manakah pengkaji mengetahui konsep muzik yang terdapat dalam smooth jazz tersebut.

Barber dan Barber (2005) mentakrifkan muzik 'Smooth Jazz' sebagai muzik yang lembut bunyinya, bermelodik, mempunyai warna ton yang sejuk, tidak mengganggu, muzik yang lancar, jelas dan santai. Apa yang pasti tempo muziknya perlahan dan sederhana dengan pic yang sempit dan renj yang pelbagai serta tekstur yang ringkas. Sehubungan itu adakah memadai dengan pengkaji mengetahui tempo muzik tersebut tanpa memikir konsep yang lain yang turut menyumbang kapada kesan penggunaan muzik latar terhadap pembelajaran. Justeru persoalan ini sentiasa menjadi isu dalam kajian kesan penggunaan muzik latar terhadap pembelajaran di bilik darjah.

4.2   Tempo Muzik

Muzik bertempo cepat atau perlahan? Perkara ini sering menjadi delima kepada pengkaji yang mengkaji kesan penggunaan muzik di bilik darjah. Menurut Dell Bella, Peretz et al., (2001) terdapat kecenderungan semulajadi untuk mengaitkan tempo muzik dengan pertimbagan emosi. Brodsky (2005), dalam kajiannya mendapati bahawa pendengar menemui beberapa tempo muzik yang menyeronokkan dan dapat melihat perbezaan yang jelas mengenai kadar kelajuan tempo muzik dan kesan kepada emosi dan tingkah laku.

Dalam hal berkaitan, Havner (1935) berpendapat bahawa muzik yang tempo kelajuannya lambat sering kali dikaitkan dengan ketenangan, sentimental, formal dan sedih. Manakala tempo muzik yang cepat atau pantas dan mewujudkan suasana ceria dan mengembirakan. Bagi Furnham dan Allass (1999), muzik yang mempunyai tempo yang cepat meningkatkan tahap keinginan yang tinggi berbanding dengan muzik bertempo perlahan. Walau bagaimanapun muzik bertempo cepat lebih kompleks jika dibuat perbandingan dengan muzik yang bertempo perlahan.

Sehubungan itu apakah tempo muzik yang serng digunakan oleh pengkaji kesan penggunaan muzik di bilik darjah? Menurut Kellaris dan Kent (1993), pada kebiasaanya muzik latar yang digunakan di bilik darjah adalah dalam tempo kelajuan 60 hingga 120 detik per minit. Bagaimana pun tempo muzik yang menjadi minat para pengkaji adalah dalam lingkungan 70 hingga 110 detik per minit. Dalam pada itu perbezaan tempo cepat dan perlahan adalah berkait rapat dengan rangsangan berbanding dengan emosi.

Sebagaimana yang kita maklum, irama yang didengar akan membangkitkan gerak balas fizikal seperti menepuk detik, menggoyangkan kepala atau menghentak kaki. Justeru pengkaji perlu memahami muzik latar yang manakah sesuai digunakan dalam kajian mereka. Apa yang

pasti muzik latar diperdengarkan perlu berada dalam lingkungan muzik yang menyenangkan dan dapat diterima oleh pendengar

5.0 Kesimpulan

Sebagai kesimpulan kepada perbincangan tadi dapatlah kita fahami bahawa penggunaan muzik latar terhadap pembelajaran di bilik darjah sememangnya memberi kesan kepada tingkah laku dan gerak balas pelajar. Selain itu, penggunaan muzik di bilik darjah mampu meningkatkan persekitaran pembelajaran. Bagaimana pun semuanya ini bergantung kepada kebijaksanaan dalam pemilihan muzik latar dan fasilitinya. Ia secara tidak langsung membawa maksud bahawa pentingnya pengkaji mempunyai pengetahuan asas tentang psikologi muzik terlebih dahulu sebelum membuat kajian mengenainya.

Pelbagai perpektif telah dibincangkan tentang kesan positif penggunaan muzik latar terhadap pengajaran dan pembelajaran di bilik darjah. Antaranya adalah kesan terhadap tingkah laku positif, motivasi, membangkitkan keinginan, mood serta perasaan untuk belajar, meningkatkan tahap tumpuan, keupayaan kognitif, dan pencapaian atau prestasi. Namun begitu kesan positif penggunaan muzik latar ini mempunyai kaitannya dengan mendengar muzik secara pasif. Oleh itu, ianya masih boleh didebatkan kerana mendengar muzik secara pasif bertujuan untuk menetapkan *mood* (suasana hati).

Walaupun kita fahami bahawa penggunaan muzik latar di bilik darjah mampu membangkitkan kesediaan untuk belajar namun pengkaji perlu menyedari tentang muzik yang sesuai dan tidak sesuai untuk digunakan dalam membuat kajian tentang muzik latar. Kepelbagaian jenis muzik memberi kesan psikologi yang berbeza. Ditambah lagi dengan beban pemprosesan kognitif yang melibatkan aktiviti membaca sambil mendengar muzik latar. Selain itu tempo, tonaliti dan laras bunyi adalah tiga unsur yang perlu diambil kira semasa menjalankan kajian mengenai penggunaan muzik latar terhadap aktiviti membaca di bilik darjah.

Sehubungan itu penyelidikan yang ingin dilaksanakan akan menjurus kepada kesan berlainan jenis muzik latar terhadap keupayaan pelajar dalam kefahaman membaca. Sebagaimana yang kita maklum banyak kajian muzik latar ini akan mengaitkan kebenaran kesan muzik Mozart. Justeru, apakah jenis muzik lain seperti muzik tradisional tidak akan memberi kesan yang sama seperti mana muzik Mozart? Oleh itu, kajian perlu dibuat bagi melihat sejauh mana kesan muzik tradisional berperanan sebagai muzik latar kepada aktiviti pelajar tempatan.

Tumpuan kajian adalah kepada instrumental muzik klasik Barat, dan Instrumental Melayu Asli. Dalam hal ini pengkaji membuat andaian bahawa kumpulan kawalan tanpa muzik akan mempunyai tahap pemahaman dan pencapaian yang berbeza daripada kumpulan yang mendengar muzik latar berdasarkan kepada gaya belajar pelajar. Pengkaji juga membuat andaian bahawa muzik instrumental Melayu Asli akan memberi kesan positif terhadap kefahaman membaca pelajar daripada muzik klasik barat disebabkan oleh latar belakang pelajar yang berbeza.

Sementara itu teori pembelajaran kognitif digunakan sebagai panduan bagi pelaksanaan kajian. Ahli-ahli psikologi kognitif berpendapat bahawa pembelajaran adalah suatu proses

dalaman yang berlaku dalam akal fikiran dan tidak dapat diperhatikan secara langsung daripada tingkah laku manusia. Seterusnya, satu lagi teori yang dijadikan panduan adalah teori *Lazarus* (emosi). Dalam teori ini sebelum gerak balas fisiologi dan emosi hadir, pemikiran akan datang terlebih dahulu kesan daripada rangsangan pengalaman atau peristiwa. Seperkara lagi yang agak penting adalah hukum Yerkes-Dodson (arousal) yang mana semakin tinggi cabaran semakin meningkatnya motivasi.Walau bagaimanapun teori personaliti Eysenck akan dijadikan panduan dalam konteks melihat tahap gangguan membaca pelajar yang personalitinya introvert dan extrovert.

Justeru dalam memenuhi keperluan persekitaran pembelajaran yang memiliki personaliti bercampur-campur, pemilihan jenis muzik sebagai muzik latar sangat penting. Dalam hal ini muzik yang dipilih adalah muzik yang tidak kompleks. Apa yang dimaksudkan di sini adalah muzik yang ringkas dan dibebani maklumat yang bebannya rendah. Namun kita perlu sedar bahawa bukan semua pelajar akan beroleh manfaat daripada muzik latar ini namun sekurang-kurangnya ia mampu mengurangkan masalah disiplin di bilik darjah ketika berlakunya aktiviti kefahaman membaca.

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Penggunaan Aplikasi Web 2.0 dan Pelaksanaan Model "*Flipped Classroom*" Dalam Aktiviti Pengajaran dan Pembelajaran

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Abstrak:

Kertas kerja ini merupakan kertas konsep yang memperlihatkan perkembangan teknologi yang semakin moden dan berdaya saing memberi kekuatan kepada perubahan sistem pendidikan global. Kemudahan teknologi berperanan dalam pengajaran dan pembelajaran dalam melahirkan generasi yang berpendidikan sempurna. Pendekatan pembelajaran atas talian berkemampuan meningkatkan perubahan tingkah laku secara individu dalam menguasai kemahiran. Keperluan pembelajaran atas talian mendorong para pelajar menguasai pengetahuan yang berkesan disebabkan keberkesanan interaksi sumber pengajaran disampaikan menggunakan kemudahan teknologi. Walau bagaimanapun pembelajaran atas talian menghadapi kekangan dalam pelaksanaannya. Di mana perubahan yang drastik dan tergesa-gesa dalam melaksanakan pembelajaran atas talian dalam masa yang singkat menghadapi kegagalan pelaksanaannya. Maka pendekatan pengajaran dan pembelajaran menggunakan aplikasi web 2.0 dibangunkan untuk penguasaan pengetahuan dan kemahiran yang lebih mewujudkan suasana mesra pengguna dan fleksibiliti. Seterusnya, meningkatkan penglibatan pembelajaran pelajar dalam pembelajaran secara aktif. Aplikasi web 2.0 seperti *Padlet, Google Slide, Google Doc* dan *Jing* merupakan salah satu kaedah penguasaan pengetahuan yang mempunyai ketekalan berasaskan sosialisasi, kolaboratif dan komunikasi. Kemudahan aplikasi web 2.0 semakin bererti apabila integrasinya diselarikan dengan pendekatan pembelajaran teradun. Sesungguhnya kekuatan sesuatu sumber pengajaran yang ditawarkan memerlukan sokongan padu antara pendekatan dan kemudahan teknologi. Oleh itu, reka bentuk pembelajaran teradun yang sesuai ketika ini adalah model "*Flipped Classroom*" Keberkesanan pelaksanaan model "*Flipped Classroom*" lebih memfokuskan kepada strategi pengajaran dan pembelajaran, persekitaran pembelajaran pelajar dan sumber bahan secara atas talian. Oleh yang demikian, kertas kerja ini akan membincangkan keberkesanan pelaksanaan model "*Flipped Classroom*"dalam proses pengajaran dan pembelajaran.

Kata kunci: Pembelajaran Atas Talian, Aplikasi Web 2.0, Pembelajaran Teradun, Model "*Flipped Classroom*", Peningkatan.

1.0   Pengenalan

Pendidikan merupakan pencetus kepada pembangunan sosial dan ekonomi sesebuah negara dalam persaingan global. Justeru itu, pendidikan terkini merupakan pelengkap kepada generasi baru di masa depan. Di mana arus perkembangan teknologi yang semakin moden telah

menyuntik pembaharuan dalam sistem pendidikan (Kurt, 2017). Suntikan ini telah melebarkan ruang dan peluang kepada generasi baru mengembangkan daya kreativiti dan inovasi dalam persaingan ekonomi global. Sesuai dengan pandangan Dias & Diniz (2012) menyatakan bahawa kemudahan teknologi yang disepadukan dalam pengajaran dan pembelajaran akan melahirkan sebuah generasi berpendidikan yang dapat menguasai setiap kemahiran yang dirancangkan. Matlamat yang dijelaskan ini selaras dengan Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013 – 2025 dengan meletakkan visi sistem pendidikan dan aspirasi pelajar yang akan menyumbangkan pembangunan negara.

Keperluan kemudahan aplikasi teknologi sangat sesuai dengan pendekatan pengajaran dan pembelajaran pada ketika ini. Sehingga transformasi PPPM 2013 – 2025 meletakkan Anjakan 7 sebagai keperluan aplikasi teknologi dalam meningkatkan kualiti pembelajaran di Malaysia. Walau bagaimanapun terdapat beberapa pandangan yang menyatakan keperluan aplikasi teknologi dalam pembelajaran atas talian sahaja tanpa pembelajaran bersemuka boleh menyebabkan sumber bahan hanya menjadi rujukan sahaja kepada pelajar. Menurut pandangan Miranda, Isaias & Costa (2014) dan Penfold & Pang (2008) pelaksanaan pembelajaran atas talian yang berpandukan sumber bahan tanpa metodologi pengajaran akan menghalang pelajar untuk menguasai kandungan pembelajaran mereka. Seterusnya pendekatan pengajaran dan pembelajaran yang berasaskan aplikasi teknologi disepadukan dengan interaksi secara bersemuka berjaya menunjukkan kemampuan merangsang dan meningkatkan kemahiran pelajar (Razak & Rahman, 2013). Ini kerana kesepaduan penggunaan kemudahan teknologi web dalam membantu proses pengajaran dan pembelajaran bergantung kepada pemilihan salah satu model pedagogi yang sesuai dalam sistem pendidikan (Miranda, Isaias & Costa, 2014; Lal, 2011). Kesesuaian dan kepelbagaian strategi pengajaran yang disediakan mampu mewujudkan keberkesanan pembelajaran yang menarik dan bersifat realistik. Akhirnya berjaya merangsang keinginan pembelajaran pelajar yang bersifat fleksibel (Kurt, 2017; Razak & Rahman, 2013). Sehubungan dengan ini, dalam meningkatkan keberkesanan pendekatan pembelajaran yang variasi dan bersistematik gabungan aplikasi web 2.0 dan pendekatan pengajaran dan pembelajaran perlu diberikan perhatian. Gabungan ini perlu berpotensi membina pengetahuan dan kemahiran pelajar bersesuaian dengan objektif pembelajaran yang ditetapkan.

Pelaksanaan pendekatan pembelajaran teradun menggunakan model "*Flipped Classroom*" yang merupakan salah satu model dalam strategi pembelajaran teradun yang sangat digalakkan. Ini kerana melalui model ini yang menggunakan kaedah empat tonggak utama "*Flipped Learning*" dalam melaksanakan aktiviti pembelajaran dalam pelbagai mod menggunakan aplikasi web 2.0 juga dapat ditekankan (Afstorm, et. al., 2013). Selaras dengan cadangan Saliba et. al., (2013) dan Marsh (2012) yang menekankan kepentingan gabungan model "*Flipped Classroom*" dengan aplikasi web 2.0 melahirkan generasi baru yang berkompetensi dan berkemahiran dalam menguasai pembelajaran secara kendiri dan berkolaboratif terhadap persaingan global. Kurt (2017) pula menyarankan kesepaduan pendekatan pembelajaran teradun – model "*Flipped Classroom*" dengan aplikasi web 2.0 merupakan sebuah pendekatan yang fleksibel dan menjimatkan tetapi menghasilkan impak yang besar terhadap pembelajaran individu. Sewajarnya model "*Flipped Classroom*" merupakan sebuah pendekatan pedagogi yang disokong kukuh dengan teori pembelajaran konstruktivisme dan aplikasi web 2.0 seperti *Padlet, Google Slide*, *Google Doc* dan *Jing* dapat menyalurkan

sumber kandungan berbentuk interaktif terhadap pembelajaran pelajar yang sempurna (Kurt, 2017; Miranda et. al., 2014).

2.0 Keperluan Pembelajaran Atas Talian

Suasana perubahan dan keperluan kemahiran pembelajaran abad ke-21, mengharapkan peranan pembelajaran atas talian dalam sistem pendidikan terkini sangat ditagih pelaksanaannya. Berdasarkan sudut pandangan barat yang bersandarkan kepada konteks realiti terhadap kemudahan pengajaran dan pembelajaran menekankan elemen mengakses secara meluas melalui kemudahan teknologi komputer yang sempurna dalam kandungan kursus untuk mencapai hasil pembelajaran yang ditetapkan. Hal ini dikukuhkan dengan dapatan Allen & Seaman (2010) yang mendapati pendaftaran pelajar yang mengikuti pembelajaran atas talian telah berkembang dengan kadar melebihi jumlah pelajar yang mengikuti pengajian di institusi pendidikan tinggi. Dengan jumlah yang seramai ini, hampir tiga puluh peratus pelajar mengikuti sekurang-kurangnya satu kursus atas talian.

Sehubungan dengan itu, Saliba et. al., (2013) dan Burns (2011) menjelaskan bahawa pembelajaran atas talian merupakan strategi pembelajaran yang disesuaikan mengikut disiplin dan amalan terkini yang selaras dengan keperluan pelajar dan kandungan kursus mengikut hasil pembelajaran yang dilaksanakan secara atas talian. Pembelajaran ini dijalankan secara berpusat kepada pelajar yang mengikutinya secara fleksibiliti dalam mewujudkan pembelajaran secara aktif. Akhirnya, berjaya mendorong para pelajar menguasai pengetahuan dan kemahiran sebagai sebuah pencapaian pengalaman yang berkesan disebabkan wujudnya keberkesanan interaksi sumber pengajaran yang disampaikan menggunakan kemudahan teknologi. Keperluan dan kemudahan teknologi telah menghasilkan satu keupayaan pembelajaran yang meluas berbanding dengan pembelajaran berasaskan konvensional (Yang, 2013).

Seterusnya, Burns (2011) telah mencadangkan beberapa aspek utama dalam meningkatkan keperluan keupayaan dan potensi dalam pembelajaran atas talian. Antara aspek yang dicadangkan adalah seperti berikut;

a. Penyampaian dalam pelbagai bentuk seperti media cetakan, audio dan video.
b. Penyediaan dalam pelbagai format komunikasi merentasi masa dengan rakan sebaya melalui teks, audio dan video.
c. Penglibatan pembelajaran berbentuk terbuka dari segi masa dan tempat dengan bersandarkan kemudahan teknologi.

Aspek-aspek ini berjaya memberi peluang kepada pelajar dalam kesediaan pembelajaran mereka disebabkan gabungan kemudahan aplikasi teknologi yang dibekalkan menyebabkan pembelajaran ini boleh disifatkan sebagai satu fleksibiliti (Saliba et. al., 2013).

Oleh itu, warga pendidik perlu bersifat terbuka dan bersedia melaksanakan pembelajaran atas talian dengan menggunakan kemudahan aplikasi teknologi. Kesediaan dalam menyampaikan kandungan dan maklumat dalam pembelajaran pelajar yang bersandarkan pendekatan yang bersesuaian dapat memberikan implikasi penguasaan pembelajaran pelajar terhadap pengetahuan dan kemahirannya (Sayed, 2013; Discoll, 2002). Hal ini memberikan justifikasi yang penting

dalam pemindahan kandungan kepada penguasaan pembelajaran terhadap pengetahuan dan kemahiran pelajar. Selari dengan matlamat pembelajaran abad ke-21 yang ditetapkan ini. Selain itu, Saliba et. al., (2013) dan Dias & Diniz (2012) menjelaskan pemilihan pendekatan pengajaran yang berkesan dan fleksibel dalam melaksanakan pembelajaran atas talian telah membuka peluang kepada pelajar menentukan gaya pembelajaran dan memilih sumber kandungan bersandarkan kemampuan mereka. Sebagaimana yang dijelaskan oleh Saavedra & Opfer (2012) yang menyatakan bahawa perubahan pembelajaran dalam meningkatkan pengetahuan dan kemahiran dalam kalangan pelajar memerlukan sokongan dan amalan yang sempurna untuk menguasainya. Dikukuhkan lagi oleh Tseng & Walsh (2016) dan Chen & Jones (2007) menyatakan kesempurnaan penyampaian sumber kandungan pembelajaran yang tersusun berasaskan gabungan aplikasi teknologi yang dipelbagaikan. Seharusnya pencetus kemudahan aplikasi teknologi merupakan penyumbang kepada keperluan pembelajaran atas talian yang membawa ke arah berfikiran aras tinggi.

3.0   Kekangan Pelaksanaan Pembelajaran Atas Talian Dalam Pendidikan

Pada waktu kini, pembelajaran atas talian seharusnya memperlihatkan kejayaannya dan peluang kepada para pelajar untuk mengecapi persekitaran pembelajarannya. Melalui kemudahan aplikasi teknologi yang sedia ada telah mampu mengupayakan gaya pembelajaran pelajar yang dapat dibangunkan oleh warga pendidik. Peluang dan ruang ini sangat diharapkan dalam menjayakan interaksi dan gaya pembelajaran pelajar yang berkesan melalui pendekatan pembelajaran atas talian (Masarrah et. al., 2016; Burns, 2011). Namun harapan yang diletakkan ini tidak kesampaian kepada matlamatnya. Sebagaimana yang dijelaskan oleh Yuan et. al., (2013) bahawa pelaksanaan pembelajaran atas talian banyak mengalami halangan dan risiko dalam pengurusan pentadbirannya. Menurutnya lagi, keadaan ini semakin kompleks apabila hanya sekumpulan pakar teknologi di institusi pendidikan tinggi yang mengendalikan pendekatan ini. Penjelasan ini telah disokong oleh Fischer et. al., (2015) yang menyatakan kekangan utama pembelajaran atas talian pada ketika ini lebih terfokus kepada penguasaan kemahiran yang relevan perlu dikuasai oleh semua warga pendidik dalam mengaplikasikan kemudahan teknologi dan bukannya segelintir kumpulan sahaja.

Seterusnya, penyediaan latihan yang diberikan kepada semua warga pendidik dari kalangan pakar dalam bidang teknologi merupakan satu insentif yang disumbangkan kepada pendekatan pembelajaran atas talian. Penguasaan kemahiran kemudahan teknologi yang pelbagai dan multimodal dalam kalangan warga pendidik berkeupayaan membentuk kepelbagaian gaya pembelajaran yang dapat dikuasai oleh para pelajar. Oleh yang demikian, peranan golongan pakar kemudahan aplikasi teknologi amat diharapkan dalam merancang dan membangun pendekatan pembelajaran atas talian di institusi pendidikan tinggi sebagai satu keutamaan untuk masa depan walaupun penyediaannya memerlukan jangka masa yang panjang (Fischer et. al., 2015). Kepentingan yang disandarkan ini dalam mengatasi kekangan dalam pembelajaran atas talian bertujuan untuk melahirkan generasi pelajar yang dapat menguasai pengetahuan akademik, peningkatan kemahiran dan perkembangan kriteria pelajar (Gerstein, 2014). Supaya situasi ini dapat mewujudkan pengajaran dan pembelajaran atas talian yang diadunkan dengan pengajaran konvensional sebagai satu pendekatan baru yang menggalakkan penglibatan pembelajaran pelajar secara aktif (Yuan et. al., 2013).

Selain itu, kekangan yang menghalang keberkesanan pembelajaran atas talian disebabkan perancangan dan pembangunannya mengambil masa yang lama untuk disediakan oleh institusi pendidikan tinggi. Sebagaimana dijelaskan oleh Fischer et. al., (2015) walaupun institusi pendidikan tinggi menetapkan kepentingan pendekatan pembelajaran atas talian sebagai satu keutamaan di masa depan tetapi perancangan dan pembangunannya dilaksanakan dalam jangka masa yang lama. Hal ini mengakibatkan kepercayaan masyarakat umum terhadap pendekatan pembelajaran atas talian berada di tahap yang rendah. Sehingga memperlihatkan (Thompson, 2007) institusi pendidikan tinggi tidak mempunyai kesungguhan yang tekal dalam melakukan perubahan tersebut. Kesan daripada keadaan ini amat ketara terhadap keinginan dan keperluan pelajar untuk menguasai pengetahuan kandungan dan kemahiran yang menjadi teras dalam sistem pendidikan.

