



E-PROSIDING

قُرَيْشِيَّةٌ غَنَاهَا رِيَّ كَوْرُو

TEACHERS' DAY CONFERENCE

Membentuk Ekosistem Pendidikan Yang Berdaya Tahan
Building a Resilient Education Ecosystem

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Department of Educators Management

Ministry of Education

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Synopsis for the E-Proceedings: 2024 National Teachers' Day Conference

In celebration of National Teachers' Day 2024, the Ministry of Education, in partnership with the Department of Educators Management, Sultan Hassanah Bolkih Institute of Education (SHBIE), Universiti Brunei Darussalam, and Seri Begawan Religious Teachers University College (KUPU SB), proudly presents the National Teachers' Day Conference. This year's conference, themed "Building a Resilient Education Ecosystem" (*Membentuk Ekosistem Pendidikan yang Berdaya Tahan*), addresses the critical need for education systems that not only withstand the complexities of our era but evolve to meet future demands.

Amidst swift technological advances and global shifts, fostering a resilient and adaptive education ecosystem is essential for cultivating future-ready learners. The conference explores strategies for nurturing both teachers and students, integrating innovative pedagogical practices, and building robust educational frameworks that can adapt to societal changes. Aligned with the 2024 National Teachers' Day theme, "*Guru Berkualiti Pemacu Transformasi Pendidikan*", this gathering seeks to empower educators as key agents of transformation.

The conference's aims center on equipping educators with effective tools, fostering collaboration, and encouraging inclusive practices that promote diversity and equity. Through discussions on technology integration, sustainable educational practices, and inclusive methodologies, participants will gain insights and share knowledge to shape future education pathways.

This E-proceedings captures the essence of these discussions, presenting findings, research insights, and innovative strategies aligned with the theme and objectives of the conference. We invite you to explore the 29 sub-themes covered, each contributing to the overarching goal of empowering learners and creating resilient educational spaces for the 21st century and beyond.

Penggunaan M-Pembelajaran Dalam Modul Pendidikan Islam Di Politeknik Brunei

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ABSTRAK

Dunia pendidikan hari ini sangat berbeza dengan era sebelum Revolusi Industri 4.0. Teknologi kini bukan lagi sekadar alat pemangkin dalam pengajaran dan pembelajaran, tetapi berperanan penting sebagai medium yang membantu dan memudahkan pelajar memahami isi kandungan yang disampaikan oleh guru. Politeknik Brunei, sebuah institusi yang menggunakan Politeknik Brunei Learning Management System (PBLMS) sebagai platform utama dalam penyediaan bahan pengajaran dan pembelajaran. Oleh itu, penggunaan M-Pembelajaran memainkan peranan penting bagi memanfaatkan PBLMS sebagai platform pengajaran yang menyediakan akses fleksibel dan interaktif kepada pelajar, di samping mendukung pelaksanaan pendekatan pengajaran *Hybrid* Politeknik Brunei (PBhybrid Learning) dalam pengajaran dan pembelajaran secara menyeluruh. Oleh itu, kajian ini bertujuan untuk menilai keberkesanan penggunaan M-Pembelajaran sebagai medium komunikasi interaktif antara guru dan pelajar, khususnya dalam penyampaian modul Pendidikan Islam di Politeknik Brunei. Maka, melalui kaedah pemerhatian yang dijalankan terhadap sampel pelajar ketika sesi pengajaran dan pembelajaran, kajian mendapati suasana pembelajaran menjadi lebih komunikatif, manakala motivasi serta minat pelajar terhadap modul Pendidikan Islam meningkat apabila komunikasi antara guru dan pelajar berlaku dengan lebih efektif. Walau bagaimanapun, kajian ini turut mendapati adanya keterbatasan dalam penggunaan M-Pembelajaran dari segi infrastruktur teknologi dan akses peranti mudah alih, yang boleh menghalang pelajar tertentu daripada terlibat secara penuh dalam proses pembelajaran. Sebagai contoh, ketiadaan Wi-Fi boleh menghalang pelajar untuk mengakses bahan pembelajaran digital, sekali gus menjejaskan keberkesanan M-Pembelajaran. Dari segi implikasi sosial, ketidaksamaan jenis teknologi antara pelajar mengakibatkan jurang perbezaan dalam kualiti pembelajaran; pelajar dengan peranti canggih mendapat akses penuh kepada ciri interaktif, manakala pelajar dengan peranti terhad menghadapi kekangan, yang membawa kepada ketidaksamarataan dalam akses dan pencapaian pendidikan. Implikasi kajian secara eksplisit menunjukkan bahawa penerapan M-Pembelajaran bukan sahaja memupuk suasana pembelajaran yang lebih dinamik dan interaktif, tetapi juga memperkukuhkan penglibatan dan pemahaman pelajar terhadap Pendidikan Islam, menjadikannya relevan dengan tuntutan pendidikan abad ke-21. Penemuan ini selari dengan titah Kebawah Duli Yang Maha Mulia Paduka Seri Baginda Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah, Sultan dan Yang Di-Pertuan Negara Brunei Darussalam, sempena Majlis Sambutan Israk dan Mikraj Peringkat Negara Tahun 1438 Hijrah / 2017 Masihi, di mana baginda menegaskan bahawa,