Masalah penggunaan istilah teknikal yang tidak selaras juga merupakan kekangan terhadap pelaksanaan pembelajaran atas talian. Kenyataan ini disandarkan kepada pendapat Fischer et. al., (2014) yang mempertikaikan keberkesanan pendekatan pembelajaran atas talian disebabkan kelemahan penggunaan istilah mengakibatkan kesukaran dalam membuat pernyataan konsep yang jelas terhadap kandungan kursus yang menggunakan kemudahan aplikasi teknologi. Seharusnya persekitaran pembelajaran pelajar berasaskan kemudahan aplikasi teknologi mewujudkan penguasaan pembelajaran baru melalui kemunculan teknologi yang canggih dengan pedagoginya yang bersifat inovatif. Tetapi institusi pendidikan tinggi masih lagi kecelaruan dalam menentukan istilah-istilah penggunaannya menyebabkan pembelajaran atas talian kurang berkesan (Whiteside, 2015). Oleh yang demikian, penggunaan istilah teknikal dalam pendekatan pembelajaran atas talian perlu diberikan perhatian yang sewajarnya oleh segenap warga pendidik di institusi pendidikan tinggi. Di mana kemampuan berkolaboratif dalam kalangan warga pendidik akan memberi impak yang positif (Saavedra & Opfer, 2012).

Namun persekitaran masyarakat pada ketika ini tidak seiringan dengan pembangunan pembelajaran atas talian. Pembangunannya (Fischer et. al., 2014) wujud dalam keadaan yang drastik dan tergesa-gesa dalam jangka masa yang singkat. Akibatnya menemui kegagalan dalam masa yang pantas. Walaupun pendekatan ini mempunyai elemen yang kukuh dan berpotensi dalam mewujudkan inovasi dalam sistem pendidikan sekarang tetapi mengundang pelbagai risiko (Yuan et. al., 2013). Sepertimana yang dijelaskan oleh Tseng & Walsh (2016) bahawa inovasi bahan dan sumber pembelajaran yang disampaikan menggunakan kemudahan aplikasi teknologi dengan gabungan aktiviti pengajaran dan pembelajaran merupakan satu mekanisme terhadap gaya pembelajaran pelajar. Oleh sebab itu, persekitaran pembelajaran seharusnya disesuaikan dengan kepentingan dan pengurusan pelajar terhadap pelaksanaan pembelajaran mereka. Maka gabungan inovasi pendekatan dan persekitaran masyarakat sewajarnya dirancang dan disesuaikan secara berkolaboratif (Saliba et. al., 2013).

Oleh yang demikian, suasana paksaan masyarakat dalam pendekatan pembelajaran atas talian dapat diharmonikan. Manakala kesediaan pelajar untuk terlibat secara aktif dalam proses pembelajaran menimbulkan impak yang positif dan penting dalam menyuburkan pengetahuan akademiknya (Gerstein, 2014; Chen & Jones, 2007).

4.0   Keberkesanan Penggunaan Aplikasi Web Dalam Pengajaran dan Pembelajaran

Pandangan Ahmed et. al., (2016) mengenai perubahan yang pantas dalam aplikasi teknologi mengakibatkan peningkatan penggunaannya dalam kalangan generasi baru terutamanya di institusi pendidikan tinggi. Hal ini secara tidak langsung telah mewujudkan motivasi diri dan pembelajaran kendiri pelajar. Sesuai dengan penjelasan Echeng & Usoro (2016) bahawa kemudahan aplikasi teknologi terutama aplikasi web telah memperlihatkan perhubungan yang berkesan antara kegunaannya dengan peningkatan motivasi. Di samping mengembangkan elemen bersosial dalam kalangan pelajar dan warga pendidik. Di sini dapat dinyatakan bahawa kepantasan perubahan terhadap kemudahan aplikasi web mempunyai pengaruh yang positif dalam memotivasikan dan menggalakkan pembelajaran kendiri pelajar. Seterusnya menggalakkan interaksi sosial secara maya. Keadaan persekitaran ini telah mengubah identiti sosial dan gaya pembelajaran mereka (Schuck, 2010).

Selain itu, menurut Saaverda & Opfer (2012) dan Csikszentmihalyi (2008) interaksi maya secara teks telah melahirkan generasi yang berkeyakinan dalam kehidupannya dan bermotivasi secara intrinsik dalam menguasai pengalaman baru. Selari dengan hala tuju pembelajaran abad ke-21 yang menekankan pembangunan pengetahuan dan kemahiran pelajar. Keberkesanan implementasi penggunaan aplikasi web ini selari dengan pendekatan teori pemerolehan (*Investment Theory*). Menurut Sternberg (2006) terdapat beberapa sumber yang berbeza dalam teori pemerolehan tetapi penting dalam merangsang kesungguhan dan kreativiti pelajar. Di antaranya sumber pemerolehan yang dinyatakan adalah motivasi, kebolehan intelektual dan persekitaran pelajar dalam mencapai hala tuju pembelajaran abad ke-21. Maka kemahiran interaksi sosial dan berkomunikasi secara maya melalui aplikasi web berjaya meningkatkan penguasaan penyelesaian masalah dalam kalangan pelajar (Whiteside, 2015; Wagner, 2008).

Sesungguhnya kemampuan aplikasi web telah melangkaui pendekatan pengajaran dan pembelajaran di dalam kelas. Menurut Chiua et. al., (2010) bahawa kemudahan teknologi aplikasi web berjaya membina kefahaman pembelajaran antara dua kumpulan dalam membuat penyelesaian masalah dan penghasilan produk. Keadaan ini bukan sahaja dapat menjayakan pendekatan konstuktivisme tetapi mengembangkan proses pembelajaran secara aktif dan bersosial para pelajar disebabkan elemen fleksibiliti dalam aplikasi tersebut (González-Gómez et. al., 2016). Kesannya para pelajar berjaya mengembangkan kemahiran berfikir di peringkat aras tinggi sesuai dalam konteks ekonomi global pada masa kini.

Situasi peringkat permulaan penggunaan teknologi aplikasi web dalam pembelajaran atas talian berasaskan penggunaan aplikasi web 1.0. Pendekatan pengajaran yang digunakan dalam aplikasi web ini hanya berbentuk interaksi sehala iaitu sumber kandungan disampaikan kepada pengguna tanpa interaktif dan bersifat statik. Hal ini telah menghasilkan suasana pembelajaran yang terkawal dan terhad terhadap penerimaan pengetahuan oleh pelajar (Ivanova & Ivanova, 2009). Memandangkan keperluan pendidikan abad ke-21 seiring dengan perubahan kemudahan teknologi aplikasi telah menaiktaraf aplikasi web 1.0 kepada aplikasi web 2.0 yang bersifat terbuka dan berinteraktif serta signifikan dengan pengajaran dan pembelajaran atas talian (Ahmed et. al., 2016).

5.0   Penggunaan Aplikasi Web 2.0 Dalam Pengajaran dan Pembelajaran

Keperluan pembelajaran atas talian menggunakan aplikasi web pada situasi sekarang akan mengubah gaya pembelajaran pelajar ke arah berinteraksi dan berkolaboratif.

> "*Learning together creates a 'shared mind' that combines different perspectives and alternative ways to solve problems.*"
>
> (Sharples, et., al., 2012)

Masyarakat dunia telah dapat menggunakan aplikasi web bermula tahun 1989 yang dicipta oleh Tim Benrers-Lee dan berkembang pesat sehingga dikenali sebagai web 1.0 dan web 2.0 (Prabhu, 2016). Seterusnya, perubahan aplikasi web 1.0 kepada web 2.0 merupakan proses yang penting dalam menyalurkan maklumat seperti dipaparkan dalam jadual 1 di bawah ini.

Jadual 1: Perbandingan antara aplikasi Web 1.0 dan Web 2.0

Elemen	Web 1.0	Web 2.0
Komunikasi	Siaran	Interaktif
Maklumat	Statik	Dinamik
Fokus	Organisasi	Komuniti
Kandungan	Pemilikan	Perkongsian
Interaksi	Web fokus	Aplikasi web
Pencarian	Direktori	Kata kunci
Teknologi	HTML/FTP	Flash/Java/XML

Merujuk jadual yang dipaparkan, didapati aplikasi web 1.0 merupakan sebuah retorik kepada penggunaan *World Wide Web* (WWW) yang berbentuk statik dan tidak berinteraktif. Web 1.0 ini lebih berfokuskan kepada penghantaran emel dan membuat maklum balas. Tetapi selepas tahun 2003 telah berlaku evolusi dengan kemunculan web 2.0 yang berbentuk aplikasi dua hala yang lebih mesra pengguna untuk berkomunikasi dalam komuniti masyarakat dengan mudah dalam pencarian melalui penetapan kata kunci (Ahmed, et. al., 2016; Prabhu, 2016; Schuck, et. al., 2010).

Penguasaan pembelajaran individu dalam era globalisasi disebabkan dorongan perkongsian bersama setiap perubahan tingkah laku individu melalui impak teknologi baru yang dinamik dan berasaskan multimedia kontemporari mempelbagaikan gaya masyarakat untuk berkomunikasi (Mazilu, 2011). Maka keperluan penggunaan aplikasi web 2.0 dalam pengajaran dan pembelajaran berkemampuan mengolah kandungan pembelajaran atas talian dan merupakan sebuah aplikasi yang berkolaboratif serta fleksibel kegunaannya. Sesungguhnya penggunaan aplikasi web 2.0 telah membawa kebaikan kepada individu dalam menguasai pengetahuan secara

kolaboratif dalam pembelajarannya. Sepertimana yang dinyatakan Gordon (2014), penguasaan pengetahuan secara kolaboratif membolehkan pembelajaran sepanjang hayat terbentuk melalui keperluan dan kehendak individu sendiri dalam meneroka pengalaman pembelajarannya berasaskan teknologi. Oleh itu, Ivanova & Ivanova (2009) mengklasifikasikan aplikasi web 2.0 merupakan suatu penciptaan pengetahuan yang berpandukan ketekalan data maklumat dan pengetahuan yang diperoleh melalui rangkaian komunikasi yang berkesan serta bersifat keterbukaan. Di samping penggunaannya berkonsepkan sosialisasi dalam berkomunikasi dan berkolaboratif yang mudah dalam mengembangkan pengetahuan individu (Ahmed et. al., 2016).

Selanjutnya, aplikasi web 2.0 juga mempunyai pengaruh positif terhadap pengembangan pengetahuan sedia ada individu. Sebagaimana dijelaskan oleh Okello-Obura & Ssekitto (2015) bahawa aplikasi web 2.0 merupakan pendorong utama dalam mengubah paradigma pembelajaran individu. Penggunaannya telah merangsang pendekatan pengajaran yang inovatif dari aspek amalan dan kandungan maklumat serta berjaya mewujudkan beberapa elemen utama seperti komunikasi, kolaboratif dan kreativiti.

Kekuatan aplikasi ini bermatlamatkan suasana pembelajaran yang unik dan berkemahiran serta melahirkan individu yang kreatif. Hal ini dapat dikembangkan melalui situasi pembelajaran yang realistik dengan rangsangan interaksi sosial yang harmoni sebagai penggalak kepada proses pengajaran dan pembelajaran yang dominan dalam pendidikan atas talian. Sesuai dengan saranan Chawinga (2017) dan Beetham & Sharpe (2013) menjelaskan bahawa penggunaan media sosial dalam pendidikan melalui penggunaan aplikasi web 2.0 telah memudahkan pelaksanaan aktiviti pengajaran dan pembelajaran individu.

Seterusnya, penggunaan aplikasi web 2.0 dalam aktiviti pengajaran dan pembelajaran (Echeng & Usoro, 2016) telah membuka peluang yang pelbagai kepada pelajar melalui capaian yang mudah dan memenuhi keperluan mereka. Situasi ini sebahagian daripada pembelajaran secara aktif dalam mengembangkan idea dan pengetahuan pelajar. Tambahan lagi, (Chawinga, 2017) aplikasi web 2.0 telah menggalakkan para pelajar berbincang dan berkongsi kandungan kursus secara atas talian. Ini merupakan pendekatan berpusatkan pelajar yang signifikan terhadap penglibatan para pelajar dan warga pendidik sebagai satu pencapaian yang sempurna (Montrieux et. al., 2015; Grants & Mims, 2009). Sebagaimana rajah 1 yang dipaparkan di bawah ini mengenai elemen utama aplikasi web 2.0 yang dicadangkan oleh Montrieux et. al., (2015).

Rajah 1: Elemen utama aplikasi web 2.0 dalam pengajaran dan pembelajaran

Kesempurnaan aktiviti pengajaran dan pembelajaran ini berjaya dilaksanakan atas faktor pendekatan yang fleksibel dan digemari oleh generasi baru seperti rajah di atas. Penggunaan aplikasi web 2.0 telah diperakui oleh mereka disebabkan perubahan permintaan gaya pembelajaran dan interaksi sosial individu berpadanan dengan keperluan masa kini (Schuck et. al., 2010).

Manakala pandangan O'Brien et. al., (2011), keberkesanan penggunaan aplikasi web 2.0 ini bergantung kepada sifat keterbukaan warga pendidik dalam mengubah pendekatan pengajaran tradisional yang diguna pakai selama ini. Memandangkan situasi sekarang kebanyakan kandungan kursus lebih bersifat fleksibel dalam membentuk persekitaran pembelajaran mengikut keperluan individu. Pemilihan aplikasi web 2.0 yang digunakan kebanyakannya bersesuaian dengan kemahiran penggunaan dalam kalangan pelajar yang memudahkan mereka untuk mengakses sumber kandungan dan mewujudkan komuniti sosial dalam aktiviti pembelajarannya (Okello-Obura & Ssekitto, 2015; O'Brien et. al., 2011). Dikukuhkan lagi dengan pendapat Soomo & Jafri (2015) yang menekankan keberkesanan perkakasan aplikasi web 2.0 dapat meningkatkan kompetensi dan kemampuan penggunaannya dalam kalangan pelajar di institusi pendidikan tinggi. Oleh itu, terdapat cadangan supaya perkaksan-perkaksan dalam aplikasi web 2.0 dapat ditelitikan dengan lebih mendalam lagi. Ini bertujuan untuk mengetahui sebenar pelaksanaan perkakasan-perkakasan aplikasi web 2.0 dapat membantu proses pengajaran dan pembelajaran dalam sistem pendidikan. Di mana perkakasan ini akan mewujudkan kesebatian perubahan pendekatan pengajaran dan pembelajaran tradisional dengan kemudahan teknologi dan bukannya pengasingan (Soomo & Jafri, 2015; Daher & Lazarevic, 2014).

Sesungguhnya penggunaan aplikasi web 2.0 merupakan gambaran keyakinan dan kepercayaan terhadap kompetensi teknologi dan pedagogi yang ketara. Di mana pengintegrasian aplikasi web 2.0 memberikan impak yang sangat sesuai dalam meningkatkan motivasi, gaya, kualiti pengajaran dan pembelajaran serta mengatasi masalah kekangan masa di dalam kelas (Nur Syazwani et. al., 2016; Asing-Cashman et. al., 2014; Johan, 2013). Anjakan baru ini dalam pendekatan pedagogi sewajarnya merupakan satu cabaran yang mempengaruhi persekitaran kehidupan pada hari ini yang mencetuskan sebuah revolusi dalam sistem pendidikan (Newland, & Byles, 2014; Johan, 2013). Disebabkan matlamat kejayaan sistem pendidikan dapat disandarkan kepada kemajuan kemudahan aplikasi teknologi di samping keberkesanannya memerlukan jalinan pedagogi yang sejati. Oleh itu, gabungan komponen pembelajaran yang mantap apabila wujud kesatuan antara pembelajaran atas talian menggunakan kemudahan aplikasi web dengan kaedah interaksi bersemuka – pendekatan pembelajaran teradun menjadi pemangkin utama dalam penguasaan pembelajaran para pelajar (Garrison & Vaughan, 2008).

Walau bagaimanapun pembelajaran menggunakan aplikasi web 2.0 juga mengalami kekurangan dan kelemahannya tersendiri. Sebagaimana dijelaskan oleh Ahmed et. al., (2016) disebabkan kemudahan teknologi komputer yang ketinggalan zaman dan kurang berpengetahuan menggunakan aplikasi web 2.0 dalam pengajaran dan pembelajaran telah menimbulkan kepincangan dalam strategi pelaksanaannya. Seharusnya aplikasi web 2.0 mempunyai perhubungan yang erat dengan pendekatan pengajaran dan pembelajaran yang sangat berguna dalam peningkatan penguasaan pengetahuan pelajar (Echeng & Usoro, 2016). Dalam menghadapi cabaran sistem pendidikan terkini, Tseng & Walsh (2016) dan Onguko (2013)

mencadangkan pendekatan pedagogi berasaskan pembelajaran teradun (*Blended Learning*) diintegrasikan kemudahan aplikasi web 2.0 sebagai penyumbang kepada motivasi pembelajaran individu.

5.1   Keperluan Pendekatan Pembelajaran Teradun Dalam Pengajaran dan Pembelajaran

Kementerian Pendidikan Malaysia (2012) menjelaskan tinjauan UNESCO menyatakan bahawa Malaysia adalah antara negara pertama di dunia yang merintis pelan strategik kemudahan teknologi dalam sistem pendidikan. Hala tuju strategik ini untuk membangunkan kemahiran pelajar menguasai aplikasi teknologi yang mampu meningkatkan kemahiran berfikir aras tinggi. Oleh itu, pendekatan pembelajaran teradun merupakan transformasi pendidikan yang dapat mengubah persekitaran pengajaran dan pembelajaran secara kukuh di dalam dan di luar kelas. Menurut Marsh (2012), pendekatan pembelajaran teradun merupakan satu kombinasi pelbagai kaedah pengajaran, persekitaran dan gaya pembelajaran. Secara jelasnya, pendekatan ini memberi pelbagai pembelajaran dan perkakasan teknologi dalam mencapai persekitaran pembelajaran secara optimum. Selaras dengan cadangan Vaughan (2010) bahawa terdapat tiga elemen utama yang wajar dititikberatkan iaitu kesediaan sosial, kognitif dan pengajaran dalam meningkatkan penguasaan pembelajaran pelajar bersandarkan pendekatan pembelajaran teradun.

Dari prespektif institusi pendidikan awam Malaysia mengkategorikan pendekatan pembelajaran teradun merupakan penyampaian kandungan dan aktiviti kursus yang dilaksanakan secara atas talian dalam menyokong atau menggantikan pembelajaran secara bersemuka. Seterusnya, pendekatan ini merupakan sebuah amalan pengajaran bersemuka secara tradisional yang digabungkan dengan pembelajaran atas talian supaya dapat memberikan peluang kepada pelajar menentukan pembelajarannya sendiri (Universiti Kebangsaan Malaysia, 2016; Universiti Malaysia Sabah, 2014). Manakala menurut Lou et. al., (2012) dan Muhamad Azhar, et. al., (2014), pendekatan pembelajaran teradun merupakan hasil gabungan pembelajaran atas talian dan interaksi bersemuka berpotensi mengurangkan kekangan ruang dan masa. Selain itu, pembelajaran secara kolaboratif dan bersemuka ini juga sangat berkesan dalam persekitaran pembelajaran pelajar untuk menampung kelemahan yang ada dalam pendekatan konvensional. Sejajar dengan pandangan Smith et. al., (2014), mengharapkan warga pendidik dapat melaksanakan pelbagai variasi pendekatan atau kaedah pengajaran mereka dalam membantu mengelakkan para pelajar daripada mengalami kebosanan ketika proses pengajaran dan pembelajaran berlangsung selain dapat memperkembangkan potensi penguasaan pengetahuan dan kemahiran mereka.

Pelaksanaan pendekatan pembelajaran teradun sesuai diaplikasikan pada ketika ini (Onguko, 2013; Dias & Diniz, 2012) memandangkan pendekatan ini dianggap mampan dan lebih fleksibel dalam menghadapi sistem pendidikan yang semakin mencabar. Selain itu, penyediaan dan pelaksanaannya dapat membangunkan dan mengembangkan sebuah komuniti pendidikan yang saling melengkapi dan mengatasi kelemahan yang dihadapi dalam pengajaran dan pembelajaran. Kesesuaian pendekatan pembelajaran teradun semakin menyakinkan apabila pendekatan pembelajaran ini dapat diaplikasikan mengikut tahap dan kriteria serta hasil pembelajaran yang berfokuskan kepada pelajar (Saliba et. al., 2013; Partridge et. al., 2011). Kesempurnaan ini dikukuhkan lagi dengan penggunaan dan integrasi kemudahan teknologi yang

bersifat inovatif membawa para pelajar ke arah pembelajaran mereka yang berbentuk kendiri, kolaboratif dan interaktif (Dias & Diniz, 2012).

Kesempurnaan pendekatan pembelajaran teradun lebih mendatangkan impak berbanding dengan pendekatan yang bersifat konvensional. Sebagaimana dijelaskan oleh Tseng & Walsh (2016) dan Chen & Jones (2007) mendapati pembelajaran teradun dapat meningkatkan nilai tambah dalam memperoleh pengetahuan terhadap sesuatu konsep melalui kemudahan aplikasi teknologi membantu mendapatkan sumber bahan terhadap peningkatan pemahaman konsep yang dipelajarinya. Ini ditambah lagi dengan gabungan aplikasi web 2.0 dalam aktiviti pembelajaran dapat mewujudkan penguasaan kemahiran eksperimentasi, kolaboratif dan penulisan (Saliba et. al., 2013). Kenyataan ini disokong oleh Sayed (2013) bahawa pemahaman konsep dalam kalangan pelajar boleh dilakukan melalui kepelbagaian sumber seperti penggunaan kemudahan aplikasi teknologi dapat mengatasi kesukaran kaedah pengajaran yang dilakukan oleh warga pendidik dan penggunaan buku teks. Disepadukan lagi dengan keyakinan kriteria pelajar yang signifikan terhadap interaksi bersemuka dengan kemudahan teknologi telah menggalakkan pembelajaran mereka (Montrieux et. al., 2015).

Kepesatan teknologi global menyuntik perubahan terhadap keperluan pelaksanaan sistem pendidikan sekarang terutamanya keberkesanan jalinan pendekatan pedagogi dengan kemudahan aplikasi teknologi sebagai penyokong atau pengganti proses pengajaran dan pembelajaran di dalam kelas. Keperluan pendekatan ini (Burns, 2011) dibuktikan melalui tahap keyakinan tinggi warga pendidik menggunakan kemudahan aplikasi teknologi yang mampu membina penguasaan kemahiran pelajar. Walaupun pendekatan pembelajaran teradun telah dilaksanakan sekian lama tetapi pendekatannya sangat berkesan terhadap kaedah pengajaran disebabkan kemudahan aplikasi teknologi yang dibekalkan pada ketika ini (Hofmann, 2014). Oleh yang demikian, pendekatan ini telah meningkatkan penyertaan pelajar di institusi pendidikan tinggi apabila kursus-kursus yang sukar diaplikasikan dan digalakkan menggunakan pembelajaran teradun dengan sokongan aplikasi teknologi (Owston, et. al., 2013).

Walaupun pendekatan pembelajaran teradun semakin digemari di peringkat institusi pendidikan tinggi. Penumpuan kepada reka bentuk kurikulum perlu diberikan perhatian. Kenyataan yang dinyatakan ini hanya dipaparkan dalam bukti empirikal dalam menjelaskan isu-isu yang diperoleh melalui penyelidikan. Namun pendekatan ini merupakan amalan peralihan yang sedang berlaku di institusi pendidikan tinggi dan bukannya penambahan sesuatu medium kepada pendekatan yang dominan (Dinning et. al. 2016; Yuen et. al., 2011). Disebabkan pembelajaran teradun menampakkan kecekapannya di institusi pendidikan tinggi terutamanya dari segi penggunaan ruang dan masa. Maka peluang ini terbuka kepada institusi pendidikan tinggi untuk memperbaiki dan meningkatkan kecekapan pedagogi terhadap kursus-kursus yang ditawarkan berasaskan faktor kemudahan aplikasi teknologi yang disediakan (Hofmann, 2014; Partridge et. al., 2011). Sesungguhnya kekuatan sesuatu kursus yang ditawarkan bersandarkan kepada reka bentuk kurikulum yang dibangunkan dengan sokongan padu kaedah pedagogi dan teknologi yang mantap.

Secara keseluruhannya, keberkesanan penggunaan pendekatan pembelajaran teradun dipengaruhi oleh kemudahan aplikasi teknologi yang telah disediakan. Selain dari kaedah pengajaran bersemuka yang menentukan penguasaan pengetahuan dan kemahiran pelajar

(Qwston et. al., 2013). Kesediaan pendekatan ini mengintegrasikan kaedah pengajaran bersemuka dengan pembelajaran atas talian dapat memperkayakan kaedah pedagogi terhadap kursus yang ditawarkan. Seterusnya peningkatan penglibatan pelajar mampu memberikan faedah yang terbaik kepada mereka (Dinning et. al., 2016; Owston et. al., 2013; Partridge et. al., 2011). Antara model pendekatan pembelajaran teradun yang paling popular diaplikasikan oleh warga pendidik adalah model "*Flipped Classroom*". Model ini merupakan metodologi pengajaran yang berkesan penyampaiannya terus kepada individu dan bukannya satu arahan yang disebarkan dalam bentuk kumpulan di dalam kelas (Bergmann & Sams, 2012).

6.0   Pelaksanaan Model "*Flipped Classroom*" Dalam Pengajaran dan Pembelajaran

Bath & Bourke (2010) menjelaskan pembelajaran teradun merupakan penyatuan pelbagai aktiviti bersemuka yang berbentuk konvensional dengan kemudahan berinteraksi secara atas talian. Oleh itu, '*Griffith's Blended Learning Strategy*' telah mengenal pasti tiga mod dalam melaksanakan aktiviti dalam pembelajaran teradun. Mod tersebut dipaparkan dalam jadual 2 di bawah ini.

Jadual 2: Tiga mod dalam pembelajaran teradun

MOD 1	Aplikasi teknologi dalam pengurusan dan sumber bahan untuk membantu pelajar
MOD 2	Aplikasi teknologi mempelbagaikan kualiti pembelajaran pelajar secara interaktif di luar kelas dan bersemuka di dalam kelas
MOD 3	Aplikasi teknologi berasaskan pembelajaran kendiri pelajar untuk berinteraktif dan berkolaboratif sepenuhnya di atas talian

Maka *Griffith Institute for Higher Education* telah mengaplikasikan mod kedua di dalam kursus-kursus yang ditawarkan di institusi tersebut. Maka model "*Flipped Classroom*" tersenarai dalam mod kedua pendekatan pembelajaran teradun yang telah dinyatakan ini. Kenyataan ini disandarkan kepada pendapat Kurt (2017) bahawa model "*Flipped Classroom*" merupakan satu kaedah dalam pembelajaran teradun yang menggunakan pendekatan pengajaran berasaskan pembelajaran atas talian dan interaksi bersemuka sebagai satu kekuatan dalam pembelajaran pelajar. Penjelasan ini telah dijelaskan oleh Arfstorm et. al., (2013) yang menyatakan model "*Flipped Classroom*" merupakan sebuah perubahan aktiviti pembelajaran secara individu dengan berbantukan aplikasi teknologi.

Manakala Yanjie Song (2017) menekankan definisi model "*Flipped Classroom*" secara tradisional merupakan sebuah reka bentuk pengajaran secara olahan songsang atau terbalik oleh warga pendidik dalam berinteraksi dan penglibatan pelajar dalam pembelajaran secara aktif di dalam dan di luar kelas. Dengan berbantukan penggunaan aplikasi teknologi dalam aktiviti pembelajaran untuk membangunkan pengetahuan dan kemahiran pelajar. Seterusnya, Zhu Tiejun (2017) pula mengklasifikasikan model "*Flipped Classroom*" sebagai sebuah reka bentuk pembelajaran teradun yang menggunakan kemudahan aplikasi teknologi melalui sumber bahan

di luar persekitaran kelas untuk digunakan dalam aktiviti pembelajaran sebagai rangsangan para pelajar memahami dan membangunkan konsep terhadap sumber bahan yang diperoleh.

Oleh yang demikian, *Flipped Learning Network* (Arfstorm et. al., 2013) telah mengenal pasti empat tonggak utama pembelajaran terbalik (*Flipped Learning*) model "*Flipped Classroom*" yang terdapat dalam pendekatan pembelajaran teradun seperti dalam rajah 2.

Rajah 2: Empat tonggak utama model "*Flipped Classroom*"

Empat tonggak F-L-I-P yang dibangunkan membawa maksud;

a. Persekitaran yang fleksibel (*Flexible Enviroment*) telah memberi ruang kepada warga pendidik dan pelajar mengikuti aktiviti pembelajaran dalam pelbagai mod mengikut situasi yang sesuai.

b. Budaya pembelajaran (*Learning Culture*) perubahan pembelajaran yang berpusatkan pelajar di dalam dan luar kelas dengan bertujuan memperkembangkan gaya pembelajaran mereka.

c. Sumber kandungan bersahaja (*Intentional Content*) merupakan penetapan sumber kandungan oleh warga pendidik yang dapat meningkatkan pemahaman konsep dan kemahiran pelajar secara individu dan kumpulan.

d. Warga pendidik yang profesional (*Professional Educators*) memerlukan kemahiran yang tinggi dalam menyediakan ruang pembelajaran atas talian secara individu dan memanfaatkan interaksi bersemuka antara warga pendidik dan pelajar.

Maka empat tonggak utama model "*Flipped Classroom*" menepati pandangan Sams & Aglio (2017) bahawa memterbalikkan pembelajaran (*Flipped Learning*) akan mengubah gaya pembelajaran pelajar yang sempurna dalam pelbagai situasi. Seterusnya meningkatkan kaedah pengajaran dan penilaian warga pendidik terhadap pencapaian pelajar.

Ini sesuai dengan pandangan Schwartz & Fischer (2006) yang melihat kejayaan sistem pendidikan sekarang memerlukan pendekatan pedagogi yang kukuh dalam mengembangkan penguasaan pengetahuan dan kemahiran pelajar melalui aktiviti penyelesaian masalah dan gaya pembelajaran secara aktif. Secara tidak langsung akan mewujudkan pembelajaran pelajar yang pelbagai (Antonova et. al., 2017) melalui implikasi penguasaan ilmu secara integrasi di dalam dan di luar kelas. Pengintegrasian antara sumber kandungan dengan aplikasi teknologi secara

atas talian telah merangsangkan pembelajaran pelajar dalam mengatasi kesukaran konsep yang dipelajarinya (Özyurt & Özyurt, 2017). Maka kemudahan perkakasan aplikasi teknologi sangat diperlukan dalam pengurusan teknikal dalam model "*Flipped Classroom*" supaya dapat memastikan kesempurnaan pelaksanaan kaedah ini (Yıldırım, 2017).

7.0   Keberkesanan Pelaksanaan Model "*Flipped Classroom*" Dalam Proses Pengajaran dan Pembelajaran

Dalam mengetahui keberkesanan pelaksanaan model "*Flipped Classroom*" kaedah penyelidikan kualitatif berasaskan meta-analisis dalam mengenal pasti tema, fokus utama dan dapatan telah digunakan. Berdasarkan penggunaan penyelidikan meta-analisis ini bertujuan untuk meneliti kajian literatur dalam memperoleh statistik ringkas sebagai integrasi penemuan tema, fokus utama dan dapatan terhadap ketelitian penggunaan metodologi penyelidikan yang akan dilaksanakan (DeCoster, 2004). Pendekatan ini telah dirujuk kepada analisis tajuk dan penulisan abstrak sebanyak 19 artikel yang melibatkan keberkesanan pelaksanaan model "*Flipped Classroom*" yang diterbitkan dalam jurnal *EBSCOhost: Education Source* terbitan tahun 2017 melalui database *Digital Library Open Universiti Malaysia* (OUM). Daripada jumlah tersebut hanya 14 artikel yang menunjukkan penjelasan tema, fokus utama dan dapatan yang sesuai dengan keberkesanan pelaksanaan model "*Flipped Classroom*". Seterusnya, kekuatan penggunaan meta-analisis berdasarkan penerbitan artikel yang dirujuk melalui penulisan abstrak yang ringkas dan padat dapat membantu untuk mengenal pasti perkembangan terkini keberkesanan pelaksanaan model "*Flipped Classroom*" supaya perbincangan yang teliti dapat dihuraikan dengan lengkap dan sempurna (Mertz et al., 2016, Nurul Nadwa & Noor Dayana, 2016). Sebanyak lapan ringkasan meta-analisis dipaparkan untuk menjelaskan keberkesanan pelaksanaan model "*Flipped Classroom*" seperti di dalam jadual 3 di bawah ini.

Jadual 3: Meta-Analisis keberkesanan pelaksanaan model "*Flipped Classroom*" terbitan 2017

Penulis/Tahun	Tema	Isu	Dapatan/Cadangan
Smallhorn (2017)	Sumber bahan atas talian	Membincangkan dan menyelesaikan masalah terhadap topik dengan lebih teliti.	Peningkatan dalam pengalaman pembelajaran pelajar.
Özyurt & Özyurt (2017)	Aktiviti dan proses pengajaran	Pelaksanaan dalam pelbagai kursus secara integrasi.	Pelajar berdikari dan bertanggungjawab terhadap pembelajarannya.
Paterson (2017)	Persekitaran pembelajaran pelajar	Kesediaan pembelajaran ke arah abad ke-21.	Pembelajaran yang menarik dan meningkatkan pencapaian.
Zhu Tiejun (2017)	Pengajaran dan pembelajaran berinteraktif	Autonomi dan keupayaan meneroka pembelajaran dan pengetahuan.	Penggunaan teknologi berjaya merangsang aktiviti pembelajaran.
Lo & Hew (2017)	Cabaran melaksanakan model "*Flipped Classroom*"	Mengkategorikan pelaksanaan dalam dalangan pelajar, pengurusan dan pentadbiran.	Dapat mewujudkan keseimbangan yang positif terhadap pencapaian pelajar.

Çakıroğlu & Öztürk (2017)	Pembelajaran berasaskan masalah	Melaksanakan aktiviti menggunakan aplikasi secara kolaboratif	Peningkatan kemahiran penyelesaian masalah.
Kostaris et. al., (2017)	Meningkatkan pendekatan pengajaran	Penguasaan kompetensi digital berdasarkan kurikulum.	Meningkatkan pengalaman, motivasi dan kesediaan pelajar.
Kurt (2017)	Strategi pengajaran baru	Meningkatkan kualiti dan kecekapan proses pengajaran dan pembelajaran.	Berjaya memanfaatkan aktiviti yang dijalankan secara atas talian.

Melalui meta-analisis yang telah dilakukan, mendapati tema keberkesanan pelaksanaan model "*Flipped Classroom*" lebih memfokuskan kepada pendekatan pengajaran dan pembelajaran, persekitaran pembelajaran pelajar dan sumber bahan secara atas talian. Penetapan ini menurut Antonova et. al., (2017) memperlihatkan secara jelas perubahan pendekatan pengajaran dan pembelajaran yang bersifat konvensional ke arah pendidikan moden yang sistematik. Tema-tema yang dianalisiskan ini telah menunjukkan dapatan yang positif terhadap gaya pembelajaran dan pencapaian pelajar. Selain itu, fokus utama lebih menumpukan pelaksanaan pengajaran dan pembelajaran yang bermatlamatkan kepada penguasaan pengetahuan dan kemahiran pelajar dalam meningkatkan kesediaan dan pengalaman pelajar terutamanya nilai kendiri mereka (Kurt, 2017; Kostaris et. al., 2017; Çakıroğlu & Öztürk, 2017).

Sesungguhnya model "*Flipped Classroom*" merupakan pendekatan pembelajaran teradun yang berpotensi dan bersesuaian dengan matlamat pembelajaran abad ke-21. Di mana Paterson (2017) menekankan keperluan persekitaran pembelajaran pelajar wajar diberikan perhatian dalam memotivasikan dan menggalakkan pencapaian mereka dalam persaingan global. Selain itu, Zhu Tiejun (2017) menjelaskan perubahan pendekatan pembelajaran konvensional ke arah pembelajaran berinteraktif mengembangkan minda dan kuasa autonomi pelajar dalam melaksanakan aktiviti penerokaan ke arah inovatif dalam pembelajaran mereka. Secara tidak langsung model ini memberi ruang dan masa untuk pelajar melaksanakan aktiviti pembelajaran berasaskan aplikasi teknologi. Seterusnya peranan warga pendidik telah menggalakkan pembelajaran pelajar dalam pelbagai situasi (Sams & Aglio, 2017).

8.0   Kesimpulan

Penguasaan kompetensi dan kemahiran individu amat diperlukan dalam pasaran kerjaya global generasi baru. Penguasaan ini telah disebatikan dalam hala tuju pembelajaran abad ke-21 yang menjadi perhatian masyarakat dunia. Saaverda & Opfer (2012) telah menegaskan kejayaan seseorang individu yang menguasai kemahiran abad ke-21 akan memberikan peluang kerjaya yang luas pada ketika ini. Seterusnya, penguasaan kemahiran ini disandarkan dengan kemudahan aplikasi teknologi yang serba lengkap. Oleh itu, keperluan penyelidikan terhadap penggunaan teknologi harus ditekankan. Walau bagaimanapun seperti yang telah dibincangkan, aplikasi teknologi semata-mata dilihat mempunyai kekangan. Seperti yang dinyatakan oleh Paterson (2017) dan Whiteside (2015) bahawa penetapan pendekatan pengajaran dan kecelaruan penggunaan istilah dalam aplikasi teknologi telah menyebabkan pembelajaran atas talian kurang berkesan. Ramai tokoh penyelidikan mencadangkan agar pembelajaran menggunakan teknologi haruslah dilaksanakan juga dengan pembelajaran bersemuka agar proses pengajaran dan

pembelajaran dapat disebatikan sebagai satu kombinasi elemen terhadap kesediaan sosial, kognitif dan pengajaran yang meningkatkan pembelajaran pelajar (Marsh, 2012; Vaughan, 2010).

Justeru, pelaksanaan model "*Flipped Classroom*" yang merupakan salah satu model dalam strategi pembelajaran teradun yang sangat digalakkan. Ini kerana melalui model ini yang menggunakan kaedah empat tonggak utama "*Flipped Learning*" dalam melaksanakan aktiviti pembelajaran dalam pelbagai mod menggunakan aplikasi web 2.0 juga dapat ditekankan (Afstorm, et. al., 2013). Selaras dengan cadangan Saliba et. al., (2013) dan Marsh (2012) yang menekankan kepentingan gabungan model "*Flipped Classroom*" dengan aplikasi web 2.0 melahirkan generasi baru yang berkompetensi dan berkemahiran dalam menguasai pembelajaran secara kendiri dan berkolaboratif terhadap persaingan global. Kurt (2017) pula menyarankan kesepaduan pendekatan pembelajaran teradun – model "*Flipped Classroom*" dengan aplikasi web 2.0 merupakan sebuah pendekatan yang fleksibel dan menjimatkan tetapi menghasilkan impak yang besar terhadap pembelajaran individu. Sewajarnya model "*Flipped Classroom*" merupakan sebuah pendekatan pedagogi yang disokong kukuh dengan teori pembelajaran konstruktivisme dan aplikasi web 2.0 yang menyalurkan sumber kandungan berbentuk interaktif terhadap pembelajaran pelajar yang sempurna (Kurt, 2017; Miranda et. al., 2014).

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A Meta-Analysis on Challenges in Integrating Innovation for Teacher's Development

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Abstract:

Innovation is an important shift, aspiration, desire and general request for excellence in education. Innovation offers new ways to approach some aspects of teaching and learning for teachers and the prospect of improved outcomes of learners in that specific context. However, there are many obstacles and challenges in integrating innovation in school. It is commonly known that teachers are the gatekeepers to top-down educational reform or teaching innovation. It is important to discern and understand how innovation can be generated and disseminated among teachers and how this process can be implemented. This study will provide an overview of the challenges faced by the teachers and school administrators in integrating innovation for teacher's development. Selected research papers, published from 2012 to 2017, were downloaded from SpringerLink, Science Direct, Google Scholar, Taylor & Francis Online, SAGE, JSTOR, Web of Science and Emerald. The results of this meta-analysis revealed that the teachers have the desire to innovate, use technology and improve their practices especially in learning and facilitating process related to 21st century learning. However, they're faced with insecurity brought about by the implementation of new processes, either because they have no training or the lack of knowledge and belief. Findings from this review showed that the teacher's attitude and teacher's readiness are the main challenges to initiate, develop and integrate innovation in schools. It is also beneficial to school administrators and educators to cater and understand the teachers' concern and perception, both before and during the implementation phase of an innovation.

Keywords: Innovation, Integrating innovation, Teaching and learning, Teacher development

1.0 Introduction

Innovation in education is related to new ideas, goods, methods of perceived or observed as a novelty for a person or society and the educators where they can use innovation to solve the problems encountered especially in the education field or to achieve the goals (Rusdiana, 2014).

According to Aji & Rokhman (2016), there are examples of educational innovation such as student online admission, learning innovation, curriculum innovation, integrated academic system, educator innovation and others.

Innovation leads to the school's quality in providing services to stakeholders. Improving

the quality of education is an important program both nationally, regionally, and internationally. Educational programs for all or education for all has been shifted to the quality education for all and has been spearheaded by UNESCO (United Nations Educational, Scientific, and Cultural Organization). The public demands are now not only focused on education, but more to the quality of education (Aji & Rokhman, 2016).

Schools as well as other institutions are required to be an innovative organization in the modern society. For this purpose, they must not only be a learning organization but they must also be innovative organizations. The changes that a society went through also led to the continuously change of the functions, responsibilities, and definitions of schools, from where the resources are obtained and to which output is given. The schools must change and innovate themselves to respond to society's changing structures (Emre Omur & Argon, 2016).

The organizational innovation management skills and their effort to realize the learning organization goals have determined the innovation of schools and also the sustainability of their developments and success (Kerman, Freundlich, Lee & Brenner, 2012). While schools reshaped themselves according to social changes, they also pioneer social innovation. This is a two-way interaction between education and innovation (Ozdemir, 2013). Integrating innovation in teacher's development is important and it has significant impact towards the school achievement and success. The needs for continuous professional development for teacher is essential, as well as for greater efficiency of teachers' innovative activities due to the urgency and value of the continuity of education (Tyunnikov, 2017).

According to Al Jamhour (2012), the teacher's professional growth and teacher's development has been the interest of all nations to improve the teacher's knowledge and skills. To achieve this goal, it can be done by exposing and helping the teachers to gain new capabilities, enabling them to develop themselves and also to guide and help them on how to think and benefit from their lessons with perception of their needs, and to understand their motivations toward understanding the facts and interpretation of the apparent element, and to analysis element till the desired educational goals are achieved as the basis of the educational process.

However, there are obstacles and challenges in order to integrate innovation in school especially to the teachers (De Vocht & Laherto, 2017). One must consider the importance of the teacher to achieve creativity and achieve the educational objectives process. The spirit of the educational process is represented by the teachers and the basis on which the success of education depends on how to attain its goals, and to interpret those goals into reality. The abilities and student's skills can be developed by the teachers through the organization of the educational process, direct it and employ the instructing techniques and its methods and they also must know the needs of the students and the methods of discussing and instructing them (Abu-Shreah & Zidan, 2017). The teachers and school administrators must put an effort to have the knowledge and skill towards the integration of innovation and also the educational needs for innovation for the teacher's development in accordance to the 21st century learning.

2.0　　Research Question

The objective of this study is to gain an overview of the main challenges faced by teachers and school administrators in integrating innovation for teacher's development. This study also reviewed the methodology and instrument used from the previous studies. This study is also aimed to answer the research questions stated below:

- What are the main challenges faced by teachers and school administrators to integrate innovation for teacher's development?
- What are the methodology and instrument used from the previous studies?

3.0　　Methodology

In this study, the systematic review and meta analyses were employed. Selected research papers from 2012 to 2017 were downloaded from SpringerLink, ScienceDirect, Google Scholar, Taylor & Francis Online, SAGE, JSTOR and Web of Science and Emerald. Most of these articles are basically from the social science journals, for instance the Journal of Educational Research, Journal of Teacher Education, Journal of Education and Practice and also from Journal of Educational Computing Research and Eurasian Journal of Educational Research.

Using these prominent databases, it provides good research platforms where multi-disciplinary issues can be found. In light of this, for this study, integrating innovation in schools and the challenges faced by the subjects were used as references in the database searching platform. Based on the searching result, most of the research papers in the databases showed the dimension relating to the issues of challenges in integrating innovation for the teacher's development.

During the initial stage, the search found a total of 68 papers which were related to innovation in schools. During the second stage, the number of articles found were reduced to a total of 29 which fulfilled these criteria: (1) The selected papers were limited to only those published from 2012 to 2017 in order to obtain the latest reviews regarding the integration of innovation in schools, (2) The studies were related to challenges in integrating innovation faced by teachers and school administrators for teacher's development. The studies were analyzed and summarized according to the research questions, as presented in Table 1 and Table 2.