“Pendidikan agama janganlah hanya indah di atas kertas, tetapi hendaklah juga bagus pada amalnya, seperti cara belajar, jadwal belajar, masa persekolahan, mata pelajaran, guru dan lain-lain. Ini semua sangat penting untuk menjamin keberkesanan pembelajaran.” Kesimpulannya, dengan adanya corak pembelajaran yang fleksibel dan kebebasan pembelajaran sendiri melalui peranti mudah alih, M-Pembelajaran berpotensi untuk diterapkan secara meluas dalam bidang pendidikan lain, khususnya dalam konteks pembelajaran sepanjang hayat.

Kata kunci: M-Pembelajaran, PBLMS, PBHYBRID

ABSTRACT

The world of education today is very different from the era before Industrial Revolution 4.0. Technology is no longer just a catalytic tool in teaching and learning but plays an important role as a medium that helps and makes it easier for students to understand the content presented by the teacher. Politeknik Brunei, an institution that uses Politeknik Brunei Learning Management System (PBLMS) as the main platform in the preparation of teaching and learning materials. Therefore, the use of M-Learning plays an important role in utilizing PBLMS as a teaching platform that provides flexible and interactive access to students, while also supporting the implementation of Brunei Polytechnic's Hybrid teaching approach (PBhybrid Learning) in teaching and learning as a whole. Therefore, this study aims to evaluate the effectiveness of using M-Learning (Mobile Learning) as an interactive communication medium between teachers and students, specifically in delivering the Islamic Education module at Brunei Polytechnic. Therefore, this study aims to evaluate the effectiveness of using M-Learning as a medium of interactive communication between teachers and students, particularly in the delivery of the Islamic Education module at Brunei Polytechnic. Through observational methods involving a sample of students during teaching and learning sessions, this study found that the learning environment became more communicative, and students' motivation and interest in the Islamic Education module increased when communication between teachers and students was more effective. However, this study also found limitations in the use of M-Learning in terms of technological infrastructure and mobile device access, which can prevent certain students from fully engaging in the learning process. For example, low connection quality of Wi-Fi can prevent students from accessing digital learning materials, thus affecting the effectiveness of M-Learning. In terms of social implications, the inequality of the type of technology between students results in disparities in the quality of learning; students with advanced devices gain full access to interactive features, while students with limited devices face constraints, leading to inequities in access and educational achievement. The implications of the study explicitly show that the application of M-Learning not only fosters a more dynamic and interactive learning environment, but also strengthens student involvement and understanding of Islamic Education, making it relevant to the demands of 21st century education. This finding aligns with the statement of His Majesty Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah, Sultan and Yang Di-Pertuan of Brunei Darussalam, at the National Israk and Mikraj Celebration in 1438 Hijrah / 2017 AD, where he emphasized that "Religious education should not only be beautiful on paper but also excellent in practice, including study methods, study schedules, school hours, subjects, teachers, and more. All these are essential to ensure the effectiveness of learning." In conclusion, with the existence of flexible learning modes and the freedom of self-directed learning via mobile devices, M-Learning has the potential to be widely implemented in other fields of education, especially in the context of lifelong learning.

Keywords: M-Learning, PBLMS, PBHYBRID

PENGENALAN

Penggunaan teknologi dalam sistem pendidikan semakin penting kerana ia mampu mewujudkan sumber pengajaran dan pembelajaran yang interaktif antara guru dan pelajar. Perkembangan pesat teknologi maklumat dan komunikasi memberi kesan kepada hampir semua aspek kehidupan, termasuk pendidikan. Teknologi juga telah mengubah cara manusia belajar (Rabiman et al., 2020). Selain itu, teknologi berfungsi sebagai jambatan yang menghubungkan antara pengalaman pelajar dan pengetahuan sedia ada dengan ilmu baru yang diajar dan dipelajari, selaras dengan teori konstruktivisme (Khoiro et al., 2019).