Table 1: Analysis on the challenges faced by teachers and school administrators in integrating innovation for teacher's development

Author (s), Year	Teacher readiness	Teacher Preparedness		Lack of Knowledge			
Coenders & Terlouw (2015)	�						
King et al. (2015)		▨	▨				
Gargani & Strong (2014)			▨	▨			
Akiba & Wilkinson (2016)				▨			
Koh et al. (2017)				▨			
Griffin et al.(2017)					▨	▨	
Stephen et al. (2016)		▨					
Mohammad & Hiam (2017)				▨			
De Vocht & Laherto (2017)						▨	
Teomara et al. (2017)					▨		
Admiraal et al. (2017)					▨	▨	
Sofya et al. (2016)							▨
Khlaif (2017)						▨	
Longkai et al. (2014)							▨
Alpaslan et al. (2016)	▨						
Cviko et al. (2012)					▨		▨
Norah & Catherine (2013)	▨						
Al et al. (2015)						▨	
Testa & Tawfik (2017)	▨					▨	
Shernoff et al. (2017)	▨	▨					
	5	3	2	4	4	6	3

Table 2: Analysis on the methodologies and instruments used in previous studies

AUTHOR (s)	METHODOLOGY	INSTRUMENT
Parkinson (2016)	Qualitative	Interview
Coenders & Terlouw (2015)	Qualitative	Interview
Gargani & Strong (2014)	Qualitative	Observation
Lam & Shulha (2015)	Qualitative	Observation Document Interview
Icy *et al.* (2015)	Qualitative	Observation Interview
Aji & Rokhman (2016)	Qualitative	Interview Observation Checklist
Stephen *et al.* (2016)	Qualitative	Interview
Athanas *et al.* (2015)	Qualitative	Interview Observation
Khlaif (2017)	Qualitative	Interview
Cviko *et al.* (2012)	Qualitative	Observation Interview
Tairab *et al.* (2016)	Qualitative	Interview Document analysis
Norah & Catherine (2013)	Qualitative	Interview Document analysis Observation
Testa & Tawfik (2017)	Qualitative	Interview Observation
Shernoff *et al.* (2017)	Qualitative	Interview

AUTHOR (s)	METHODOLOGY	INSTRUMENT
Griffin *et al.* (2017)	Quantitative	Questionnaire
Mohammad & Hiam (2017)	Quantitative	Questionnaire
Emre Omur & Argon (2016)	Quantitative	Questionnaire
De Vocht & Laherto (2017)	Quantitative	Questionnaire
Young (2015)	Quantitative	Questionnaire
Teomara *et al.* (2017)	Quantitative	Questionnaire
Admiraal *et al.* (2017)	Quantitative	Questionnaire
Georgios & Athanasios (2016)	Quantitative	Questionnaire
Sofya *et al.* (2016)	Quantitative	Questionnaire
Al *et al.* (2015)	Quantitative	Questionnaire

AUTHOR (s)	METHODOLOGY	INSTRUMENT
King *et al.* (2015)	Mix Method	Interview Questionnaire
Akiba & Wilkinson (2016)	Mix method	Questionnaire Interview Policy document
Koh *et al.* (2017)	Mix method	Questionnaire Interview
Longkai *et al.* (2014)	Mix method	Questionnaire Interview Document
Alpaslan *et al.* (2016)	Mix method	Questionnaire Observation

Table 1 showed various types of challenges faced by teachers and school administrators in integrating innovation for teacher development. The result from the analysis showed that there are seven challenges to integrate innovation in school; teacher's readiness, teacher's preparedness, lack of understanding, lack of knowledge, teacher's belief, teacher's attitude and teacher's perception.

Table 2 displayed the types of methodologies and instruments used in previous studies comprising of qualitative, quantitative and mixed method.

4.0   Results & Discussion

4.1   Challenges Faced By Teachers and School Administrators In Integrating Innovation For Teacher Development

The results will be discussed based on the challenges that were mentioned most frequently from the meta-analysis. From Table 1, there were seven challenges faced by the teachers and administrators in the process of integrating innovation in schools and it was mentioned in twenty out of twenty-nine studies; teacher's attitude, teacher's readiness, lack of knowledge, teacher's belief, teacher's preparedness, teacher's perception and lack of understanding. The teacher's attitude was found to be the main challenge to integrate innovation in school (Griffin *et al*., 2017) followed by the teacher's readiness, lack of knowledge and also the teacher's belief.

The level of emotional nuisances and frustration caused by innovation will increase if negative attitudes towards innovation increases and if it is not controlled, it can even lead to burnout. Therefore, the teachers' ability will be affected by negative attitudes to adopt and operationalize innovation (De Vocht & Laherto, 2017). However, teacher attitudes towards several shifts in teaching practices is the main factor of the success. According to Al, Carole, & Michael (2017), current instructional strategies need to be changed, positive attitudes toward teaching beyond their disciplines must be developed and the teachers must also have positive attitudes toward collaboration with other colleagues.

The teacher's attitude could either be positive or negative. A study conducted by Khlaif (2017), reported that teachers have both positive and negative attitudes on the integration of tablets in their practice. For instance, it was reported that the teacher's attitudes were an important factor in adopting the use of tablets in the classroom even though the adoption of technology in classroom's instruction was mandatory. The teachers' attitudes toward technology played an important role in the actual use of technology in classroom instruction and also can be a major barrier to the integration of technology. The tools and materials provided for teaching purposes have not been used by several teachers not to the expected extend or in the intended way (Diethelm & Carl, 2014). According to Park (2014), beginning teachers are passive listeners. Thus, they need to become more active in learning and develop their expertise especially in adapting innovation in teaching.

Significantly, to integrate technology and innovation in a strategic plan in order to improve academics, community involvement, assessments, data-driven practices and educational equity, teacher readiness and capability are important (Shernoff, Sinha, Bressler, & Ginsburg, 2017; Testa & Tawfik, 2017). Technology and innovation may be integrated in the teacher's preparation and readiness as a tool supporting academic opportunity for broader segments of society in the 21st century classrooms (Blythe Liu, L. Baker, & B. Milman, 2014). For instance, considerations on how ICT-integrated learning can be designed to support such pedagogical aims is one way of implementing 21st century learning in schools. However, according to Koh, Chai, & Lim (2017), they were only using ICT predominantly for content transmission as the teachers

may not be fully ready to do so.

When the curriculum changes, teachers have to bring their knowledge and beliefs up to date. What do the teachers learned and how is it learned are the two aspects that can be distinguished. Furthermore, a teacher's knowledge and confidence must be adopted by all teacher candidates to ensure effective education (Blythe Liu *et al.*, 2014). External domain is a place where the first seeds of changes in knowledge and beliefs are planted. Certain elements should consist in the domain in order to provide sufficient new ideas, practical advice and tools to re-develop innovative student learning materials and to allow the teachers to concurrently prepare for class enactment of this matter (Coenders & Terlouw, 2015).

4.2 Methodology and Instrument Used in Previous Studies

In previous studies, there were several different researches and design of methodologies. Table 2 showed the different types of methodology employed in those studies. The methodologies comprised of qualitative, quantitative and also mixed method methodology. Qualitative methods were frequently used over quantitative and mixed method. Qualitative research is an extensive methodology that focuses on what, why, and how. This method cannot be used when involving data sets and statistical tests and the data gathered might not similar to any studies. Furthermore, collection of detailed information from a smaller group of people and allowing for an increased depth of understanding of the cases and situations, can be done by using qualitative research (Weidmann, 2018). Fourteen out of twenty-nine studies (48.3%) were found to be using qualitative approach and the instruments used consist of interview, documentation, observation and checklist. For quantitative approach, ten studies out of twenty nine studies (34.5%) employed the method. The prominent instrument used was questionnaires which were distributed among the respondents in the studies. For the mixed method approach, five studies (17.2%) used this methodology and the instruments used were questionnaire, interview and documentation.

5.0   Conclusion

From the result of the meta-analysis study, it is significant to understand the challenges and obstacles in implementing and integrating innovation in schools especially for the teacher's development. There were many challenges faced by the teachers and administrators comprising of the teacher's readiness, teacher's preparedness, lack of understanding, lack of knowledge, the teacher's belief, the teacher's attitude and the teacher's perception. Based on the discussion, teacher attitude was found to be the most significant challenges in order to integrate the innovation.

Positive teachers will have the desire to adopt innovation and technology in education whereas teachers with negative attitude will give thousands of excuses to avoid using technology and innovation in education especially in teaching and learning purposes. According to Lee, Mak, & Burns (2016), teachers need to take into consideration the students' needs, values and assumptions when undertaking innovation. In developing creativities in their classrooms, the teachers must utilize thoughtful, adaptive and innovative approaches. To provide and facilitate creative thoughts, processes and actions, the teachers must reflect on their own reflexive problem

herein solving the solutions and their practices. Individual accounts of practice have been spanned by these reflections, as well as multifarious adaptations of teaching that demonstrated multi, inter and cross-disciplinary collaborations, effects and affordances to nurture creativity (Harris & Bruin, 2017).

The school administrators or school leaders must emphasized efforts to overcome this problem as negative attitude will give negative impact on the school achievement and success. The school leaders have significant effects on the teacher's and student performance (Gordon, Oliver, & Solis, 2016). In order to attract and enhance the readiness of the teachers towards innovation and creativity in education practices, the school can form a team to plan and execute related plans. They can also collaborate with the District Education Office to get assistances and advises to tackle the problem.

6.0   Limitations and Future Studies

This study only emphasized on the concerns to the challenges and obstacles faced by the teachers and school administrators in integrating innovation for teacher development. The aim of this study is to gain an overview of the main challenges to the efforts and process of implementation and integration of innovation in school. Related study to identify the effective strategies for the innovation integration in school concerning to education innovation among teachers and how a multifarious of strategies should be carried out in the future in order to attract and convince the teachers to use innovation and technology in education practices effectively and efficiently.

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Potency of Human Trafficking In South Kalimantan
(A Qualitative Descriptive Study on Potency of Human Trafficking in South Kalimantan: Tabalong, Tanah Bumbu, Banjarbaru, and Banjarmasin)

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Abstract:

Human trafficking is a problem which keeps growing bigger. Meanwhile, the cases of the problem until recently revealed are just small parts of it. The analogy can be described like an iceberg, small at the surface, but very large indeed inside. The problem of human trafficking can be categorized as a social problem. This is because the occurrence does not stand alone, but there are factors that encourage the emergence of the problem, namely factors of poverty, employment, education, migration, family, social and cultural conditions and the lack of attention to the mass media. Based on the problem, the purpose of the research is to reveal the elements, the locations and the link between entertainment industry and potency that can encourage the emergence of human trafficking in South Kalimantan. To reveal them all, theoretical review as a tool to analyze is framework theories. Trafficking when linked to this concept is considered social deviation. The method used in this research is descriptive qualitative to enable researchers to freely detail and describe the events as well as explore the data. Thus, the potency of the emergence of human trafficking can be identified and described well. The results show that the most dominant factors driving the emergence of trafficking are economic factor and low education. In addition, potential locations of human trafficking are entertainment venues, hotels, beauty salons, localization, dimly lit stalls and Indonesian workers agencies. These locations are vulnerable areas and these sites can grow well in areas where an industry is also growing, especially coal mining industry.

Keywords: Potency, Human Trafficking

1.0   Introduction

Along with the development of the era, various issues related to humanity are more complex and diverse, from simple problems to problems that are very complicated and systematic. These issues require serious and systematic handling. Even the approach of problem solving is the approach that is considered effective. One of the issues that have recently been discussed by many parties is related to the problem of women and children trafficking. This is actually a quite basic humanity problem. The question is who should be responsible for this problem, the state or all elements of society? Preventive measures must be done immediately, given the rapid development and spread of these trafficking problems. As pointed out, there are at least 12 regions in Indonesia indicated as a trafficking center for people, especially women and children.

2.0   Literature Review

The trafficking problem from time-to-time is increasingly enlarged, but this problem is still difficult to be identified, given the victims themselves are rarely willing to reveal what is experienced. This problem as the peak of the iceberg is difficult to be identified. The factors that encourage the occurrence of the trafficking problem as mentioned by the Ministry of Women's Empowerment of the Republic of Indonesia in National Action Plan on, the Elimination of Human Trafficking are as follows:

a. Poverty. According to data from BPS (Central Statistics Agency), the existence of poor population trend continued to rise from 11.3% in 1996 to 23.4% in 1999 although it gradually decreased to 17.6% in 2002.

b. Employment. Since the economic crisis of 1998, the number of working children's participation tend to also continue to rise from 1.8 million at the end of 1999 become 2.1 million people in 2000.

c. Education. According to National socio-economic Survey (Susenas) in 2000, 34.0% of the Indonesian population at the age of 10 and upward have not/never completed elementary school, 32.4% completed elementary school and only 15% completed secondary schools. According to the report, in 2000 there are 14% of children aged 7-12 and 24% of children ages 13-15 who do not continue education to secondary schools due to inability of finance.

d. Migration. According to KOPBUMI (Consortium defenders of migrant workers Indonesia), in 2001 the placement of migrants out of the country reached at least 74,616 people who have been victims of the trafficking.

e. The condition of the family, namely low education, limited opportunities, ignorance of rights, limitations of information, poverty, and consumptive lifestyle as the weak points of family resilience.

f. Social culture. Child is a property that can be treated at will by the parents. Gender injustice or the position of women who are considered inferior still grow among Indonesian community.

g. Social culture. Child is a property that can be treated at will by the parents. Gender injustice or the position of women who are considered inferior still grow among Indonesian community.

h. The mass media still do not pay full attention to full and complete news and information without trafficking, and has not contributed optimally in its prevention and elimination efforts. In fact, mass media provide the less educational and pornographic content that encourage the strengthening of trafficking activities and other crimes.

2.1   Topic

Referring to the definition of trafficking, the results obtained in this research showed how the process, methods, and objectives of trafficking potency. The process of human trafficking in South Kalimantan with 4 regions (Tabalong, Tanah Bumbu, Banjarmasin, Banjarbaru) as the samples of this research are as follows:

   a. Recruitment
   b. Transportation
   c. Transfer
   d. Harboring

The methods of trafficking in South Kalimantan are as follows:
   a. Threat
   b. Force
   c. Deception
   d. Fraud
   e. Coercion
   f. Abuse of Power

Moreover, the objectives of human trafficking are as follows:
   a. Exploitation
   b. Forced Labor
   c. Slavery

3.0 Methods

The research method used is descriptive qualitative to describe the data and facts on human trafficking as well as to build a full involvement of the researchers. In the context of this research, it attempts to map and describe the potential emergence of human trafficking in South Kalimantan region with focus on three areas, namely District of Tanah Bumbu, Tabalong, Banjarbaru, and Banjarmasin Regency.
.
4.0 Data Analysis

Data analysis was conducted using the interactive model approach by Miles and Huberman, with three steps as follows:

   a. Data reduction is intended as a selection process, attention focusing on simplification, abstraction and transformation of data or facts in the field. The process of transformation continues until a collection of information is arranged, so that conclusions can be drawn and action can be taken.
   b. Presentation of data is done with words or sentences that describe the information and facts in the field. Besides, it also combines the information in the comprehensible integrated forms, so the researchers can see what happened and draw the implications correctly.
   c. Drawing conclusions and verification is a complete configuration activity during the assessment. Verification is a rethinking of the results of the analysis as long as the researcher performs the record by conducting the exchange of thoughts to develop an inter-subjective opportunity to test the truth and suitability.

5.0   Results

The phenomenon of trafficking in South Kalimantan has shown a fairly clear indication especially seen from six areas such as: mining industry (coal), hotels, dimly lit stalls, salon and karaoke entertainment, as well as prostitution venues. The mapping result of trafficking potency in Tabalong and Tanah Bumbu District is in coal mining area. As a large mining, Tabalong District by most people is made as one of the destination areas to find employment. Potential places to see cases of trafficking in Tabalong are salons, cafés, dimly lit stalls, and Cakung localization. The mapping result of trafficking potency in Banjarmasin and Banjarbaru City is in karaoke entertainment, salon and hotel. While the mapping results of trafficking potency in Banjarbaru City is the rise of illegal prostitution.

6.0   Discussions

Trafficking potency in South Kalimantan of the six areas of findings, the most vulnerable places are those of crossings which provide cheap hotels or inns and dimly lit stalls. In addition, several facts in the findings indicate that PSK or women working in karaoke are mostly from outside the South Kalimantan region. This fact further reinforces the notion that there is trafficking in South Kalimantan, but its nature is still shrouded. Meanwhile, the women who work in the karaoke are vulnerable communities and tend to become victims of this covert trafficking. As revealed by Kartini (2001: 186-187), there are eight categories of prostitution and two of them are bar girls or B-girls: girls who work as barmen and are willing to provide sex services to the visitors.

Other categories are gold diggers, girls and beautiful women, flight attendants / mannequins, singers, stage performers, movie stars, and many others. It is generally difficult to play sex with them and they are trying to seduce to make a profit. This concept actually intensively provides an overview of motivation of some of the women who work in karaoke places. Most of the interview results mentioned that economic motivation becomes the dominant factor and this also opens opportunities for the emergence of organized syndication to make women as a tool for economic gain.

It has the similar fact to dimly lit stalls which are widely available in the area of crossing or trans-Kalimantan lines. In the case of stalls, there are many stalls in Tabalong Regency. The workers are mostly women aged 14-20 years. Their motivation to work is due to economic factors. The existence of migrant workers agencies shows that there are still many illegal migrant labor agencies. The emergence of these illegal migrant labor agencies has the potency for trafficking cases. In addition, operating licenses for aggregates that only one knows also have the possibility of leading to trafficking because the first year can be used by the agency to study the situation of the region concerned.

7.0   Conclusion

Referring to the findings and discussions, it can be concluded that human trafficking in South Kalimantan occurs in the following areas: in the mining industry (coal), hotels, dimly lit stalls, entertainment places such as salon and karaoke, as well as prostitution. The motive itself is

economic need, and the purpose of human trafficking is to create exploitation/prostitution, forced labor, slavery. For that reason, there needs to be more serious supervision from various parties, especially for the areas of the trading industry and the crossing lines that provide places of immoral freedom. There needs to be clear regulation especially from the government in regards to the entertainment industries employing women and enslaving children. The emergence of a common consciousness to supervise the entertainment industry, beauty salons, hotels, stalls and prostitution localization. Therefore, the strategic thing is the need to establish a multi-stakeholder institutional or multilateral institution.

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Indigenous Knowledge-Based Learning Model of Social Studies (Study of Development of Indigenous Knowledge-Based Learning Model for Basic Education in the City of Banjarmasin)

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Abstract:

The background of this research was the need for Social Studies based on local knowledge with indigenous knowledge. This study was aimed to produce a model of inquiry in order to improve skills and social competence of students in learning Social Studies in elementary school. To achieve these objectives the research was conducted using the of research and development approach. Broadly speaking, the stages of the study include (1) reconnaissance to identify indigenous knowledge and learning conditions Social Studies is running, (2) development of a model based on the results of reconnaissance, (3) model validation. The development of the model was implemented with limited testing and extensive testing. Limited testing was performed on 1 (one) public primary school. Extensive testing was carried out in 2 (two) public primary schools. The selection of schools was based on the environmental characteristics of the rivers and swamps. The results of the testing showed the development of improved models of student learning outcomes and teacher performance.Validation results showed that the high ability and social competence of students differed significantly as it was compared with the pretest result ($\alpha \leq. 0001$) as well as with the control group ($\alpha \leq. 0001$). The findings of this study concluded that Social Studies learning by integrating indigenous knowledge using inquiry models was effectively to enhance students' skills and social competence, relevant to use in teaching Social Studies, effective way to improve teacher performance, so it can be concluded that the integration of indigenous knowledge in a model of inquiry learning with effective social studies used to improve the quality of processes and products social studies teaching in primary schools, especially in the city of Banjarmasin.The findings of this study have positive implications for the development of teaching Social Studies in elementary school.

Keywords*: Model, Teaching, Social Studies, Indigenous, Knowledge

1.0   Background of Study

South Kalimantan has a socio-cultural wealth in the form of Indigenous knowledge as intellectual qualities tribes in South Kalimantan in the maintenance and utilization of natural resources. The forms of socio-cultural lives in the context of local wisdom contained in South Kalimantan which have its own characteristics when it is compared with the other islands across Indonesia.

School as an institution in building the personality (intellectual, moral, and skills) is required its contribution to the maintenance and the use of Indigenous knowledge that has long lived, so it can contribute to the natural and social harmony.

The interesting thing in the curriculum is the emphasis of local excellence in educational programs. The demands of the curriculum and the development of science and technology require new paradigm in social sciences teaching. And the innovations in the teaching of social sciences, especially Kalimantan South Kalimantan needs to be conducted consistently. At certain time, it may foster favorable conditions return, peace, harmony, and familiar environment. Social science learning can be a vehicle for the development of local wisdom in Kalimantan (South Borneo).

2.0   Problems of the Study

1. How is the social studies teaching model through indigenous knowledge-based in schools?
2. How is the implementation of the social studies model teaching in school through indigenous knowledge-based?
3. How is the final model of teaching social studies in school through indigenous knowledge-based?

3.0   Goals of the Study

1. Describing the lives of Kuin and Alalak people related to the utilization of the environment.
2. Developing the model of social studies teaching in school through indigenous knowledge-based.
3. Implementing the social studies teaching model in school through indigenous knowledge-based.
4. Generating the social studies teaching model in school through indigenous knowledge-based.

4.0   Research Method

The study was conducted through Research and development (R & D) by Borg and Gall (Putro, 2012: 207-2016). The validity of the model was done by quasi-experiments that is experimental design with control in accordance with the conditions (situational) by McMillan & Schumacher (Putro, 2012: 207-2016). The inquiry model is the experimental variable; the control variable is the conventional model. The study design Pretest – post-test Control Group Design. Further description of the method on the chart as follows:
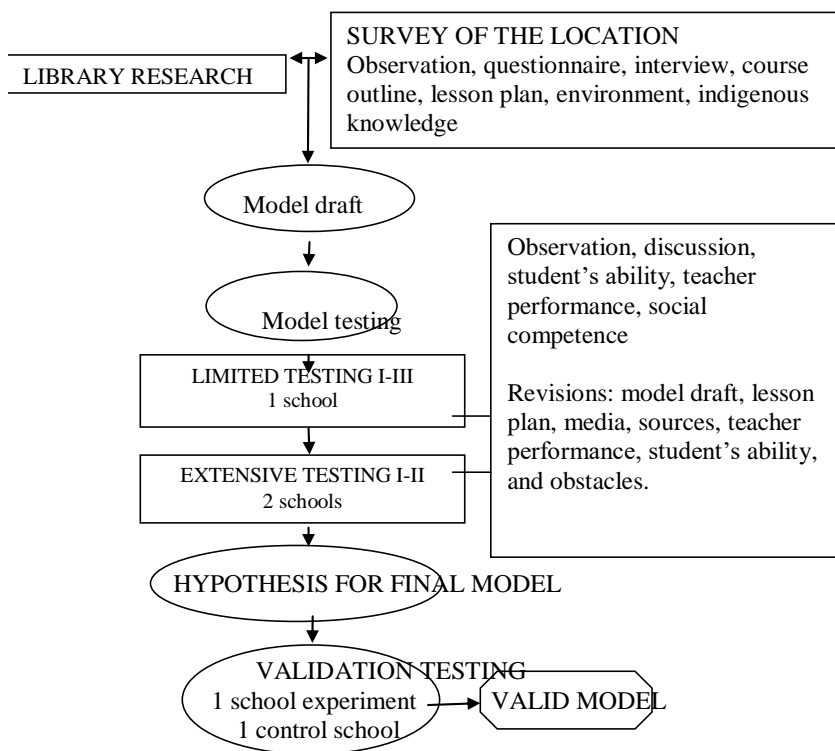
Figure 1: Research Flowchart

The location of the research is in public elementary schools in Banjarmasin, South Kalimantan. The subjects were fifth-grade teachers and students. The samples taken at the testing stage purposive random sampling. School test sample was classified. Classification was based on the perception of society, near rivers and swamps, and the availability of infrastructure. Determination of the sample schools was adapted from the model validation phase of research needs or purposive sampling of the schools was established experimental groups and one control group schools.

Based on the focus of research and the types of the data, in this study, it is used four instruments to capture the data, namely: (1) observation sheet, (2) questionnaires, and (3) testing capabilities.

Processing techniques and data analysis from the reconnaissance were conducted with qualitative methods to identify indigenous knowledge in the environment around the students and describe the Social Studies teaching in public elementary school in Banjarmasin City. On the development of classroom observation, the data model is qualitatively analyzed subsequently revised and tested again. Data beginning of the learning ability of students (pre-test) and the end of the lesson (post-test) were analyzed quantitatively by *t* test. *T* test was also used to view test results of each test cycle as a revision of the next cycle to obtain the final model. At this stage of model validation of qualitative analysis is performed on data from classroom observation to see the picture of the effectiveness of the model, while the quantitative analysis was conducted by *t* test by comparing the pre-test and post-test results of the student ability between the

experimental and control groups. Quantitative analysis of this study was calculated by using SPSS.

5.0   The Result of the Study

5.1   The Result of Reconnaissance

Banjarmasin city in South Kalimantan are the old home place and the origin. Indigenous Knowledge can be found in geographical aspects, social, cultural, and economic. Indigenous Knowledge can be integrated in learning elementary Social Studies because in accordance with the concepts of Social Studies in elementary school.

The utilization of the environment as a learning resource has been developed in education by which the notion that a local wisdom is a social force (Brophy and Alleman, 1996: 33) that there are three levels of social forces or social forces in the curriculum, namely: national and international level, local community, and culture of the educational setting. Added by Massialas and Allen (1996: 61) "Local interest groups demand Often That Their content or materials about particular ethnic group or issues be included in the world studies curriculum."
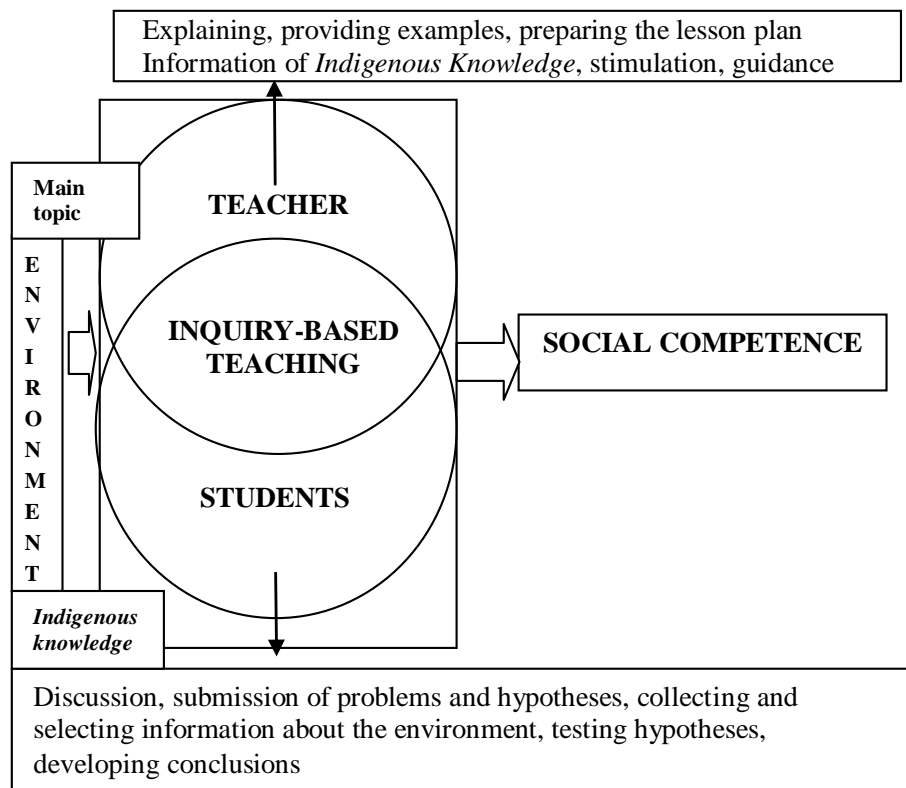
Environment and culture around the student as learning resources are able to foster socio-cultural competence that lead to feeling of possession of the environment and the culture and thinking skills in maintaining and managing the environment. Students can become the successor public figure, Woolever and Scott (1988: 5) says about expanding environment approach.

The role of environment around the students as a resource for effective learning is described by Beyer (1979: 133) "Their schools and communities as data."

Local-based Social Studies teaching model according to most important teacher was developed so that students are more active and have social skills. Scientific activity according to the characteristics of the social science teaching should be developed in the Social Studies, one of them in the form of inquiry approach.

The students expect that the Social Studies teachers provide a discussion, active, and give examples of some real events around the students' lives. The reconnaissance results show that the teachers ate dominant in the teaching and learning; thus, intellectual skills are less developed.

There some aspects of Social Studies teaching that need to be developed as follow (Beyer, 1979):

6.0   The Result of Model Development

6.1   Teaching Activities

Activities of indigenous knowledge-based social science learning through inquiry approaches described in the following table teaching activities:

Steps	Findings
Introduction	- Students were involved in the preparation of teaching and learning activities. - Delivery of learning objectives can foster students' interest about the benefits of the subject. - Explanation of the model helps to launch inquiry learning. - The success of growing interest and motivation influence the next stage of learning.
Proposing problems	- Explanation of the learning materials was more successful with the dialogue, using instructional media (charts, pictures, etc.). - The activity would be more successful when students had to prepare the learning materials and supporting information, linking teachers and learning materials in the actual context of indigenous knowledge. - Indigenous knowledge in helping students develop an interest and understanding of Social Studies.

	- The division of time must be strictly observed by the teacher. - Encouragement and guidance from the teachers are required in full. - Examples of problems may greatly help students. - The problems in the form the question of intellectual skills were effective. - Teachers demanded attention and respect of each issue raised students. - Selection of all the problems together and discussion - The problems were posed read and written on the blackboard by the students. - Students were able to develop the controversial issues about the environment.
Proposing hypothesis	- Hypothetical example in the form of indigenous knowledge was to facilitate the preparation of the hypothesis. - Guidance and encouragement from the teachers were needed to make the students prepared with the correct hypothesis. - Hypothesis should be accompanied by the reasons provided by the students. - To foster appreciation and motivation of all students, it was proposed the hypothesis that (rightly or wrongly) were accommodated and written on the blackboard, then selected together. - Social skills could be seen from the emergence of aspects of indigenous knowledge in the hypothesis, respecting opinions of others, togetherness, and the reasons put forward the hypothesis.
Information gathering	- The teacher has provided the material as a source of information for the students. - Teachers have been integrating indigenous knowledge with the subject matter. - Guidance and encouragement from the teachers were necessary for students to collect, select, and organize the information correctly. Teachers needed to give examples and explain the purpose of extracting information carried. - Students were able to prepare and gather information from the surroundings before the lesson begins. - The completeness of the information can foster students' interest. - Students were able to determine the relationship between the collection of information surrounding the collection of other information, the basic ideas underlying the information, and is able to draw the consequences of information both in time and dimension. - Social skills of students can be seen through the digging activity, process, use information, and understand the meaning contained in the sources of social information.
Hypothesis	- Guidance and examples of hypothesis testing of teachers were

testing	needed.
	- Social skills of students can be seen from the discussion, analyzing, linking hypotheses have been proposed with the information already obtained.
Drafting the conclusion	- Guidance and examples of the conclusions of the teacher were still needed.
	- Students actively develop and propose hypotheses.

Based on the limited testing and extensive testing, there are some demands for the teachers' performance as follow lists of the demanded teachers' performance in Social Studies teaching through indigenous knowledge-based inquiry model:

Steps	Teacher's performance
Introduction	1. Involving the students in preparing the teaching materials 2. Question and answer to develop the interaction between the students and teachers. 3. Increasing the students' attention with teaching media e.g. picture, music, etc. 4. Identifying and integrating the aspects of the environment around the student and indigenous knowledge 5. Inviting the students to observe, demonstrate, and explain the media actively.
Proposing problems	1. Explain the purpose, learning models, outline of the subject. 2. Providing examples of events around the students and indigenous knowledge 3. Providing examples of the preparation of the problem 4. Guidance and encouragement to the students to prepare and submit problems 5. Explain the concept of the problems
Proposing hypothesis	1. Explaining the meaning, the purpose of preparing a hypothesis 2. Giving a hypothetical example 3. Guidance and encouragement to the students to develop a hypothesis, put forward the hypothesis, the hypothesis selection
Observing the information	1. Explaining the purpose and how to observe information 2. Giving examples of digging for information 3. Preparing materials 4. Preparing the materials from the environment and indigenous knowledge about students 4. Guiding the process, compile information, and link the information obtained
Testing the hypothesis	Explain the purpose of testing hypotheses and guide the linking information obtained by the hypothesis.
Drafting conclusion	1. Explaining the purpose and give examples of conclusions 2. Guiding to develop conclusions based on hypothesis testing has been done students.

Follow up	1. Evaluation
	2. Task: studying the subject further, to reconstruct the information has been obtained, prepared materials.
	3. Identifying indigenous knowledge in the neighborhood

6.2   *Learning Activities of the Students*

Social Studies teaching model through indigenous knowledge-based can develop the activities of student inquiry. Students are encouraged submit problems, solve the problem (by hypothesis), to identify the environment and indigenous knowledge, social events observed in the form of drawings (to dig), and prepare and submit conclusions.

The success of using the model of inquiry learning is also seen from the increasing ability of students. *T* test results of students' skills before the test (pre-test) and after the test (post-test) on limited testing and extensive trials showed a significant difference, the $t_{count} > T_{Table}$. The ability of students in each trial (limited scope or wide scope) have increased, are shown the results of the t test with paired samples posttest on each inter-cycle.

7.0   The Results of Model Validation

1.   Teaching activities are more interesting and able to develop the creative thinking: The atmosphere is more lively and dynamic learning, teachers are able to present examples of contextual knowledge indigenous, teachers are able to develop teaching skills, students are able to make a simple conclusion

2.   Social Studies teaching is cleared and effective: Students are learning more scientifically, teaching materials can be packed in such case study, *Indigenous knowledge* and the environment around the students can be integrated into teaching process, Materials are suitable issue more directly, making it easy to understand, growing the positive attitude of students as a form of social skills (empathy, caring, respect, and respect, cooperation, democracy, humanity and freedom), teachers are able to develop thinking skills in the form of the problem, proposing hypotheses, and interpretation of the sources.

3.   Implication of the Model to the Ability of the Student: A model of excellence in improving student learning can be seen in the validation test, the post-test results of the comparison between the experimental group (KE) to the control group (HH). The value of t_{count} 4.95 > the value of $t_{table\ \alpha\ 0.05} = 1.66$; and the Sig (2-taled) = 0.000 < half of α = of 0025. Based on the results of limited testing, extensive testing, and validation tests.

4. Chart model and the final model of Social Studies teaching through *indigenous knowledge-based* with inquiry model is as follows:
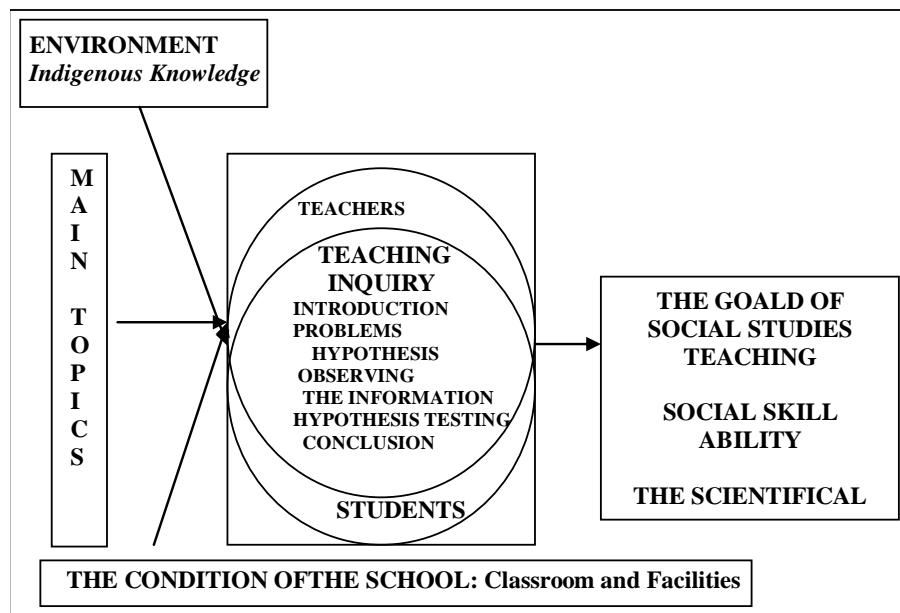
Figure 1: Chart Model

Table 1: Instructional Design

➢ Teaching indicators: Students' social competence, the ability of scientific thinking

➢ Teaching materials: The description of Social Studies events with the support of indigenous knowledge around the students, natural and artificial environment around home and school, the natural appearance of the environment and its relationship to social and cultural life, distribution and utilization of natural resources for economic activities in the local environment, heritage in the local neighborhood and to maintain its sustainability, the development of production technology, communications, and transportation as well as experience of using it, based on the motive of economic action and economic principles in a variety of daily activities, patterns of economic activity of the population, land use and settlement patterns based on the physical condition of the environment, the principal economic activity, environmental issues and mitigation efforts in sustainable development, economic actors, the shape of the market in the economic activities of society, social institutions in society, utilization of natural resources wisely, the original economic system to solve economic problems, the inheritance of science and technology and the barriers in society

➢ Teaching procedures: Introduction, proposing problems, guiding the problems, explaining the concept, proposing hypothesis, observing the information, proposing hypothesis, and drafting the conclusion.

> *First step: Introduction*
>   Pretest, frequently asked questions or discussions about subjects that have been studied, the responses to information that has been prepared students, displaying teaching media (images, photographs, maps, etc.) indigenous knowledge in students

> *Second step: proposing problems*
>   Explaining the purpose of learning, explaining the subject with examples from the surrounding environment or indigenous knowledge, guiding and encouraging, discussion, submission of issues, identification of problems

> *Third step: proposing hypothesis*
>   Explanation of the hypothesis, guiding in drafting hypothesis, proposing hypothesis

> *Forth hypothesis: observing of the information*
>   Preparation of materials, explanation and purpose of extracting information from the surrounding environment, guiding and encouraging students, identifying, collecting, interpreting, classifying, and analysis

> *Fifth step: testing hypothesis*
>   Explaining the hypothesis testing, discussing, identifying the order and rules, determining the conclusion

> *Sixth step: proposing conclusion*
>   Explaining the objective of the conclusions, guiding and encouraging students, discussion of finding the relations between information and hypotheses, formulate conclusions discussions, establish the conclusion, the task of students and Post-test

> Sources :
>   Social studies textbooks, images, photographs, map, and indigenous knowledge around the students

> Evaluation:
>   Students' competence measured through essay writing test containing the information about the surrounding environment based on the indicators of the study

8.0   Conclusion

8.1 General Conclusion

Development and validation of the model results show that the model can be implemented in Social Studies teaching through indigenous knowledge-based with inquiry. Learning activities in the form of scientific steps students can be done by the students (find the problem, propose a hypothesis, collect information, test hypotheses, and proposed conclusions).

The model used in the Social Studies teaching through indigenous knowledge-based as demanded by the curriculum and can be used as one approach to teaching Social Studies to the

growth of social competence among students. The study findings suggest that students are able to explain and analyze the issues related to social, cultural, economic, and environment based on indigenous knowledge in the surrounding environment.

8.2　Specific Conclusions

a.　Settlement patterns in the linear region are along the river. Banjarmasin is the native village, pristine physical condition regardless of any change. The condition of Banjarmasin have timber industry along the river.

b.　People in Banjarmasin have indigenous knowledge in accordance with environmental and natural characteristics. Indigenous knowledge is still visible regarding environmental aspects of utilization and maintenance of the environment, namely: the results are used to run and environmentally friendly activities. Economic aspects of indigenous knowledge have the dominant impression. Economic activity is associated with the use of a traditional business environment and a lot of looks this area can be found in the economic life of a typical activity. Socio-cultural aspects are found in the form of numerous historical buildings and places of the region, this area is the location where the beginning of the Sultanate of Banjar. Habits of the people can be seen in accordance with natural conditions and environment of rivers and swamps.

c.　Social studies teaching through indigenous knowledge-based model is to enhance the ability of indigenous knowledge and social competence in elementary school students Banjarmasin City is designed with attention to: (1) the characteristics of Social Studies of science, (2) curriculum, (3) the wealth of indigenous knowledge in Banjarmasin (4) Social Studies from the result reconnaissance learning, and (5) studies of learning models. Learning model is a model of inquiry developed.

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The Development of Student Worksheet Using Guided Inquiry Learning Model to Train Science Process Skills

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Abstract:

The current student worksheet does not meet the quality of a good student worksheet, and students' science process skills (SPS) are still low. Therefore, this study aims to describe the feasibility of student worksheet using guided inquiry learning model, viewed from of the validity, practicality, effectiveness, and achievement of students' SPS. This research employed a research and development using ADDIE design. The tryout subjects of this research were 27 students of grade VIIIA SMP Negeri 3 Belawang. The instruments of this research were student worksheet validation sheet, questionnaire, learning result test, and SPS observation sheet. The result of the analysis shows that the student worksheet has a valid category, a very practical category, moderate effectiveness category, and a very good students' SPS. It is concluded that the developed student worksheet using guided inquiry learning model to train SPS is feasible for learning process in school junior high school on the topics of light.

1.0 Introduction

Teachers have an important role in preparing teaching materials (Suprihatiningrum, 2016). Teaching materials (one of them a student worksheet) must be prepared to achieve basic competence has been determined. Student worksheet designed by teachers are expected not only to make students master the knowledge aspect, but also the process. Physics learning must be optimized by the teacher to the students to participate more in the learning process (Hartini et al., 2017). This is in accordance with the applicable curriculum 2013 so that the learning process is centered on students, so students become more active.

The process of physics learning is characterized by the emergence of scientific methods. The scientific method is obtained through a series of scientific work, scientific attitude and science process skills (SPS) (Sadia, 2014). The essence of studying physics is not just knowledge but also aspects of attitude and skills. Mastery of this SPS is an important thing to master for someone who is studying physics. SPS as a link to the development of concepts and values (Misbah et al., 2018). Improving the SPS students can improve learning achievement (Kurniawati et al., 2016).

The current learning, many delivered are memorized, without going through the processing of potential that is in the students. So that learning is less meaningful for students (Rizkianawati, 2015). Physics learning process more only on cognitive aspects, less optimize aspects of student attitudes and skills (Misbah et al., 2018). In addition, there are still a few

teachers who develop teaching materials independently (Nisa et al., 2013). Based on the interview with a science teacher at SMP Negeri 3 Belawang, obtained information that the student worksheet was used, does not meet the quality of a good student worksheet (didactic, constructive, and technical aspect). As the quality of the print is less clear, less encouraging students to learn independently, a practicum procedure that is fewer train students' SPS. Physics learning is more centered on teachers so that students are less active in learning. Lack of practicum activities, making students less trained SPS. So low of student's SPS. Based on student learning outcomes, only 20% completed in learning. This shows that there are still many students who get low learning outcomes.

The above problems can be solved through the development of student worksheets that are appropriate to the characteristics of teaching materials. Student worksheet which contains the steps and instructions to complete a task is needed to support the learning process and to ease students and teachers (Prastowo, 2014). Student worksheet that appropriates the didactic, constructive and technical aspects can improve the quality of learning (Misbah et al., 2018) and assist students in the learning process so as to improve student learning outcomes and SPS. Student worksheet on the topics of light can be combined using a guided inquiry learning model. This is in accordance with the basic competency is expected to demand the students to investigate.

SPS that students can increase the activity of students in finding a concept that is based on scientific measures. Student experience when conducting investigation activities can increase motivation to learn better so that the SPS can be achieved (Rahmani et al., 2016). SPS can be trained through guided inquiry learning model. Guided inquiry learning model is the inquiry is a learning model that emphasizes the searching and finding process (Hosnan, 2014). The teacher only acts as a facilitator for students in learning. Guided inquiry model application can improve students' SPS (Karim et al., 2016). Based on the above description, then conducted research development of student activity sheets using guided inquiry learning model ".

Based on the background above, the problem was formulated in general. "How is the feasibility of developing the student worksheet using the Inquiry Learning model viewed from the validity, practicality, effectiveness of student worksheet, and the achievement of students' SPS?".

2.0   Literature Review

2.1   *Student worksheet*

The student worksheet is sheets of steps and instructions to complete a task (Prastowo, 2014). There are 3 conditions that must be met to make a good student worksheet, such as didactic, constuction, and technical aspects (Darmodjo & Kaligis, 1993)**.**

2.2   *Inquiry model*

Inquiry a learning process involving students actively through investigation to construct their own knowledge (Chiappetta & Koballa, 2010). In a guided inquiry approach the instructor provides the problem and encourages students to work out the procedures to resolve it. The teacher is available as resource person, giving only enough aid to ensure that the students do not become too frustrated or experience failure (Trowbridge & Bybee, 1986). In guided inquiry learning teachers always involve students, the role of teachers is to guide and guide students during the experiment (Amalia et al., 2016). The inquiry phase includes the orientation of the problem, formulating the problem, formulating the hypothesis, collecting data, testing the hypothesis, and formulating the conclusions.

2.3   *Science Process Skills (SPS)*

SPS are a set of skills that scientists use in conducting scientific investigations (Rustaman et al, 2012). Basic capabilities or skills according to (Semiawan et al., 1992) include observation including counting, measuring, classifying, and finding time relationships, hypotheses, planning research / experiments, controlling variables, interpreting or interpreting data, temporary conclusion, predicting, applying, and communicating.

3.0   Method

This research development design used the ADDIE model (Analysis, Design, Development, Implementation and Evaluation) (Tegeh et al., 2014). Details of the development design can be seen in table 1 below.

Table 1: The design of this research development uses ADDIE model

Steps	Activity
Analysis	Identify problems in class VIII SMP Negeri 3 Belawang, analyze the characteristics of the students and the characteristics of teaching materials and learning objectives.
Design	The student worksheet to design combined with a model of guided inquiry on the topics of light. .
Development	Making student worksheets in order to train students' SPS. The student worksheet validated by 2 validator experts.
Implementation	Implement the product produced in class VIII A SMP Negeri 3 Belawang
Evaluation	Evaluate the feasibility of the product from the aspect of validity, practicality, effectivity, and the achievement of students' SPS.

The tryout subjects of this research were 27 students of grade VIII A SMP Negeri 3 Belawang, Barito Kuala. The type of data, collection techniques, and research instruments can be seen in table 2.

Tabel 2: The type of data, collection techniques, and research instruments

The type of data	Collection techniques	Research Instrument
Validity	Questionnaire	Validation sheet of the student worksheet
Practicallity	Questionnaire	Questionnaire
Effectivity	Test	Learning result test
SPS	Observation	Observation sheet of SPS

The examples of questionnaire used to measure the practicality of student worksheet can be seen in Figure 1. The aspects that are measured include the ease of use, benefit, and time efficiency.