Perkembangan pesat teknologi maklumat dan komunikasi telah merubah secara drastik **landskap pendidikan di seluruh dunia**. Pendekatan pengajaran dan pembelajaran yang dahulunya berfokus kepada **kaedah tradisional dan secara bersemuka** kini telah berkembang dengan pengenalan **pembelajaran dalam talian** dan penggunaan **peranti mudah alih**. Di tengah-tengah transformasi ini, **M-Pembelajaran (Mobile Learning)** muncul sebagai salah satu inovasi yang menawarkan **fleksibiliti** dan **aksesibiliti** yang lebih tinggi kepada pelajar. Seiring dengan penyebaran teknologi maklumat yang semakin meluas, **pembelajaran berasaskan peranti mudah alih** telah menjadi medium penting dalam pengajaran hari ini, yang mampu memberi **impak positif** terhadap prestasi dan penglibatan pelajar (Criollo-C et al., 2021). Sehubungan dengan itu, Modul Pendidikan Islam di Politeknik Brunei juga tidak ketinggalan untuk memanfaatkan M-Pembelajaran ini dalam usaha untuk meningkatkan keberkesanan pengajaran dan pembelajaran **modul Pendidikan Islam**.

M-Pembelajaran merujuk kepada kaedah pembelajaran yang menggunakan alat mudah alih dalam proses pengajaran dan pembelajaran (Liu, Han & Li, 2010). Menurut García-Martínez et al. (2019), istilah 'pembelajaran' itu sendiri membawa maksud mudah alih kerana ia boleh berlaku di mana-mana sahaja dan pada bila-bila masa. Oleh itu, gabungan perkataan 'mobile pembelajaran' menunjukkan proses pembelajaran yang berlangsung secara berterusan tanpa terikat kepada masa dan lokasi tertentu.

Modul Pendidikan Islam merupakan salah satu modul teras yang wajib diikuti oleh semua pelajar di Politeknik Brunei. Objektif modul ini adalah untuk meningkatkan kefahaman agama yang berkualiti agar pelajar dapat mengaplikasikan bahan pengajaran dalam kehidupan seharian. Sebagaimana Titah Kebawah Duli Yang Maha Mulia Paduka Seri Baginda Sultan Haji Hassanah Bolkiah Mu'izzaddin Waddaulah, Sultan dan Yang Di-Pertuan Negara Brunei Darussalam, sempena Majlis Sambutan Israk dan Mikraj Peringkat Negara bagi Tahun 1438 Hijrah / 2017 Masihi:

"Pendidikan agama janganlah hanya indah di atas kertas sahaja, tetapi hendaklah juga bagus pada amalnya, seperti cara belajar, jadual belajar, masa persekolahan, mata pelajaran, guru dan lain-lain. Ini semua sangat penting untuk menjamin keberkesanan pembelajaran," tegas Baginda.

Proses pengajaran dan pembelajaran hari ini menunjukkan bahawa pembelajaran bukan lagi terhad kepada **interaksi bersemuka** antara guru dan pelajar di bilik darjah. Sebaliknya, kaedah pembelajaran moden seperti **pembelajaran jarak jauh**, **e-pembelajaran**, dan **M-Pembelajaran** telah membuka jalan untuk pendekatan yang lebih **fleksibel**, **interaktif**, dan **mudah alih**. Salah satu model yang menggambarkan perkembangan ini adalah **Model Pembelajaran Brown (2005)**, yang menekankan tiga aspek utama dalam M-Pembelajaran: **mobiliti teknologi**, **mobiliti pelajar**, dan **mobiliti pembelajaran**. Model ini menunjukkan bagaimana pembelajaran telah berkembang dari kaedah tradisional ke arah pembelajaran yang lebih **dinamik dan fleksibel** dengan menggunakan teknologi mudah alih.

Di **Politeknik Brunei**, **pembelajaran fleksibel** dan **e-pembelajaran** telah diintegrasikan melalui pendekatan **Hybrid Learning (PBHYBRID)** dengan menggunakan **platform Politeknik Brunei Learning Management System (PBLMS)**. Pendekatan pembelajaran PBhybrid menggabungkan **pembelajaran bersemuka** dengan **pembelajaran dalam talian**, memberikan kebebasan kepada pelajar untuk memilih bagaimana mereka ingin belajar. Fleksibiliti ini mencerminkan aspek **pembelajaran fleksibel** dalam model pengajaran, di mana pelajar boleh mengakses bahan pembelajaran di dalam kelas atau melalui platform dalam talian bergantung kepada keperluan mereka. Selain itu, menerusi **PBLMS** pelajar dapat mengakses bahan pembelajaran seperti nota, slaid, video, dan tugasan pada bila-bila masa dan di mana sahaja.

Penggunaan M-Pembelajaran telah dapat memberi nilai tambah kepada pendekatan pembelajaran PBhybrid dengan memberikan kemudahan kepada pelajar untuk berinteraksi bersama pensyarah melalui **aplikasi interaktif yang ada di dalam peranti mudah alih** seperti **Whats App**, **Telegram**, dan **You Tube**. Penggunaan aplikasi interaktif ini memberi ruang kepada pelajar untuk berkomunikasi secara langsung dengan pensyarah, menyelesaikan tugas secara sendiri dan mengakses bahan pembelajaran pada bila-bila masa. Hal ini bertepatan dengan konsep **mobiliti teknologi** dalam **Model Pembelajaran Brown (2005)**, di mana peranti mudah alih memberi pelajar kebebasan untuk belajar secara lebih dinamik, tidak kira di mana mereka berada.