No	Pernyataan	Pilihan Jawaban				
		TS	KS	RR	S	SS
1	Lembar kegiatan siswa (LKS) menggunakan bahasa yang mudah dipahami.					
2	Petunjuk kegiatan dalam LKS jelas, sehingga mempermudah saya dalam melakukan semua kegiatan.					
3	Pemilihan jenis huruf, ukuran serta spasi yang digunakan mempermudah saya dalam membaca LKS.					

Figure 1: Example of a questionnaire to measure practicality

Data analysis technique used is descriptive data analysis. The validity of student worksheet is measured using validation sheet obtained from expert judgments (Akker et al., 2013)**.** The results of validation calculations in this study is the average score (X) from the assessment of the experts. The practicality of the developed student worksheet was measured using a questionnaire (Misbah et al., 2018)**.** The effectiveness of student worksheet is measured by comparing student learning outcomes (both pretest and posttest) (Retnosari et al., 2015), it is then analyzed using N-gain score (Hake, 1999) . Analysis of students' SPS is done by using the equation:

$$NA = \frac{\bar{X}}{N} x\ 100\ \%\qquad (1)$$

4.0   Result and Discussions

4.1   Result

Product from this research is in form of a student worksheet using guided inquiry learning model on the topics of light. The following LKS product developed can be seen in figure 2**.**

Figure 2: Student Worksheet Developed

Feasibility of the student worksheets uses the guided inquiry model on the topic of light for junior high school students viewed from validity, practicality, effectiveness, and achievement of students' SPS. Validity of the student worksheet is measured using a validation sheet covering aspects such as format, language and content. The results for validation of student worksheet can be seen in Table 3.

Table 3: Validation Result of Student Worksheet

No	Aspect	Average Score	Category
1	Didactic	3.39	Valid
2	Construction	3.00	Valid
3	Techinal	3.35	Valid
Reliability		0.99	High

The practicality of the student worksheet is measured using the student response questionnaire. Results of practicality of the developed student worksheet can be seen in table 4.

Table 4: Practicality of Student Worksheet

Scoring Aspect	Average	Category
Easy to use	85.74 %	Very Good
Benefit	84.69%	Very Good
Time Efficiency	81.73%	Very Good

The effectiveness of student worksheet is measured using the learning result test. The students' learning outcomes were calculated using the N-gain test as shown in table 5.

Table 5: Effectiveness of Worksheet

Aspect	Average	Category
N-gain	0.63	Moderate

Assessment of SPS is assessed using the SPS observation sheets. The analysis result SPS achievement can be seen in Table 6.

Table 6: Achievement of students SPS

Indicator of SPS	Meeting 1	Category	Meeting 2	Category	Meeting 3	Category
Observing	75.85	Good	74.15	Good	76.25	Good
Questioning	84.15	Very Good	88.35	Very Good	93.75	Very Good
Experimenting	75.85	Good	85.85	Very Good	87.50	Very Good
Associating	77.50	Good	94.15	Very Good	92.50	Very Good
Communicating	71.65	Good	77.50	Good	91.25	Very Good

4.2   Discussions

The student worksheet uses guided inquiry model which is expected to be able to train students' SPS, including aspects of observing, questioning, experimenting, associating and communicating. The student worksheets were developed on the topicof light, which consists of the properties of light (propagation, reflection, and refraction of light), reflection (reflection of light on a flat mirror, concave mirror, and convex mirror) as well as refraction of light (refraction of light on convex and concave lenses).

Based on Table 3, validation worksheets that are developed from the aspects of didactic, construction, and technic have a valid category. This indicates that the developed worksheet has been suitable in format, language and content of the worksheet, and has fulfilled the aspects of the good worksheet. As what is noted by (Darmodjo & Kaligis, 1993), a good worksheet must meet various aspects such as didactic, construction and technical aspects. Didactic aspects refers to the opportunity for students to write or even communicate with their friends. Construction aspects include the use of language that is easy to understand and in accordance with the level of childhood maturity. Technical aspects include suitability between writing and figures and have an attractive appearance. Mukarram et al., (2014) stated that the interesting appearance of worksheet can encourage students to be more enthusiastic in learning activities.

Based on Table 4, the practicality of the developed student worksheets is categorized as very well viewed from the aspects of easy-to-use, benefit, and time efficiency. This indicates that the developed student worksheet is easy to use (Akker et al., 2013). The student worksheet provides something new like presenting events that exist around the learning activity, a more attractive appearance and a communicative aspect. The actual events which are related to learning activities to be performed are in the student worksheet. So, before students do the experiment students firstly observe figures of events existed around them as stimulus and motivate students' curiosity. The existence of cartoon characters in the developed worksheet is expected to attract students' attention and match the level of maturity of children who are still in the range of age 13-14 years. This has an impact on the ease and benefits of the use of the developed worksheet.

Based on Table 5, the effectiveness of developed student worksheets is categorized as effective or moderate. This is because of the worksheets used through guided inquiry model. Student worksheets using guided inquiry models make students active in the learning process (Anderson, 2002)**.** Students reconstruct their own knowledge using the SPS. As a result, the acquired student knowledge will last for a longer time and will be easier to remember (Hamdani, 2011). This affects the acquisition of student learning outcomes.

Inquiry learning makes the mastery of students' knowledge better (Abdi, 2014). This is supported by the research of Damayanti et al., (2013) which shows that the application of guided inquiry model can improve student learning outcomes.

Based on Table 6, each indicator of SPS has increased every meeting with category good and very good. LKS is developed especially able to explore students' questioning, experimenting, associating, and communicating ability with very good category. Student worksheet uses guided inquiry models, requiring students to actively use their SPS such as observing, questioning, experimenting, associating and communicating. As a result, students' science skills become well trained. This is supported by a research by Karim et al. (2016) which shows that guided inquiry based worksheet is able improve students' SPS. This is also in line with the theory of learning behaviorism proposed by Thorndike that the more often a behavior is trained, the stronger the response will be (Suprihatiningrum, 2016)**.**

5.0   Conclusion

Based on the result of development and test, it is concluded that worksheet using a guided inquiry learning model is feasisible for learning process in senior high school on the topics of light. This is supported by the student worksheet have a valid category, a very practical category, moderate effectiveness category, and a very well students' SPS.

6.0   Recommendations

The limitation of this study is that the student worksheet which is developed only focusing to train the basic process skills. In the future studies, it is expected that student worksheet uses guided inquiry model so that it is able to train integrated process skills. Then, the student worksheet is added with columns of abstraction or analysis and application of material in the field of technology or everyday life. Therefore, students learn science is not only to train the SPS, but also to master higher knowledge aspects.

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Copyright statement

Can a Translator Rely on Translation Machine in Translating Source Text into Target Text?

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Abstract*:*

The question that would be answered in this study was: How does TM translate abbreviations in the SLT into the TLT? The research method used in this study was descriptive qualitative. The sources of data were 2 Indonesian abstracts written by S2 students of Lambung Mangkurat University as the SLT. The abstracts were then translated into English using Google Translate as TLT. The results show that, in general, TM can help translators translate SLT into TLT. However, when it translated abbreviations of SLT TM could partly translate Indonesian text as the SLT into English as the TLT. Some were kept remained in the same form, some others were translated if there were enough hints that preceeded or followed, and some were translated in different versions.

Keywords: Translation, Translation Machine, text, Source Language Text, Target Language Text

1.0 Introduction

In general, there are two methods of translation usually applied by a translator: literal translation and free translation (Aissi, 1987). In the tradition of Arabic translation, for example, the first method refers to the method which consists of finding to each source language word its Arabic equivalent and keeping the same structure of the SL text in the target language. The latter, refers to the method that consists of rendering the meaning of the SL sentence into Arabic (Aissi, 1987).

In the effort of producing an acceptable translation a translator should at least: (1) master the system of the source language (SL), (2) master the system of the target language (TL), (3) have adequate knowledge on the field of the text he/she is translating, and (4) master suitable techniques of translation (Muhammad, 1985).

In addition to the obligation of mastering the system of SLT, a good translator should also master the system of TLT. This requirement may be easier and it can also be more difficult for a translator to accomplish. If the system of the two languages – SLT and TLT, is relatively close, mastering the system of TLT will be easier, for instance, the Malay language and Indonesian language. However, if the system of the two languages is extremely far, for example Indonesian and English, meeting the requirement can be more difficult to fulfill. The difference is not only laid in the words used, nor in the way they are spelled and pronounced but it also

originates from the linguistic concepts applied. For instance, English has the concept of tenses which necessitates a translator to produce different form of verbs used, whereas Indonesian does not have such concept. Apparently, if one tries to translate Indonesian text into English text he or she will surely face a big problem in transferring its meaning.

The next requirement that a translator should meet is that he/she has to possess adequate knowledge of the field being translated. People may think that anyone who has mastered two systems of different languages will be able to translate SLT into English as TLT or vice versa easily. This is not always true. There is other requirement that a translator should have, i.e. the adequate knowledge of the field he or she is translating. An Indonesian doctor who has mastered the system of Indonesian language and the system of English language, for instance, will surely not come across difficulties in translating Indonesian text as SLT into English as TLT as long as the text is about medical topics. However, if he/she has to translate the text that deals with literary work, for example, no doubt he or she will face problem. This is because the jargons and the registers he/she usually used and found in medical issues are mostly specific in the field. The same problem can also be experienced by a history teacher who has mastered the system of Indonesian language and the system of English that should translate a text relating to mathematics principles and solutions. It is assumed that he/she will find difficulties too.

The last requirement that a translator has to fulfill is to master the theory and the practice of translation. He/she has to be sure whether to translate through word to word, phrase to phrase, sentence to sentence or discourse to discourse. He/she also has to know when to translate literal translation, faithful translation, semantic translation, adaptation, idiomatic translation, or communicative translation. For translation is not just a matter of replacing a text in the source language into another text in target language, but most importantly is that it should be able to convey the meaning in SLT into the TLT.

By meeting all the requirements, as mentioned by Muhammad above, can a translator translate any kind of SLT into TLT with equivalent meaning? Some believe that any text can be translated, included texts of literally works. For instance, Classen (2012) claims that one can translate literally by rendering a text from one language into another language ……., metaphorically by explaining one phenomenon in culture x by transferring or correlating it to a paraller phenomenon in culture y, mechanically by resorting to a pedestrian, ordinary, or run-off-the-mill strategy, without any concern for aesthetics, structures, or for criteria that defined original ..., and by making one culture understandable to another, ... (Classen, 2012).

Some others believe that not all texts can be translated in a relatively equivalent quality of text, especially literary work. Kohoutková (2016) argues that it has to convey the mood, feelings, and emotions expressed in the original text. Melby (2005) argued that ..... even if you speak two or more languages fluently, it is not a trivial matter to produce a good translation. Glodjoviċ (2010) claims that the discussion clearly illustrates the pitfalls of translation and underpins the importance of knowledge of the culture with which one is attempting to communicate.

2.0   Translation Machine

Fortunately, the innovation of translation machine (TM) helps the job of a translator easier. A translator does not have to be qualified in the four conditions as mentioned earlier in this paper. Even, a non-translator can have his/her text translated into other language(s) by using TM. In a very short time, he/she can have the translation of his/her SLT translated in a TLT and in a relatively brief tempo he/she can produce abundance of pages of translation.

What is TM? According to Crasiunescu et al. (2004), TM is the applications of the computer to translation. It includes machine translation, electronic dictionaries, terminology databases, bilingual texts, grammatical concordances, and translation memories in order to determine whether they change the relationship between the translator and the text. The question is, "does the translated version of the text transmit the meaning of the ST"?

Some results of research show differently. Choy and Murphy (2012) claims that with the advent of Google Translate services, we will demonstrate how a simple command issued to Google can be used within SAS to generate the translated results. Denkowski (2015) insisted that one cannot completely rely on TM because many scenarios still require precise-human quality translation that TM is currently unable to deliver. Lagoudaki (2008) claims that the translation yielded from TM still needs feedback from translators. Voigt and Jurafsky (2012) discovered that Google translations perform less well at capturing literary cohesion.

In relation to the capability of TM in translating SLT into TLT the question that comes up to the writer's mind: How can TM translate abbreviations in SLT into abbreviations in TLT?

3.0   Translating abbreviations

Of course, there are rules on how to write abbreviations. However, the rules are not valid for abbreviations in any language. Rules of abbreviations of SLT are not automatically valid for TLT. As a result, translating SLT abbreviations may not bring the same meaning in TLT. Unless there are efforts in the part of the writer of the SLT to explain them, say, for example, in bracket, the problem may remain unsolved.

In Indonesian language, the rules of using abbreviations and acronyms are contained in Pedoman Umum Ejaan Bahasa Indonesia. According to Pedoman Umum Ejaan Bahasa Indonesia (2016), they are used in different situations and contexts. First, the name of people is followed by full-stop (.) for every component of abbreviation, for example, A.H. Nasution for Abdul Haris Nasution; M.B.A. for master of business administration, Sdr. for saudara, and so on. Second, they are also used for abbreviation of the name of government institution and administrations, education institution, board or organization consisting of the first letter of each, as well as official document which are written with capital letter without full stop. Abbreviation is also used if it consists of the first letter of each word which does not belong to personal name which is written in capital letter without full stop. Third, abbreviation which consits of three letters or more is followed by full stop, (e.g. hlm., for halaman, yth., for yang terhormat, etc.). Fourth, abbreviation consisting of two words which usually used in correspondence, followed by full stop (e.g. a.n. for atas nama; s.d. for sampai dengan). Fifth, Chemical symbols, abbreviation

of size, dose, scale or weigh, and currency are followed by full stop (e.g. cm for centimeter, Rp for rupiah, etc.) Sixth, the acronym representing the name of identity consisting of the combination of syllable or the combination of letter and syllable are written in capital for the first letter (e.g. BIN, for Badan Intelijen Negara; PASI, for Persatuan Atletik Seluruh Indonesia). Seventh, the acronym representing the name of identity consisting of the combination of syllables or the combination of letter and syllables are written in capital for the first letter (e.g. Bulog, for Badan Urusan Logistik; Bappenas, for Badan Perencanaan Pembangunan Nasional). Eighth, The acronym of non-identity which consists of the combination of first letter and syllables or the combination of syllables are written in small letter (Indonesia, 2016).

In English, abbreviation, according to Boulahdid and Nesrat (2014) includes acronyms, blends, and clipping. It usually but not always consists of a letter or group of letters taken from a word or a phrase (Boulahdid & Nesrat, 2014). According to Burmeister (2008), abbreviation is an arbitrary shortening of a word or words using more than one letter from each word (e.g. Television – TV), by substituting letters with an apostrophe (e.g. received – rec'd), by cutting off letters from the end (e.g. General – Gen.), or from the middle (road – Rd.), and adding a period, or, in postal standards, by eliminating most vowels and some consonants (e.g. boulevard – Blvd). Acronym is one of the abbreviations. It is defined as an abbreviation which is formed by combining the first letters (initials) or syllables of all or select word, resulting in a new grouping of letters that can be pronounced as a word (e.g. North Atlantic Treaty Organization – NATO) (Burmeister, 2008).

4.0   Method of Research

The research method used in this study was descriptive qualitative. The texts to be analyzed were the English translated texts as TLT from Indonesian texts as SLT. There were 2 abstracts written by S2 students of Lambung Mangkurat University. They were then translated into English using TM as TLT. In answering the question of this study, the researcher focused to assess the areas of abbreviations.

Abstract #1 was written by ABD, an S2 student of PSDAL (Management of Natural Resources and Environment Study Program). Here is the text:

(i) Penelitian ini dilakukan di MAN 5 Martapura Kec. Aluh-aluh Kab. Banjar. (ii) Penelitian ini bertujuan untuk membentuk kader konservasi siswa SMA/sederajat dengan menggunakan metode penelitian dan pengembangan (R and D) model ASSURE. (iii) Penelitian ini bertujuan: (1) mengembangkan modul konservasi keragaman ikan hutan mangrof yang valid bagi siswa SMA/sederajat, (2) mengembangkan modul keragaman ikan hutan mangrof yang dapat meningkatkan hasil belajar, serta (3) menetapkan kader konservasi ikan di hutan mangrof bagi siswa SMA. (iv) Hasil penelitian pengembanagn kualitatif pada uji validasi modul, uji perorangan (one to one evaluation), uji kelompok kecil (small group evaluation) dan uji lapangan (field evaluation) menunjukkan bahwa analisis kualitas modul valid, tetapi masih perlu dilakukan revisi. (v) Hasil analisis kuantitatif menunjukkan bahwa terjadi peningkatan hasil belajar siswa dari skor rata-rata 30.85 pada tes awal menjadi skor rata-rata 70.95 pada tes akhir, baik secara individual maupun kelompok. (vi) Penetapan kader konservasi siswa

menunjukkan hasil baik dan sangat baik sehingga sebanyak 14 siswa ditetapkan sebagai kader konservasi keragaman ikan di kawasana hutan mangrof.

When this text was translated into English as TLT by using Google Translate it read like this:

(i) This research was conducted at MAN 5 Martapura Kec. Aluh-Kabuh Kab. Banjar. (ii) This study aims to establish a cadre of conservation of high school students / equivalent by using research and development method (R and D) model ASSURE. (iii) This study aims to: (1) develop a module for the conservation of mangrove fish diversity that is valid for high school students / equals, (2) develop a module of mangrove forest fish diversity that can improve learning outcomes, and (3) establish fish conservation cadres in the forest mangrove for high school students. (iv) The results of qualitative research on module validation test, one to one evaluation, small group evaluation and field evaluation indicate that the module quality analysis is valid but still needs revision. (v) Quantitative analysis results show that there is an increase in student learning outcomes from an average score of 30.85 in the initial test to an average score of 70.95 in the final test, either individually or in groups. (vi) Conservation student cadre determination showed good and excellent result so that 14 students were designated as cadre of fish diversity conservation in mangrove forest area.

5.0   Findings and Discussion

The analysis of the abstracts # 1 in Indonesian language as SLT and the translated abstracts in English as TLT brings to the following findings.

Table 1: Finding in Abstract # 1

Aspect to analyse	SLT	TLT	Remarks
Abbreviations	MAN	MAN	Remained the same
	Kec.	Kec.	Remained the same
	Kab.	Kab.	Remained the same
	SMA	High School	Translated
	RD	RD	Remained the same
	ASSURE	ASSURE	Remained the same

From table 1, in the aspect of abbreviation it is found that there were six abbreviations in SLT, namely, MAN, Kec., Kab., and SMA, RD, and ASSURE. In TLT, there were only five abbreviations found, they were MAN, Kec. and Kab, RD and ASSURE. The abbreviation of SMA was translated into high school in TLT.

For this abstract, TM, in general, has succeeded in transferring the meaning of SLT into TLT. It clearly stated where the study was carried out, what objective(s) of the study was/were, what the method of study was employed and what the results of the study were. In detail, however, some abbreviations found in SLT were not adequately transferred into TLT. This would of course hamper the understanding of the intended meaning. For instance, MAN in SLT was kept in the same abbreviation in TLT. Fortunately, the use of preposition at gives the context. The reader of TLT can conclude that SMA in a place, whatever the letters in the

abbreviation stand for. The other potential problem that may hamper the understanding of TLT is the use Kec. after the proper name Martapura. They gave impression that Martapura Kec. is the end of the sentence for it ends with full stop (.). Proper name Aluh-aluh was followed by the abbreviation Kab. with full-stop (.) implies the end of the sentence, which was not actually a style of written sentence. The meaning of R and D could be easily guessed because two words, research and development, preceeded the abbreviation. However, the abbreviation of ASSURE may result in serious problem for a reader in understanding the abbreviation for those whose background knowledge and interest are not research.

Abstract # 2 was written by Dill, an S2 student of the Study Program of Science of Law. Here is the text:

(i) Tujuan penelitian ini adalah mendeskripsikan peran pemerintah dalam memberikan perlindungan dalam menegakkan demokrasi ekonomi demi kemakmuran dan kesejahteraan rakyat, melindungi pasar tradisional dari dominasi pangsapasar modern dari praktek monopoli dan persaingan usaha tidak sehat, menggali peraturan-peraturan yang sudah ada untuk mengoptimalkan penataan untuk mengendalikan pembangunan ritel modern sehingga tidak menggeser keberadaan ritel tradisional dan mengidentifikasi kepatuhan pemerintah daerah terhadap peraturan yang telah ada tentang penataan ritel modern dan ritel tradisional. (ii) Metode yang digunakan dalam penelitian ini adalah metode yuridis normative dengan pendekatan kualitatif. (iii) Ada 4 (empat) langkah yang ditempuh dalam metode penelitian kualitatif,yaitu (1) kualitas/kualifikasi data didapat dari hasil penelitian, (2) penelitian disusun secara sistematis, (3) pengambilan kesimpulan dilakukan dengan menggunakan metode induktif, yakni menyimpulkan suatu kasus dengan berangkat dari teori, doktrin dan undang-undang menuju kesimpulan yang bersifat umum dan (4) menjawab permasalahan.(iv) Teknik pengumpulan data yang digunakan dalam penelitian ini adalah studi kepustakaan dan penentuan lokasi menggunakan metode Purposive Sampling yaitu penarikan sampel didasarkan pada tujuan-tujuan tertentu.(v) Hasil penelitian menyimpulkan bahwa dalam menegakkan Demokrasi Ekonomi Pemerintah telah menerbitkan UU No.5/1999 tentang Larangan Praktek Monopoli dan Persaingan Usaha Tidak Sehat, PerPres 112/2007 dengan Permendag No.53/2008 dan Permendag No.70/2013 tentang penataan dan pembinaan pasar tradisional, Pusat Perbelanjaan dan Toko Modern. (vi) Mayoritas Pemerintah Daerah belum siap mengatur pasar modern di daerahnyasecara ketat, yang dibuktikan dengan belum adanya aturan turunan dari regulasi nasional tersebut di daerahnya.

When this text was translated into English as TLT by using Google Translate it read like this:

(i) The purpose of this study is to describe the role of government in providing protection in upholding economic democracy for the welfare and prosperity of the people, protecting traditional markets from the dominance of modern market share from monopolistic practices and unfair business competition, exploring existing regulations to optimize structuring to control development modern retailers so as not to shift the traditional retail presence and identify local government compliance with existing regulations on traditional retail and traditional retail arrangements. (ii) The method used in this research is normative juridical method with qualitative approach. (iii) There are 4 (four) steps taken in qualitative research method, namely (1) quality / qualification of data obtained from the research, (2) research arranged

systematically, (3) conclusion is done by using inductive method, ie concluding a case with departing from theory, doctrine and law to general conclusions and (4) answering the problem. (iv) Data collection techniques used in this study is literature study and location determination using Purposive Sampling method of sampling is based on certain objectives. (v) The results concluded that in upholding the Economic Democracy the Government has issued Law No.5 / 1999 on Prohibition of Monopolistic Practices and Unfair Business Competition, PerPres 112/2007 with Regulation of Minister of Trade No.53 / 2008 and Minister of Trade Regulation No.70 / 2013 on structuring and fostering markets traditional, Shopping Centers and Modern Stores. (vi) The majority of regional governments are not ready to regulate the modern market in the region strictly, as evidenced by the absence of derivative rules of the national regulation in the region.