Kesimpulannya M-Pembelajaran atau mobile learning adalah satu pendekatan pembelajaran yang tidak terikat dengan ruang, masa dan tempat. Ia memberikan fleksibiliti kepada pelajar dan guru untuk berinteraksi dengan kandungan pendidikan secara dinamik dan mudah alih, menggunakan peranti mudah alih seperti telefon pintar, tablet dan komputer riba. Dalam pendidikan moden, M-Pembelajaran sangat relevan kerana ia memanfaatkan teknologi yang semakin maju untuk menyokong pengalaman pembelajaran yang lebih interaktif dan menarik.

Definisi M-Pembelajaran

M-Pembelajaran didefinisikan sebagai satu bentuk pembelajaran yang membolehkan pelajar mengakses bahan pembelajaran pada bila-bila masa dan di mana sahaja. Ini merangkumi pembelajaran yang berbantuan teknologi, yang menggunakan peranti mudah alih untuk melaksanakan aktiviti pembelajaran dan komunikasi interaktif antara pelajar dan guru. Dalam konteks ini, ia bukan sekadar evolusi daripada e-pembelajaran tetapi merupakan inovasi yang memberikan kebebasan kepada pelajar untuk belajar dalam persekitaran yang lebih fleksibel (Biloš, Turkalj, & Kelić, 2017).

Atribut M-Pembelajaran:

M-Pembelajaran mempunyai beberapa atribut penting yang menjadikannya sesuai dan berkesan dalam konteks pembelajaran moden. Atribut-atribut ini termasuk:

1. **Kebolehcapaian (Aksesibiliti):** M-Pembelajaran membolehkan pelajar mengakses bahan pembelajaran di mana sahaja dan pada bila-bila masa, selagi mereka mempunyai sambungan internet. Ini membolehkan pembelajaran berlaku di luar bilik darjah dan lebih fleksibel
2. **Interaktiviti:** Elemen interaktif seperti kuiz, forum, dan aplikasi dalam M-Pembelajaran mempromosikan penglibatan aktif pelajar. Pelajar tidak lagi menjadi penerima pasif, tetapi peserta aktif dalam proses pembelajaran.
3. **Kepelbagaian:** M-Pembelajaran menyokong pelbagai format bahan pembelajaran seperti video, teks, audio, dan grafik, yang dapat memenuhi gaya pembelajaran yang berbeza. Ini menjadikan pengalaman pembelajaran lebih menarik dan bersesuaian dengan tahap kebolehan pelajar.
4. **Personalisasi:** Pelajar dapat menyesuaikan pengalaman pembelajaran mereka berdasarkan keperluan dan pilihan individu, termasuk kelajuan dan cara mereka belajar. Ini memberi kebebasan kepada pelajar untuk mengawal pembelajaran mereka sendiri.
5. **Keterhubungan:** Teknologi dan aplikasi memudahkan pelajar untuk berhubung dengan rakan sebaya dan guru. Secara tidak langsung ia telah mewujudkan kolaborasi dan menjadi sokongan sepanjang proses pembelajaran.
6. **Pembelajaran Berterusan:** M-Pembelajaran menyokong konsep pembelajaran sepanjang hayat, membolehkan individu terus belajar walaupun di luar konteks formal atau di luar waktu kelas.
7. **Mudah alih dan Fleksibiliti:** Dengan penggunaan peranti mudah alih, pelajar boleh belajar dan menyelesaikan tugas dari mana-mana lokasi, menjadikan proses pembelajaran lebih fleksibel dan tidak terikat kepada tempat atau waktu tertentu.
8. **Sokongan Multimedia:** Elemen multimedia seperti video dan grafik dapat meningkatkan pemahaman dan ingatan pelajar terhadap bahan yang dipelajari, menjadikan proses pembelajaran lebih interaktif dan menarik.

Kelebihan M-Pembelajaran dalam Pendidikan Moden

Penggunaan M-Pembelajaran membawa banyak manfaat kepada proses pengajaran dan pembelajaran, termasuk meningkatkan keberkesanan pembelajaran, memperluas akses kepada pendidikan, serta menyediakan pengalaman pembelajaran yang lebih interaktif dan bermakna. Teknologi ini diharapkan dapat meningkatkan kualiti pendidikan dengan memudahkan pelajar memahami kandungan pembelajaran secara lebih efektif. Secara umumnya, kelebihan penggunaan M-Pembelajaran dalam pendidikan moden dapat disimpulkan seperti berikut:

1. **Akses Fleksibel:** Pelajar boleh mengakses bahan pembelajaran di mana sahaja dan pada bila-bila masa, membolehkan pembelajaran sendiri yang lebih berkesan.
2. **Komunikasi Interaktif:** M-Pembelajaran menyediakan pelbagai platform dan aplikasi interaktif seperti Whats App, Kahoot!, Quizlet, dan Slido yang menggalakkan penglibatan aktif pelajar dalam pembelajaran.
3. **Peningkatan Motivasi dan Minat:** Melalui pembelajaran berbasis permainan seperti Kahoot! dan Quizizz, pelajar didorong untuk lebih aktif dalam pembelajaran, dan ini membantu meningkatkan motivasi mereka.
4. **Pembelajaran Visual dan Interaktif:** Aplikasi seperti YouTube membolehkan pelajar mengakses bahan visual seperti video animasi atau simulasi, memberikan pengalaman pembelajaran yang lebih menarik dan interaktif, contohnya, tatacara ibadat seperti solat dan wudhu.

Secara keseluruhannya, M-Pembelajaran adalah satu pendekatan yang penting dalam pendidikan moden, kerana ia menyokong pembelajaran sepanjang hayat, menyesuaikan diri dengan teknologi semasa, dan memberi kebebasan kepada pelajar untuk belajar mengikut keselesaan mereka.

Aplikasi Interaktif dalam M-Pembelajaran

Dalam konteks **modul Pendidikan Islam, M-Pembelajaran** membolehkan pelajar belajar secara **kendiri** menggunakan **peranti mudah alih** seperti telefon pintar dan tablet. Terdapat pelbagai aplikasi interaktif yang boleh diguna pakai untuk meningkatkan keberkesanan pengajaran dan pembelajaran, terutamanya dari segi **penilaian, perbincangan, pembelajaran berasaskan permainan, pembelajaran visual, dan penciptaan kandungan**. Berikut adalah beberapa aplikasi utama yang digunakan bagi tujuan:

1. Penilaian:

Aplikasi seperti **Slido** digunakan untuk menilai **kefahaman pelajar** terhadap bahan pengajaran melalui sesi **soal jawab interaktif**. Aplikasi ini membolehkan soal jawab secara **masa nyata** dan menggunakan **polling**, yang menggalakkan pelajar untuk terlibat secara lebih aktif. Kelebihan utama Slido ialah ia membolehkan pelajar bertanya soalan secara **anonim**, yang memudahkan mereka yang mungkin malu untuk bertanya secara terbuka, sekaligus meningkatkan **penyertaan** dalam kelas.

2. Kemudahan Capaian Bahan Pengajaran:

Di samping penggunaan **PBLMS**, aplikasi interaktif **juga** digunakan untuk perbincangan dan perkongsian bahan tambahan di luar waktu pengajaran ke arah memudahkan pelajar mencapai bahan pengajaran:

- **WhatsApp**: Aplikasi ini memudahkan **komunikasi dua hala** antara guru dan pelajar. Pelajar boleh bertanya soalan secara langsung dan menerima **maklum balas segera** daripada guru, yang meningkatkan **respon cepat** dalam pembelajaran.
- **Telegram**: Menyediakan ruang untuk **perbincangan kumpulan**, membantu pelajar untuk berkongsi maklumat dan berinteraksi secara mendalam tentang **topik yang dipelajari**, sekaligus menyokong pembelajaran yang lebih kolaboratif.

3. Pembelajaran Berasaskan Permainan:

Aplikasi seperti **Kahoot!** dan **Quizizz** digunakan untuk **menyemak kefahaman pelajar** melalui **permainan kuiz** yang menghiburkan dan memberikan **maklum balas segera**:

- **Kahoot!**: Kuiz interaktif yang disediakan melalui Kahoot menjadikan pembelajaran lebih **seronok** dan **menarik**. Maklum balas diberikan serta-merta, yang membantu pelajar memperbaiki kesilapan mereka secara langsung.

- **Quizizz:** Seperti Kahoot, Quizizz memberi peluang kepada pelajar untuk **menjawab soalan kuiz** dalam bentuk permainan. Pelajar lebih terlibat dalam sesi pembelajaran dan menikmati pengalaman pembelajaran melalui pertandingan kuiz dalam talian.

4. Pembelajaran Visual:

Platform seperti **YouTube** dan **TikTok** membolehkan pelajar mengakses bahan visual yang memperjelaskan konsep-konsep penting dalam **Pendidikan Islam** melalui **video** dan **tutorial interaktif**:

- **YouTube:** Sebagai platform untuk video pendidikan, YouTube menyediakan akses kepada **video tutorial** atau ceramah berkaitan **modul Pendidikan Islam**. Pelajar boleh menonton video pada bila-bila masa, menjadikannya alat yang sangat berguna untuk **pembelajaran sendiri**. Kandungan video seperti **animasi** dan **simulasi** membantu pelajar memahami konsep yang sukar dengan lebih mudah.
- **TikTok:** **TikTok** semakin popular sebagai alat untuk video pendek pendidikan. Melalui TikTok, pelajar dan guru dapat **mencipta** atau **menonton** video yang menerangkan konsep tertentu secara **kreatif** dan dalam masa yang singkat. Ini menjadikan pembelajaran lebih **interaktif** dan **menyeronokkan**, terutamanya bagi generasi muda yang cenderung kepada **kandungan visual yang ringkas dan dinamik**.