Table 2: Findings in Abstract # 2

Aspects to analyse	SLT	TLT	Remarks
Abbreviaitions	UU No. 5/1999	Law No. 5/1999	Partly translated
	PerPres 112/2007	PerPres 112/2007	Remained the same
	Permendag No. 53/2007	Regulation of Minister Of Minister of Trade No. 53/2008 (Version 1)	Translated
		Minister of Trade Regulation No. 70/2013 (Version 2)	Translated

From table 2, it is found that there were four abbreviations in SLT, namely, UU, No., PerPres, and Permendag, but there were only two abbreviations found in TLT, they were No. and Permendag. The abbreviation of Permendag was written twice in SLT, but the way it was translated in TLT was slightly different. The abbreviation of Permendag No. 53/2008 was translated into Regulation of Minister of Trade No.53 / 2008 and Permendag No. 70/2013 was translated into Minister of Trade Regulation No.70 / 2013.

6.0   Conclusion

From the theories that underly the discussion, the texts which were analyzed, and the results of the analysis, this study finally comes to the conclusion that, in general, as long as the SLT is grammatically written in accordance with the rule of SL system and the SLT does not contain abbreviations, proper names, and cultural terms, a translator can rely on TM in translating SLT into TLT. However, if the SLT contains those language features, especially the ones that are not preceded or followed any hint or clue, (1) the meaning of abbreviations in TLT, (2) the meaning of proper names, and (3) the meaning of cultural terms may not be understood as they were meant by the writer.

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Teacher Professionalism

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Abstract:

Teachers' job as a profession includes educating, teaching, and training. Educating means continuing and developing the values of life, teaching means continuing and developing science and technology, while training means developing the skills of the students. Professional teachers constantly optimize the functioning of their students' brains and hearts for something useful and responsible. They can see with their heart, beside with their eyes. Thus, teacher is a very strategic and noble profession to save society from ignorance, and any behavior that destroys their future. Therefore, the improvement of professional ability of teachers needs to be done continuously. To support the government's effort to present professional teachers as well as to strengthen concepts related to teacher professionalism, some current issues, expected conditions, gaps, and recommendations are presented in this conceptual paper. The discussed points are expected to be taken into account for the betterment of the teachers and education.

1.0   Introduction

In the educational field, the existence of teacher is one very significant factor. The teacher is one of the most important parts of the teaching and learning processes, both in formal and informal education. Therefore, every effort to improve the quality of education cannot be separated from various things related to the existence of teacher. It is not questioned that in the past, present, and future, all educational institutions always try to ensure that their teachers are at the best performance of their task. In other words, they have an important task to prepare professional teachers.

A professional teacher must have the ability to organize a productive learning environment. A teacher at least performs tasks and functions to increase the knowledge, skills, and attitudes of students as human assets of the nation's future. In fact, in relation to the word "profession" in terminology, it is defined as a job that requires higher education for the betterment with a point of emphasis on mental work, not manual labor (Aziz, 2016). The mental abilities that are meant are the theoretical knowledge requirements as instruments for performing practical deeds. The profession is also defined as a certain position or occupation that requires special knowledge and skills gained from intensive academic education. Thus, the profession is a job or position that requires a certain skill (Kunandar, 2007). According to Yamin (2007), the profession has the understanding of someone who pursues a job based on skills, abilities, techniques, and procedures based on intellect. Muhammad in (Namsa, 2006) explains that the profession is a job field that in doing his job requires scientific techniques and procedures, has a dedication and how to address the field oriented expert service. In the sense of this profession

implied meaning that in a professional work required techniques and procedures that rely on the intellectual foundation that refers to the expert service.

To present professional teachers in society, the government never stops trying to improve teacher professionalism and welfare. The government has taken strategic steps in the framework of improving the qualifications, competence, welfare, legal and professional protection for teachers. These strategic steps need to be taken due to the high appreciation of a nation towards teacher as a person of the dignified profession. It is a reflection as well as one measure of the dignity of a nation. In the UK, and more specifically in England, professional teaching standards are administered by the Training and Development Agency for Schools (TDA). They encompass professional proficiency description from qualified teacher status to the advanced skills teacher. Meanwhile, in the USA, according to the No Child Left Behind (NCLB) act, highly qualified teachers are those who: hold a bachelor's degree, hold full state certification or licensure, prove that they know each subject they teach (USDOE, 2004:2 in Mockler & Groundwater-Smith, 2009). In the Australian context also, the professional teaching standards are initiated by Teaching Australia, the Australian Institute for Teaching and School Leadership to develop standards for advanced teaching and school leadership (Mockler & Groundwater-Smith, 2009).

In Indonesia, currently, there has been a strong commitment from the government, especially the Ministry of National Education and the Ministry of Research, Technology, and Higher Education to revitalize the performance of teachers, among others by tightening the requirements for anyone who wants to pursue career profession in the field of teacher training. With a minimum requirement of academic qualification as regulated in Act No. 14 Year 2005, teachers are expected to really have competence as a learning agent. Also, in this law, the word professional is defined as the work or activity is undertaken by a person and becomes a living income source that requires expertise or skill that meets certain quality or norm standards and requires professional education. It is mandated that teachers must have academic qualifications, competencies, educator certificates, physical and spiritual health, and have the ability to realize the goals of national education.

All in all, as a form of support to the government effort to spread the professional spirit among teachers as well as to strengthen concepts related to teacher professionalism, some current issues, expected conditions, gaps, and recommendations internally and externally for both current and prospective teachers are presented in this conceptual paper. It is expected that the discussed points can be taken into account for the betterment of the teachers themselves in particular and the education in general.

2.0   Issues in education

Year by year, things change, including the things in the educational field. Apparent current issues in the educational field are the emergence of technology in this industrial revolution such as the integration of blended learning and online learning in the teaching and learning as well as challenges for everyone in the global competition. In fact, the more changes take place, the more efforts need to be done. However, it is not merely a matter of changes and efforts, but it is related to how people put their point of views on these changes. Optimistic

people will see these changes as possibilities to be better while pessimistic people will have the opposite view.

Being apart from the aforementioned current issues, enough attention needs to be given to a not new issue namely teacher professionalism. This issue is experienced by both experienced teachers or those who have been teaching for years and prospective teachers. Seeing from an angle of its position, teacher professionalism is like a bridge to the aforementioned current problems. In other words, as teachers become professional, they are expected to be ready to face every change.

In Indonesia, the Act No. 14 Year 2005 Article 1 (1) on Teacher and Lecturer states that teachers are professional educators. However, it is not uncommon that some problems that hinder teacher professionalism are still found. Daryanto (2013), for example, mentions three problems on teachers' quality which are namely shortage number of teachers, a problem on the distribution of teachers, and a problem on teacher welfare. In addition, society's pessimistic view toward teachers and the teacher's low appreciation to themselves as professional educators are problems for them. In addition, in 2017 the Directorate General of Learning and Student Affairs of Indonesia states five problems in Indonesian education namely: (1) the needs of teachers particularly in rural areas or shortage, (2) unbalanced distribution of teachers, (3) teachers who are under qualification, (4) low competence teachers, and (5) the mismatched between teachers' qualification and competence.

3.0   Government's Policies

There is not any country that will let its nation development stagnant. In teacher professionalism development, the Indonesian Ministry of Research, Technology, and Higher Education in 2017 noted some of the government's efforts seen from the policies established year by year. These policies are the Act No. 20 Year 2003 on National Education System, the Act No. 14 Year 2005 on Teachers and Lecturers, the Government Regulation No. 19 Year 2005 on National Education Standards, the Government Regulation No. 74 Year 2008 on Teacher, the Regulation of Ministry of National Education No. 16 Year 2007 on Academic Qualification Standards and Teacher Competence, the Regulation of Ministry of Education and Culture No. 87 Year 2013 on Teacher Professional Education Program, and the Regulation of Ministry of Research, Technology, and Higher Education No. 55 Year 2017 on Teacher Education Standards. These efforts are not a few. The government along with the Ministry of Education and Culture as well as the Ministry of Research, Technology, and Higher Education have always tried to develop, do, and evaluate their programs to ensure the effectiveness and improvement. Seen from this condition, a discussion for teachers to emphasize and convince their important existence as professionals will be discussed on the further section.

4.0   The needs of professional teachers

In education, teachers are educators, mentors, coaches, and leaders who create an exciting learning climate and provide a sense of security, comfort as well as the conducive environment in the classroom. Their presence in the midst of students can melt the ice, stiffness, and saturation of learning. This condition certainly requires teachers' skills, and not all of them are

able to do it. Realizing that, the existence of professional teachers is necessary. Professional teachers are the determinants of quality educational processes. To be able to be professional, they must be able to find identity and actualize themselves. In fact, the very low priority of educational development over the past few decades has had a profoundly bad impact on the life of the nation and state (Sholeh, 2006). Syah (1999) argues that teachers in modern education not solely as teachers, but they must become directors of learning. That is, each teacher is expected to cleverly guide students' learning activities in order to achieve learning success (academic performance) as defined in the target of teaching and learning activities. As a consequence, the tasks and responsibilities become more complex. The extension of these tasks and responsibilities brings the consequences that are integral to the teacher professionalism competency that teachers hold. In response to these conditions, Gagne in Syah (1999) stated that each teacher functions are as (1) a designer of instruction, (2) a manager of instruction, and (3) an evaluator of students learning.

Getting back to the needs for a professional teacher, due to the existence of professional teachers in an educational institution, they are expected to provide improvements in the quality of education that will affect students' achievement. By improving the quality of education and improving learning achievement, it is expected that the national education goals will be achieved properly. Thus, the existence of professional teachers in addition to affecting the learning process is also expected to provide good quality education so as to produce students who excel. In order to realize it, there is a need to prepare as early as possible through the institution or teacher education system which is also professional and has the quality of education and advanced perspective.

5.0   Teacher professionalism

A professional person is defined as an expert who works in accordance with his or her field of expertise and is then awarded for his/her work. Professional teachers mean teachers who work according to or in accordance with their areas of expertise. Professional teachers will certainly not perform activities that will damage the functioning of their brain and heart. The ability of their brain will not tamper with ideas that will make them lose their thinking. Instead, they will maximize the brain function by constantly increasing insight. Likewise, their hearts will not tamper with negative prejudices that will make their chest feel narrow to make their hearts dull and loss of sensitivity. In fact, they will always optimize the function of their hearts so that their inner eyes become sharp and honed that they can see with their heart. Simply put, the professional teachers are the ones who are able to control the functioning of their brain and heart for something useful and responsible.

Theories about professional teachers have been found by experts, such as Rice and Bishoprick and Glickman. According to Rice and Bishoprick in Bafadal (2004), professional teachers are those who are able to manage themselves in carrying out their daily tasks. Glickman in Bafadal (2004) asserts that a person will work professionally when the person has ability and motivation. According to the Law No. 14 Year 2005 on Teacher and Lecturer, Uno (2007), and Daryanto (2013), a teacher can be said professional if he/she has the following competencies:

1.   Professional competence means that the teacher must have extensive knowledge of the subject matter to be taught and mastery methodology in the sense of having theoretical concepts able to choose the method in teaching and learning process. In the Standard of National Education Article 28 (3), professional competence is the ability to master the materials thoroughly and deeply to educate students in achieving the standards competence set in the Standard of National Education (Agung, 2012; Mulyasa, 2013). There are some sub-aspects that need to be taken into account namely professional ethical codes, development of materials mastery, development of subject competence mastery, self-development, and development of material (Agung, 2012; Wibowo & Hamrin, 2012);

2.   Personal competence means a solid personality attitude so as to be a source of intensification for the subject. In this case, it means having an exemplary personality, able to carry out leadership as proposed by Ki Hajar Dewantara, "*Ing Ngarsa Sung Tuladha, Ing Madya Mangun Karsa, Tut Wuri Handayani*";
3.   Social Competence means that the teachers must show or be able to interact socially, either with their students or with fellow teachers and principals, even with the wider community;

4.   Pedagogic competence refers to educational and teaching qualifications in which focusing on the quality of teaching and mastery of the lessons.

Based on these theories, it can be concluded that professional teachers are teachers who have the right vision and various innovative actions. Vision without action is like a dream, action without vision is like a goalless trip and a waste of time alone, while vision with action can change the world. Meanwhile, the definition of professionalism according to Sachs (2003) in Robson (2007) is that "it is paramount that whatever meaning of professionalism is circulating, its meaning is generated and owned by teachers themselves in order that it should have currency among teachers and be useful in improving their public image and social importance."

Teachers as professional persons play a role in implementing the national education system and realize the goals of national education, namely the development of the potential students to be a human being who believe and cautious to God Almighty, have noble character, healthy, knowledgeable, capable, creative, independent, and become citizens who are democratic and accountable (Law No. 14 Year 2005 Article No. 6). Professional teachers are well-educated and trained teachers and have rich experience in their field. Understanding educated and trained not only get a formal education, but also must master the various strategies and techniques of learning, master the foundations of education, and master the field of study to be taught. Suraji (2008) states that as a profession, in addition to having academic qualifications and professional competence, teachers should also be able to uphold the values of dedication, patient, tenacious, diligent, meticulous, not easily discouraged, and able to provide an example to the students. To be more specific, the characteristics of professional teachers are as follows: (1) teachers have a commitment to students and the learning process. This means that the teachers' highest commitment is to the students' interests; (2) the teachers mastered in depth the material/subjects they taught and how to teach it to the students. For teachers, these are two things that cannot be separated; (3) the teachers are responsible for monitoring the students' learning outcomes through various evaluation techniques, from the way of observation in the students to the test of learning; (4) the teachers are able to think systematically about what they do and learn from their

experience. That is, there must always be time for teachers to reflect and correct what they have done; (5) the teachers should be part of the learning community in their professional environment, for example in Indonesia, PGRI and other professional organizations. From these traits, it indicates that being a teacher is not an easy job. Therefore, professional teachers must have various skills, special abilities, love their work, and maintain the code of ethics of teachers.

Being teachers in a global era is definitely not easy. There are various requirements that must be met so that they can develop into professional teachers. Academically, for teachers to be professionals, they must have characteristics. Such characteristics according to Houle in Suyanto (2007) are namely: (1) must have a strong knowledge base; (2) must be based on individual competencies; (3) have a selection and certification system; (4) have healthy cooperation and competition between nurses; (5) have high professional awareness; (6) have principles and code of ethics; (7) have a system of professional sanctions; (8) the existence of individual militancy; and (9) have an organization.

To see if a teacher is said to be professional or not, it can be seen from two perspectives. The first is judging from the minimum level of education from educational background to the level of school where to be a teacher. The second is the teacher's mastery of teaching materials, managing the learning process, managing the students, and performing the tasks of guidance (Danim, 2002).

6.0   Teacher professionalism programs

Every concern to education is worth noting. In Indonesia, the concern to education began a long time ago indicated by the government commitment seen on the fourth line of the Preambule of Undang-undang Dasar 1945. Current concern, particularly on teacher professionalism, is given by the Ministry of Research, Technology, and Higher Education of Indonesia by providing Teacher Professional Education program. One of the bases of this program is the Act No. 17 (1) of Higher Education Law which states that profession education is a higher education program pursued after the undergraduate program. It aims to prepare the graduate students to work in the fields that require special skills.

Teacher professional education program is designed systematically and applied the quality principle starting from the selection, learning process, assessing, and competence test. It is expected that these programs are able to produce future professional teachers who are competent, competitive, and characterized. There is now two available programs namely pre-service teacher professional education program and in-service teacher professional education program. The pre-service teacher professional education program is held to prepare graduate students from educational and non-educational study programs who have talent and interest to be competent teachers. They are expected to fulfill the national standard of education so that they get the professional education certificate on the pre-school, primary, and secondary levels of education. Meanwhile, the in-service teacher professional education program is held for teachers who have been teaching for years both the civil servant and non-civil servant teachers on the pre-school, primary, and secondary levels of education. This program is given in one year.

7.0   Recommendations

Teacher professionalism is a demand in this globalization era. However, it is not merely a demand, but it is a must for every teacher (Daryanto, 2013). Both prospective teachers and teachers are required to be professional. As it has been mentioned, the teacher professionalism programs have been provided by the government. To support the government to achieve the goals, the following is some recommended strategies steps to be taken into account based on the reviewed sources discussed previously:

(a) Internally, teachers must realize their roles and responsibility to be professional. Aziz (2016) mentions that characteristics of professional teachers are: integrity (understanding their roles and work based on their ability), self-motivation (maximizing their brain and heart functions), self-growth (never stop learning to face the changing in the educational field), and capability (possessing the ability/expertise).
(b) For both prospective and current teachers, the teacher professionalism programs are recommended programs for them to join.
(c) For current teachers, it is important to make use of teacher certification as a means of moral, academic responsibility, and competency improvement. A clear career path and enough wealth are a need for teachers (Daryanto, 2013). In addition, teachers have to notice that synergistic, systematic, and sustainable efforts after certification have to be maintained (Khodijah, 2013). In regard to Professional Teachers' Post-Certification Performances, it is unfortunate the majority of professional teachers on post-certification performances are not satisfactory yet (Kartowagiran, 2011). Therefore, their professionalism is still questioned.
(d) Teachers must change the paradigm of the teaching and learn that teachers are as facilitators and supervisors. The government can help the teacher to adapt (Mockler & Groundwater-Smith, 2009).
(e) Externally, headmasters and stakeholders must support teachers to achieve their goal; some of them are by joining the teacher professionalism programs, seminars, workshops, as well as provide teachers the opportunity to pursue higher education or career development.

8.0   Conclusions

Teachers always perform professionally with the main task of educating, teaching, guiding, directing, training, assessing and evaluating students. They are responsible for taking their students to reach maturity as the nation's future leaders in all walks of life. Therefore, interested parties should not ignore the role of teachers and their profession, so that the nation and state can grow parallel to other nations in developed countries, both in the present and in the future. Such conditions may imply that teachers and their profession are the life components required by this nation and country throughout the ages. Only with the task of performing professional duties professionally can realize the existence of the nation and state that is meaningful and respected in the association between nations in this world. In other words, the role of teachers is increasingly important in the global era. Only through the guidance of professional teachers, every student can become a qualified, competitive, and productive human resource as a national asset in facing increasingly tough competition now and in the future. As a result, all teachers must realize that they are demanded to be professional teachers for the betterment of themselves, the students, education, and nation.

In an effort to be ideal teachers, teachers must be professional and work in accordance with the change, for instance, the development of science and technology.

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Acknowledgements

Copyright statement

Factors That Influence Poor Interest In Mathematics Of Low Mathematics Achievers Among Form Four Student

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Abstract

Mathematics is often said to be difficult subject by many students and Malaysia's achievements in TIMSS and PISA have also not yet reached its target. One of the reasons for this phenomenon could be due to the poor interest of students in Mathematics. Therefore, this study aims to identify the factors that influence students poor interest in mathematics especially among low mathematics achieving students. This study used a qualitative approach through interview method. The researchers used semi-structured questions where interview protocols were adapted using the Three Dimensional Model of Attitude by Zan and Martino. This study involved 13 participants who are currently in Form 4 at a school in Masai, Johor. They achieved D, E and F in Mathematics Form 3 Examination (PT3). The data obtained from the one to one interviews were analyzed based on thematic analysis to identify the themes that represented students' interests in mathematics. Five themes emerged from the analysis which are Limited Understanding Of Mathematics Subject, Teacher Factors , Students' Own Attitudes, Influence Of Peers And Parent Factors. To conclude, students need positive support from parents, peers and parents. Therefore, the researchers hope that the findings of this study can inform teachers and parents of the support the students need in order to increase their interest in mathematics.

Keywords: Low mathematics achievers, mathematics interest, poor interest in mathematics

1.0   Introduction

In today's globalization era, mathematics is a field used in one's everyday life. Daily activities have a strong connection with the use of mathematics. Mathematics also requires critical thinking to solve a problem while helping students to make decisions. It is undeniable that mathematics is among the important subjects in promoting national development. The government has created a 60 (science) : 40 (literature) ratio policy that clearly demonstrates the importance of science in which, behind science, there is a strong mathematical presence that should be mastered by Malaysian students. One example is where mathematical modeling has been used in the 1980s to identify the Human Immunodeficiency Virus (HIV), which is the virus that causes Acquired Immune Deficiency Syndrome (AIDS) (Kirschner, 1996). It clearly shows that mathematics is the key to development in the science field.

However, the 60 (science) : 40 (literature) ratio has not reached the target because of the lack of interest among students to venture into the science and mathematics field. According to sources from UNESCO, from 2007 to 2012, the percentage of students pursuing science field is

only about 29%. The number of Research Scientist Engineer (RSE) in Malaysia is only 25 people out of 10 thousand people, far behind from Japan and Korea where their RSE is 246 and 300 for every 10 thousand people respectively (Ayob, 2012).

If we compare mathematics with other subjects such as language and literature, mathematics is seen as a boring, unattractive and difficult subject (Aplin & Saunders, 1996). This problem arises from the way students look at mathematics subject. If there is no interest shown in the way mathematics is taught by instructors and teachers, then students will observe the subject with a negative perspective.

According to Zulzana, Mohamed, and Roslina (2011), interest factors have significant relationship to student achievement. Quek (2006) also stated that attitude has a positive influence on student achievement. The achievement of students in a subject depends largely on their own attitude (Yahaya, Ramli, & Boon, 1999). Therefore, students' low interest in mathematics is alarming as it is an important field of study to be mastered by Malaysian citizens in order to contribute to the development of the country.

The phenomenon observed has led the researcher to conduct a study to identify the factors which lead to poor interest in mathematics. Although, many studies have been conducted within this area of interest, it is still worthwhile to re-explore current students' conceptions for their poor interest mathematics because recently, Malaysia has undergone changes in mathematics teaching and learning. For example, the introduction of Higher Order Thinking Skills (HOTS) questions and 21st Century learning can mean that these new batch of students may provide different responses than students from previous years. These new responses can help researchers, teachers and other important parties within the forefront of education to promote interest within the mathematics field.

2.0   Research Objectives

The gaps and problems reported in the literature has led to the following objectives:
(i)   To identify the factors that influence students poor interest in mathematics among low mathematics achieving students.
(ii)   To identify the main factors that influence students' poor interest in mathematics among low mathematics achieving students.
(iii)   To identify the difference in response to the factors that cause mathematics between students who pass and failed Mathematics in PT3.

3.0   Methodology

This study used a qualitative approach through interview method. This method is one of the unique qualitative methods involving data collection through verbal in-person meetings. The researchers used semi-structured questions where interview protocols were developed using the Three Dimensional Model for Attitude (TMA) by Zan and Di Martino (2010). Zan and Di Martino have gathered 1800 autobiographical essays entitled mathematics and me: my relationship with mathematics up to now which has led to the Three Dimensional Model for Attitude. The model was used in order to develop the questions for the interview. The first

question from the TMA model, 'I like/dislike mathematics..' is changed to 'Are you interested in mathematics?' While, the second and third questions from TMA which are 'Mathematics is...' and 'I can/ cannot do mathematics...' are changed to 'What are the factors that lead you to have no interest in mathematics?' Figure 2 shows the questions developed based on TMA.