5. Penciptaan Kandungan Visual:

Selain pembelajaran melalui visual, pelajar juga dapat memanfaatkan aplikasi seperti **Canva** untuk **mencipta kandungan visual** berkaitan dengan modul Pendidikan Islam. **Canva** membolehkan pelajar **mencipta poster, infografik, dan slaid** yang berkaitan dengan topik pembelajaran, yang bukan sahaja membantu mereka memahami konsep dengan lebih baik, tetapi juga menggalakkan kreativiti dalam pembelajaran.

- **Canva:** Aplikasi ini memudahkan pelajar untuk **mencipta bahan pembelajaran visual** secara profesional dengan menggunakan pelbagai templet yang tersedia. Dalam konteks Pendidikan Islam, pelajar boleh menggunakan Canva untuk **mencipta poster interaktif, infografik, atau bahan pembelajaran visual lain** yang boleh membantu menjelaskan konsep-konsep penting seperti sejarah Islam, akhlak, atau nilai-nilai Islam. Ini bukan sahaja membantu pelajar memperdalam pemahaman mereka, tetapi juga menjadikan proses pembelajaran lebih **seronok dan kreatif**.

Dengan penggunaan aplikasi interaktif seperti **Canva, WhatsApp, Telegram, Kahoot, YouTube, dan TikTok** dan Slido dalam modul Pendidikan Islam bukan sahaja meningkatkan **penglibatan pelajar**, tetapi

juga memupuk **pembelajaran sendiri** dan memperkaya pengalaman pembelajaran. Aplikasi-aplikasi ini memberikan peluang kepada pelajar untuk berinteraksi dengan bahan pengajaran secara lebih dinamik dan kreatif, sekaligus menjadikan pembelajaran lebih menarik dan berkesan.

PENYATAAN MASALAH

Pendidikan Islam sering dianggap sebagai salah satu mata pelajaran yang bersifat pasif, kerana cara penyampaian yang lazimnya menekankan teori dan hafalan, seperti membaca teks dalam Al-Qur'an, memahami hadis, serta mempelajari sejarah dan nilai-nilai Islam. Pendekatan ini mungkin berkesan dalam menyampaikan kandungan ilmu agama, tetapi ia kurang memberi peluang kepada pelajar untuk berinteraksi secara aktif dan mengaitkan pembelajaran dengan situasi kehidupan sebenar.

Namun, teknologi hari ini telah mampu merubah sifat positif pengajaran Pendidikan Islam menjadi lebih aktif, interaktif, dan relevan dengan kehidupan pelajar. Ini dapat dicapai dengan penggunaan teknologi moden, seperti M-Pembelajaran, yang bukan sahaja memberi peluang kepada pelajar untuk berinteraksi dengan kandungan pelajaran tetapi juga meningkatkan motivasi dan penglibatan mereka. Dengan penggunaan peranti mudah alih dan aplikasi interaktif, Pendidikan Islam dapat disampaikan dalam cara yang lebih menarik, menjadikannya lebih dekat dengan kehidupan pelajar serta mendorong pengamalan ajaran Islam dalam kehidupan seharian.

Sebagaimana yang disarankan oleh Titah Ke Bawah Duli Yang Maha Mulia Paduka Seri Baginda Sultan Haji Hassanal Bolkiah Mu'izzaddin Waddaulah, Sultan Dan Yang Dipertuan Negara Brunei Darussalam, sempena Majlis Sambutan Israk dan Mikraj Peringkat Negara bagi Tahun 1438 Hijrah / 2017 Masihi:

"Pendidikan ugama, janganlah ia indah di atas kertas sahaja, tetapi hendaklah juga bagus pada amali nya, seperti cara belajar, jadual belajar, masa persekolahan, mata pelajaran, guru dan lain-lain. Ini semua sangat penting untuk menjamin keberkesanan pembelajaran."

Ini menunjukkan bahawa keberkesanan Pendidikan Islam bukan sahaja terletak pada kefahaman teori, tetapi juga pengaplikasiannya dalam kehidupan seharian pelajar. Sehubungan itu, pendekatan yang lebih moden dan praktikal perlu diteroka untuk menyokong amali dan pemahaman yang mendalam terhadap ajaran Islam.

Di Politeknik Brunei, pengajaran dan pembelajaran telah diperkuatkan melalui pendekatan Hybrid Learning, yang menggabungkan pembelajaran tatap muka dengan pembelajaran dalam talian. Dalam konteks ini, M-Pembelajaran digunakan sebagai medium utama untuk menyampaikan bahan pengajaran Pendidikan Islam secara lebih fleksibel dan interaktif. Penggunaan aplikasi seperti Kahoot, WhatsApp, YouTube, dan

Telegram telah membantu meningkatkan interaksi dua hala antara pelajar dan guru, di samping memperkaya pengalaman pembelajaran.

Namun, masih terdapat jurang dalam memastikan pendekatan ini berkesan dalam mencapai matlamat pembelajaran. Adakah M-Pembelajaran benar-benar dapat meningkatkan penglibatan, motivasi, dan pemahaman pelajar dalam konteks modul Pendidikan Islam? Bagaimana aplikasi interaktif dalam M-Pembelajaran mempengaruhi proses pembelajaran dan pengajaran? Soalan-soalan ini menjadi asas kepada kajian ini, yang bertujuan untuk menilai keberkesanan penggunaan M-Pembelajaran dalam proses pengajaran modul Pendidikan Islam di Politeknik Brunei ke arah meningkatkan penglibatan pelajar, pemahaman terhadap bahan pengajaran, dan pengimplimentasian ajaran Islam dalam kehidupan seharian.

OBJEKTIF KAJIAN

Kajian ini dijalankan bertujuan untuk:

1. Mengenalpasti **kesan penggunaan M-Pembelajaran** terhadap peningkatan penglibatan pelajar, motivasi dan pemahaman pelajar dalam modul Pendidikan Islam di Politeknik Brunei.
2. Menganalisis **keberkesanan M-Pembelajaran** sebagai medium komunikasi interaktif dalam proses pengajaran dan pembelajaran modul Pendidikan Islam.
- 3.

KAJIAN LEPAS

M-Pembelajaran merupakan perkembangan daripada proses pengajaran dan pembelajaran yang menawarkan guru dan pelajar, pengalaman pembelajaran yang lebih **fleksibel**, serta mewujudkan persekitaran yang lebih **kendiri, spontan, tidak formal**, dan **peribadi** tanpa mengetepikan konteks pembelajaran formal. M-Pembelajaran, sebagai kesinambungan daripada **pembelajaran jarak jauh (d-learning)** dan **pembelajaran dalam talian (e-learning)**, membawa pendekatan yang lebih **fleksibel** dan **mudah alih**, menjadikan pendidikan lebih **canggih** dan **selaras dengan perkembangan semasa**. Yahya, S., & Abdul Razak, N. (2017) penggunaan teknologi membolehkan pelajar menguruskan pembelajaran mereka secara sendiri, meningkatkan fleksibiliti dalam proses pembelajaran, dan memberi mereka kawalan sepenuhnya terhadap cara mereka belajar. Kajian ini juga menekankan bahawa teknologi memainkan peranan penting dalam menyokong pelajar untuk mencapai prestasi akademik yang lebih baik. **Model Pembelajaran Brown (2005)** menjelaskan konsep ini dengan lebih menyeluruh melalui tiga aspek utama **mobiliti**, iaitu:

1. **Mobiliti Teknologi:** Merujuk kepada penggunaan **peranti mudah alih** seperti telefon pintar, tablet, atau komputer riba yang membolehkan akses kepada bahan pembelajaran pada bila-bila masa dan di mana sahaja. Ini membolehkan pelajar dan guru mengakses kandungan pembelajaran secara **spontan dan sendiri**, tanpa batasan tempat.
2. **Mobiliti Pelajar:** Menekankan bahawa pelajar boleh bergerak antara **lokasi pembelajaran** yang berbeza, sama ada dalam bilik darjah atau di luar bilik darjah, serta belajar secara **fleksibel** mengikut keperluan dan keadaan masing-masing. Pelajar tidak lagi terikat kepada **satu tempat** atau **masa tertentu** untuk mengakses bahan pengajaran.
3. **Mobiliti Pembelajaran:** Merujuk kepada keupayaan untuk menjalankan proses pembelajaran yang **fleksibel** dan **berterusan**, di mana pelajar dapat meneruskan pembelajaran mereka tanpa halangan ruang atau waktu. M-Pembelajaran memungkinkan pelajar untuk **mengawal** kadar dan cara mereka belajar dengan lebih **bebas**, menjadikan proses pembelajaran lebih bersifat **personal dan relevan** dengan keperluan mereka.

Dengan memahami ketiga-tiga aspek ini, jelaslah bahawa **M-Pembelajaran** bukan sahaja memberi kemudahan kepada pelajar untuk belajar di mana-mana, tetapi juga memperkayakan pengalaman pembelajaran mereka dengan **fleksibiliti** dan **kebebasan** yang lebih besar. Melalui Model Pembelajaran Brown (2005), M-Pembelajaran dijelaskan sebagai alat yang membantu mengembangkan pembelajaran ke arah yang lebih **kendiri** dan **berpusatkan pelajar**, sejajar dengan perkembangan teknologi semasa.