This study involved 13 participants (4 males and 9 female students) in Form 4 at a school in Masai, Johor. A total of 3 classes were selected to be the sample for this study. This sample was selected based on purposive sampling where they achieved D (pass), E and F (fail) in Mathematics Form 3 Examination (PT3). It is with the assumption that the low achievement in mathematics is an indicator that the students have poor interest in mathematics.
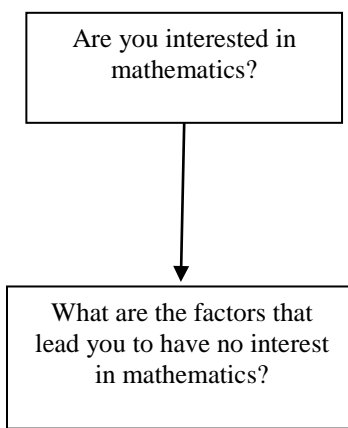

Figure 1: Adaptation of questions for the study based on TMA

4.0 Data Analysis

The data obtained from the interviews were first transcribed, read and re-read to understand them. Initial coding was then conducted on the data. Similars coded were then grouped under a subtheme and similar subthemes were grouped under one theme. The codes, subthemes and themes were validated by a fellow researcher. Any discrepancies found among the researchers were discussed and the data was returned to, to reorganise the themes found. Finally, five themes emerged from the analysis which are Limited Understanding Of Mathematics Subject, Teacher Factors , Students' Own Attitudes, Influence Of Friends And Environment And Parent Factors.

5.0 Findings

Theme 1: Limited Understanding of Mathematics Subject

Table 1 shows the themes and subthemes which emerged from the analysis and the number of students who have given responses under this theme. Seven out of 13 (53.8%) students assume that mathematics is a subject which uses formula continuously, and each question requires a different formula. If they select the wrong formula, they will fail to get marks

for the question. Long calculation is also one of the factors that make students have poor interest in mathematics.

In addition, five (38%) students also have limited understanding to apply the existing fomula according to the suitability of the question given. Even when the formula is given during examination, the students are still confused on how to apply them. Therefore, students just attempt the question without guidance which causes them to lose marks.
The curriculum which emphasizes on High Order Thinking Skills (HOTS) requires critical thinking of students adds to their lack of interest in mathematics. Two (15.4%) students mentioned that long and complicated HOTS questions is difficult to understand which means they have to leave these question unanswered.

Besides that, two (15.4%) students say that complicated explanation in textbooks is one of the factors the students have poor interest in mathematics. They explain that textbooks which are supposed to be more concise and easy to understand has changed. The complicated procedures shown in the textbook means that they are more likely to refer to reference books as a medium to understand a topic.

Theme 2: Teacher Factors

Seven (53.8%) students stated that teachers' fast-paced teaching style has led to the process of teaching and learning to become unpleasant for students and severely effects their understanding of the topic. They complained that the teacher erases the whiteboard too quickly until the students cannot copy down what is written and cannot understand the teacher's explanation. Students need time to understand the explanation given by the teacher and also time to copy down what the teacher has written on the whiteboard. However, with the fast-paced style, students need to simultaneously understand the explanation and copy the writing on the white board. This process causes confusion for the students especially, those who are weak in mathematics.

These students also complained that the examples the teacher selects in the classroom is much easier than the ones in the exam. The students suggest that examples in the classroom should be balanced to help students understand the topics they are learning. Simple questions need to be done only at the introduction phase while the difficult questions still need to be used as examples to reinforce the students' understanding. Difficult questions in the classroom along with the guidance of teachers can give students advantage when answering exam questions.

Seven (53.8%) students also complained about some teachers' professionalism and ethics. Some teachers only instruct students to do more exercises instead of re-explaining the content during revision session but, the students do not take the lesson seriously. Some teachers spend time on social media during these sessions and students become more rowdy as the teacher becomes engrossed with his or her phone. Ultimately, no learning is achieved among the students during these sessions.

Some of these students also complained that certain teachers 'play favourites' where they spend more time to explain concepts to certain students, while other students are left behind. The

students who are not included in the learning session feel left out and tend to feel demotivated to learn. Some students also say that teacher's passiveness when observing students who are off-task during the teaching and learning session means that students continue to talk among themselves and not focus on the lesson. The students are not reprimanded for their misbehaviour which leads to more laziness among students.

Theme 3: Students' Own Attitudes

Six (46%) students' mentioned that their preconceived notions about mathematics that it is a 'killer subject' prove to be true and this makes it not one of their favourite subjects. This is supported by Baharudin Omar, Kamarulzaman Kamaruddin and Nordin Mamat (2002) which states that the attitude of the students who consider mathematics as difficult can form a barrier towards understanding the subject and consequently lead to a dislike to it.

The dislike of asking questions (two students, 15.4%) is also a factor that comes from the students themselves. Students do not want to ask when they do not understand a concept and simply keep to themselves in the classroom. Over time, this behavior will escalate as they do not master more and more content and eventually they will be unable to answer the exam questions.

Besides the dislike of asking questions, eight (61.5%) students also mentioned their own laziness in learning mathematics. Mathematics cannot be removed from formula and multiplication tables but, the students still do not memorize them and to become familiar with the formulas. These are among the things that cannot be changed unless the students take initiative.

Moreover, this lazy attitude is also seen when homework is given which are not considered important to be completed. Instead, the students take it easy by saying "If I know how to solve then I will do it. If not, I just leave it". Attitude like this encourage them to have poor interest in mathematics.

Not only that, the attitudes of students who take the subject lightly means they do not master mathematics. In the data obtained, these students also said that the current examination format no longer consists of multiple choice questions. Therefore, they cannot just act in a perfunctory manner and circle one choice without reading carefully the given question. From here, it can be concluded that the attitude of the students who do not want to work hard cause poor interest in mathematics and makes it difficult for it to be learned.

Themes 4: Influence of Peers

The interview data obtained shows that nine (69.2%) of the students are afraid to be ridiculed by their peers if they start to have an interest in mathematics. This is because the change is contrary to the current attitude of peers and could lead to them being be cast aside. If an influential group of peers do not like to study, then others will not study too. If a particular student changes and starts to study, they will be ridiculed. According to Quek (2006) there is a positive relationship between peer group and student achievement in mathematics. It is also mentioned by Sharifah (1983) that peers can influence the achievement of students in the academic field. It can be said that, one of the factors for poor interest in mathematics is because

their peers also have poor interest in this subject that they imitate. This is a sign that peers have a strong influence on the individual.

Themes 5: Parent Factors

The results showed that the lack of words of support and financial support from parents are factors for poor interest in mathematics which are mentioned by five (38.5%) students. The findings show support is only given in the year they are sitting for major exams namely, UPSR, Form 3 (PT3) and SPM. Low socioeconomic status means that parents do not have extra funding for outside tuition. Parents are also less likely to give motivation to encourage students to learn. In schools, students are placed under the supervision of teachers but, some parents place all the responsibility for supervision onto teachers. Two (15.4%) students complained that their parents are not aware of their activities and academic development.

Main Factors of Students Poor Interest in Mathematics Subjects

The main theme often emphasized by all participants is theme 4 subtheme 1. Theme 4 is influence of peers and subtheme 1 is influence on friends' attitude (n = 9). There are 9 participants who say the factors that cause them not to be interested in mathematics are because they are affected by friends' behavior. The second theme and subtheme often mentioned by the participants is theme 3 subtheme 1. The third theme shows students' own attitudes which focuses on the subtheme 1 namely lazy and perfunctory (n = 8). It can be concluded that peer factors and their own attitudes are the major factors that contribute to poor interest in mathematics.

Difference in response given to the factors that causes poor interest in mathematics with the achievement of students

Based on the results, it was found that one difference in response given was theme 1 subtheme 3. Theme 1 subtheme 3 discussed about the limited understanding of mathematics subject in which students cannot answer questions in the form of High Order Thinking Skills (HOTS). It can be seen that students who have passed PT3 Mathematics can still answer the HOTS question. Meanwhile, the students who have failed cannot master the question that includes HOTS elements. It can be concluded that there is a difference in response given between students who passed and failed by referring to a difference in response given about the theme of 1 subtheme 3, cannot answer the HOTS question.

CONCLUSION

In conclusion, it can be seen that the factors for poor interest in mathematics vary from personal, teacher, peer and parent factors. Therefore, there is need to form a more supportive environment for those weak in mathematics in order to develop a higher interest in the subject. In particular, teachers and parents who are governing adults in the students' learning need to play a more positive role to support their learning and help form a higher interest towards learning mathematics. The researchers hope that the findings of this study can be a basis to overcome the problems of students' poor interest in mathematics.

LIMITATIONS AND FUTURE STUDIES

This study was conducted only from students in a single school. Therefore, the data gathered is limited and cannot be generalized to the whole population. In the future, a larger scale study can be conducted through a survey approach. The initial findings of this study can be used to develop the items for the survey instrument.

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Table 1: Themes and subthemes

No	Theme	Subthemes	Number of failed students	Number of passed Students	Total number of students
1	*Limited Understanding Of Mathematics Subject*	ST 1 : Too many formulas	3	4	7
		ST 2 : Unskilled to apply formula	3	2	5
		ST 3 : Cannot answer HOTS question	0	2	2
		ST 4 : Complex textbook description	1	1	2
2	*Teacher Factors*	ST 1 : Teaching style	4	3	7
		ST 2: Professionalism and ethical value	3	4	7
3	*Students' Own Attitudes*	ST 1 : Lazy and perfunctory	4	4	8
		ST 2 : Mind set	2	4	6
		ST 3 : Do not like to ask question in class	1	1	2
4	*Influence of Friends*	ST 1 : Influenced by friends' attitude	4	5	9
5	*Parent Factors*	ST 1 : Limited financial and motivation support from parents	2	3	5
		ST 2 : No monitoring from parent (n = 2)	1	1	2

The Evaluation of Higher Order Thinking Skills (HOTS) Assessment Using Guided Inquiry Method on Students with Special Educational Needs

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Abstract:

The competencies that have to be achieved by the students with special educational needs at the Special Needs Education Study Program, Faculty of Teacher Training and Education (FKIP) Lambung Mangkurat University Banjarmasin, Indonesia with the enactment of curriculum based on KKNI are to develop science and technology, skills, attitude, and behavior as professional education teachers. In achieving the aforementioned purpose, guided inquiry study method gives the opportunity to students with special educational needs to be actively involved in solving the problem. The aims of this research are (1) to understand about guided inquiry learning method, lecturers' needs for HOTS level assessment instrument (antecedent phase), (2) to analyze learning implementation and students' learning difficulties (transaction phase), and (3) to know the students' ability on HOTS level assessment (outcome phase). This research employed a descriptive method with Stake's evaluation model. It was conducted in the Special Needs Education Study Program of FKIP Lambung Mangkurat University Banjarmasin with the subjects of 38 students and 4 lecturers. Questionnaires are used as data collection. The results showed that (1) the lecturers have understood the guided inquiry method, but the learning implementation is still concentrated to the lecturers, (2) the students are passive in arranging assessment, and the lecturers have not fully used the case study model to reach HOTS level, and (3) the students' ability in completing assessment in high level (27%), moderate (42%), and low (31%). The conclusions drawn from this research are the lecturers have not been able to implement the real learning inquiry, required to review the questions together, and train the students to be active so that they are able to accomplish the assessment with HOTS level.

Keywords: HOTS Assessment, Students with Special Educational Nee, Guided Inquiry

1.0　　Introduction

Based on Presidential Regulation No. 8 of 2012 on the Indonesian National Qualification Framework regarding the level, equalization, and application of Indonesian human resources qualification. The determination of standard qualification is expected to encourage the establishment of an education profile country, where the Undergraduate Degree (S1) of the Special Needs Education Study Program is included in the sixth qualification level.

The quality of Special Needs Education Study Program is an important thing in the development of education in order to produce the human resources for the education of children

with special needs as the drivers of educational development. The Speciathe lecturers to innovate a good teaching strategy and motivate the students to learn more.

The students of Undergraduate Study of Special Needs Education Study Program are expected to be able to follow the innovative and productive learning and to practice the high-level thinking to enter the competition in the working world nowadays. The students are required to be able to collect the data, analyze, formulate the actual problems and then create the plan of learning for the students with special educational needs. Improvement to the high-level thinking skills become one of the priorities in learning the subject of Special Needs Education Study Program. The students are required to develop themselves in thinking, not only have low-order thinking skills (LOTS) but also until the students have the higher order thinking skills (HOTS).

The students should be accustomed to facing the problems that require high-order thinking skills, because HOTS is the ability to examine, connect, and evaluate all aspects of the situation and problems (Rofiah et al, 2013). Including the collecting, organizing, remembering, and analyzing the material. The ability to draw the right conclusion from the data and determine inconsistencies as well as the contradiction in a group of data is a part of high-level thinking skills. High-level thinking skills are not just thinking processes of memorizing and relaying the information which is known to be needed in the Special Needs Education Study Program.

The learning process of the students with Special Needs Education can use guided inquiry method because with this method the students engage in learning activities which are designed to develop an understanding of how scientific knowledge is acquired and also the critical thinking habits. Guided inquiry method can increase the scientific literature and skills of the scientific process, so it can improve high-order thinking skills of the students (Brickman et al. 2009).

The inquiry learning method generates the motivation of the students to encourage higher-order thinking skills such as the research result of Caitriona Rooney (2012). The high thinking skills of students can be improved from the result of the research conducted Madhuri et al. (2012) explain that the inquiry-based learning approach is better than conventional approach to improving high-order thinking of the students. And then, Jensen, et al. (2014) argues that many educators are failed because they only give the question about the content to know the students thinking skills. That is why the questions should be really measured high-level thinking skills. The high-level of understanding may be a key factor to encouraging the students to effectively gain an in-depth understanding of the material. The understanding not only supports the application, analysis, and evaluation but also supports the facts. This is because the presentation of the material through guided inquiry stages involved the students directly in the learning process.

The assessment of the test that is used for the evaluation learning in Special Needs Education Study Program, FKIP, Lambung Mangkurat University still uses the theory of multiple choice questions in the form of vignette, in addition, most of them are only the questions on the level of knowledge (C1), understanding (C2), and application (C3). The assessment of tests implied by the capable of Indonesian National Qualification Framework in the Special Needs Education Study Program of Lambung Mangkurat University leads to the

level of analysis (C4), synthesis (C5) and evaluation (C6) which requires the ability of HOTS thinkers. Therefore, it is necessary to develop the assessment test to the higher order thinking skills level.

One of the factors to achieve the goals of the education is the undertaken of the learning process, and the important factor for the effectiveness of learning is the evaluation of the process and also the learning outcomes. Kartowagiram (2013, p.19) suggests that evaluation is a systemic activity to identify, clarify and apply the criteria to determine the success of a program. According to Mardapi (2017, p.3), evaluation is a series of activities for improving the quality of performance or the productivity of an institution of implementing the program. The evaluation will obtain the information about what has been achieved or not, so we can do the repairements.

Referring to this case, the appropriate evaluation model in this research is the evaluation model of Countenance Stake. The countenance stake model consists of two matrices are (1) the description matrix consists of intent and observation categories and (2) The matrix of consideration consists of standard categories and workable considerations after the description matrix is completed. In each category there are three focuses: (a) antecedent (context) is a condition that exists before the instruction related to the result, (b) transaction (process) which is the process of instruction's activity, and (c) outcomes is the effect of experience, observation and work result (Hendryarto, J., 2013). The design of this research as in Figure 1 is as follows:
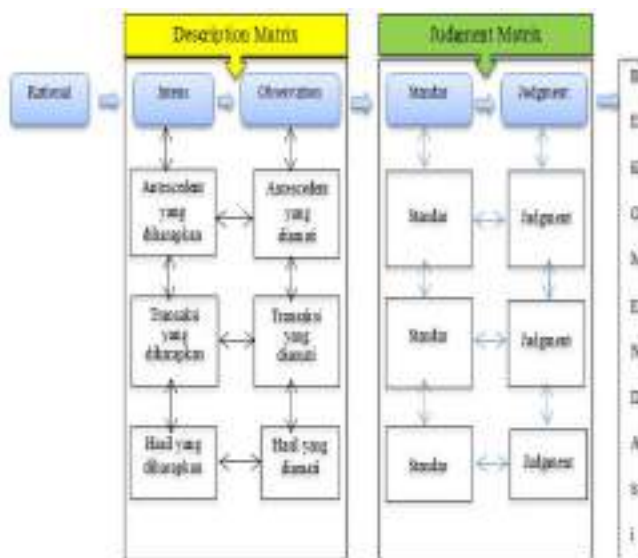

Figure 1. Countenance Stake Model

It creates an evaluation framework to assist evaluators in collecting, organizing and interpreting quantitative and qualitative data. The essence of evaluation activities is the process of generating information as an alternative decision. The relevant steps of stake evaluation are Input (Antecedent), Process (Transaction), and Products (Outcomes) (Hopson, M. et al., 2001). The description of the Outcome Stake model is the impact of the implementation of the learning program.

Based on the description above, the research goals are to know: (1) the understanding of lecturers on guided inquiry learning method, and lecturer needs of assessment instruments HOTS

level (antecedents phase), (2) analyzing the implementation of the learning process and also the students' learning difficulties (transaction phase), and (3) the ability of students to assess HOTS level (Outcome phase).

2.0 Research Method

This research is a descriptive evaluation research, with countenance stake model, a purposive sampling technique is considering the purpose to get the data about the learning process. The research subjects are 4 lecturers and 38 students of Special Needs Education Study Program of FKIP ULM Banjarmasin on the third semester of the academic year 2017/2018.

The standard matrix or the criteria, in this case, relates to the intense of inclusive education learning program and the results of observation. The judgment matrix is an academic quality guide. The evaluation flow of the Countenance Staketer model consists of four steps namely the first step, collecting data, logical analysis, and empirical analyst. Data analysis technique in this research is descriptive analysis percentage because there is no hypothesis testing. The percentage descriptive (quantitative) formula is as follows:

$$DP = \frac{n}{N} \times 100\%$$

Information:
DP = Precentage Descriptive
n = Empiric Score
N = Ideal Score

In this research, the data analysis is used to determine the category or type of descriptive percentage obtained on each indicator. The result of descriptive calculation percentage, then, can be interpreted in sentence form. The classification of category levels in percentages is shown in Table 1.

Table 1: Classification of level categories in percentage form

No	Range	Information
1	76 % - 100 %	Good
2	51% - 75%	Enough
3	26% - 50%	Less
4	1% -25 %	Bad

3.0 Results and Discussion

The results of the data collection through observation using the questionnaires in the field study activities obtained the following results:

1. The understanding of the lecturers about guided inquiry learning method.

Table 2. Understanding the Guided Inquiry Learning Method.

| No | Statements | Answer Score | | Score |
		Yes	No	Total
1	Inquiry Model Setting	4	0	100
2	Implementation According Directive	1	3	33
3	Study Cases Development	3	1	75
4	Improving Student's Potential	1	3	33
5	The Active Students	1	3	33

"The unappropriate of the meetings number with the skills to be taught, so the inquiry model can only be done at least two meetings at the time of the material review" (1st and 3rd respondents).

But a lecturer can do as maximal as possible to learning with guided inquiry model with this explanation:

"The delivered skills are not entirely taught in skills but rather on analytical learning by providing the variation of the study cases with different settings, training the students to collect the focus data, analyze, diagnose, planning, and implementation according to client's safety priorities".

2. The lecturer's needs for HOTS level assessment instruments (antecedents phase).
The assessment of Inclusive Education subjects was conducted three times. First, a middle test by giving the task of preparing a fictive study case and seminar. Second, the final test of the semester by doing the written questions, multiple choice in vignette or case study but not all questions at the level of analysis (C4), synthesis (C5) and evaluation (C6), this is supported by the interview result:

"It is very difficult because the study case at the HOTS level requires creative thinking, critical, and reflective applicative skills because as a lecturer the time for clinical practice and encounter pathological case are very rare".

This is in accordance with the opinion of Hammen cit Yudha (2004), Ennis (1996), and Muin (2011) that the development of HOTS-level instrument required the ability of the lecturers in creative thinking that produces something new, critical thinking capable of making logical decisions, and believed in truth and reflective thinking in choosing and deciding of a solution about the problem.

3. Analyze the implementation of the learning process and student learning difficulties (transaction phase).

The data observation's result of the implementation learning in the classroom have no problem actually, the students' difficulties in accepting the learning is admitted by the students that they lack independent learning in the library. The students feel happy with

the learning process but the number of assessment data of children with special needs that must be understood in the laboratory for the assessment of children with special needs being an obstacle to conducting upbringing or learning focus, so it takes the ability of lecturers to doing the learning process with guided inquiry model. In UIUC's inquiry page website (copyright 1998-2004 inquiry page version 1.35) stated that the inquiry process in the learning process is done through 5 stages: asking phase, investigate, generate, discuss, and reflection phase. Every step in this process naturally encourages new questions, investigations, and opportunities for teachable moments

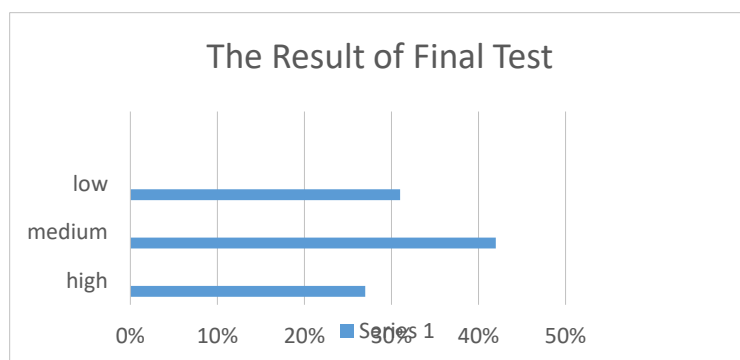4. The students' ability to assess HOTS level (Outcome)

Figure 2. The Result of Final Test

Based on the result of the final semester examination, the subjects of the students with special educational needs assessment resulted of the students' ability with high level (27%), moderate level (42%), and low level (31%). With guided inquiry learning model is very necessary for students because it is difficult to learn to analyze and solve problems in the subject of an assessment of students with special educational needs; therefore, lecturers are expected to provide learning by applying guided inquiry model and training the active students to be able to complete assessment with HOTS level. Based on the students' questionnaire data analysis, they do need the assessment instrument which can train them in learning of the assessment of students with special educational needs in the laboratory especially in the analysis of assessment results.

4.0   Conclusions and Recommendations

Based on the goals of this research and the results of the analysis above, it can be concluded that:
1. From four lecturers of the assessment of students with the special educational needs, the subjects have understood the method of guided inquiry, but the implementation of learning is still centered by lecturers and the students still tend to be passive.
2. Not all of the lecturers are able to arrange assessment using case study model in order to achieve HOTS level.
3. The ability of students to assess the level of learning in the assessment of children with special needs with inquiry model resulted in high level (27%), moderate level (42%), and low level (31%).

Recommendations:

1. It is suggested that the institutions pay attention to the ability and competence of the lecturers to be adjusted and provided with additional skills with the opportunity to update the knowledge.
2. The preparation of questions can be done in the form of workshops by the team with still focus to vision and mission of the institution and also the Semester Learning plan.
3. The guidelines of practicum and valid assessment instrument to avoid ambiguity in the understanding vignette and solving the problems need to be prepared.

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