Meningkatkan Interaksi Pelajar dengan Guru

Kajian lepas telah menunjukkan bahawa penggunaan aplikasi mudah alih seperti WhatsApp dan Telegram mampu meningkatkan interaksi dua hala antara pelajar dan guru, memperbaiki komunikasi, dan memudahkan proses pembelajaran secara dalam talian. Kajian Barhoumi, C. (2015) menunjukkan bahawa WhatsApp meningkatkan komunikasi interaktif antara pelajar dan guru, membolehkan pelajar bertanya soalan secara langsung dan mendapatkan maklum balas segera daripada guru. **Mokhtar, S. F., & Ahmad, S. (2019)** pembelajaran kolaboratif melalui M-Pembelajaran dapat memperkayakan interaksi antara pelajar dan meningkatkan kemahiran berkomunikasi serta belajar secara berpasukan. Aplikasi seperti **Telegram** dan **Google Classroom** membantu pelajar berkolaborasi dalam tugas dan berkongsi maklumat dengan lebih mudah, sekali gus meningkatkan pengalaman pembelajaran.

Cetinkaya, L. (2017) mendapati bahawa penggunaan WhatsApp dalam pendidikan meningkatkan hubungan guru-pelajar dan menyokong proses pembelajaran. Kajian ini menekankan bagaimana WhatsApp membolehkan interaksi yang lebih dinamik dan responsif dalam kelas.

Pembelajaran Interaktif

Penggunaan multimedia dan aplikasi interaktif seperti YouTube dan TikTok membantu menjadikan pembelajaran lebih menarik, interaktif, dan memudahkan pelajar memahami kandungan pelajaran dengan lebih mudah. Hung, H. T., & Young, S. S. C. (2015) penggunaan media interaktif dalam pembelajaran, seperti video dan permainan, meningkatkan penglibatan pelajar dan menjadikan pembelajaran lebih menarik. Kajian Khalid, A. K., & Quick, D. (2016) menunjukkan bahawa penggunaan aplikasi gamifikasi seperti Kahoot dalam pengajaran membuat pembelajaran menjadi lebih interaktif dan menyeronokkan, yang secara langsung dapat meningkatkan motivasi dan penglibatan pelajar. Kajian Hassan, S. M., & Ramli, Z. (2018) mendapati bahawa elemen interaktif dan kompetitif dalam Kahoot! menjadikan pelajar lebih bermotivasi dan terlibat secara aktif dalam kelas. Penggunaan kuiz interaktif ini juga memberi peluang kepada pelajar untuk menyemak pemahaman mereka dengan serta-merta, yang membantu dalam meningkatkan pencapaian akademik mereka.

Pembelajaran Kendiri

M-Pembelajaran menyediakan pelajar dengan fleksibiliti untuk belajar secara sendiri, disamping membolehkan pelajar mengakses bahan pada bila-bila masa dan mengawal proses pembelajaran mereka sendiri, ini merupakan elemen penting dalam pembelajaran moden. Gikas, J., & Grant, M. M. (2013) menjelaskan bagaimana penggunaan peranti mudah alih seperti telefon pintar membantu pelajar mengakses bahan pembelajaran pada bila-bila masa dan di mana sahaja, memberikan mereka peluang untuk belajar secara sendiri. Song, Y. (2014) meneliti penggunaan konsep BYOD (Bring Your Own Device) dalam pembelajaran, di mana pelajar menggunakan peranti mudah alih mereka untuk mengakses bahan dan belajar secara berterusan di luar kelas. Hal ini menunjukkan bahawa M-Pembelajaran memberi ruang kepada pelajar untuk belajar di luar waktu formal pembelajaran.

Kajian Kamaruddin, S. A., & Rahim, M. A. (2019) menunjukkan bahawa pelajar lebih cenderung mengambil inisiatif sendiri untuk belajar apabila aplikasi yang digunakan mengandungi elemen permainan. Gamifikasi, seperti **Kahoot!**, bukan sahaja meningkatkan interaksi dalam kelas tetapi juga membantu pelajar mengawal proses pembelajaran mereka secara lebih efektif dan fleksibel.

Meningkatkan Motivasi Pelajar

Banyak kajian lepas telah menunjukkan bahawa penggunaan aplikasi interaktif dalam M-Pembelajaran mampu meningkatkan motivasi pelajar untuk belajar. Rosli, S. Z., & Hashim, R. A. (2020) gamifikasi dapat meningkatkan minat pelajar serta memberi kesan signifikan terhadap pencapaian akademik mereka. Gamifikasi bukan sahaja menghidupkan suasana pembelajaran, tetapi juga menjadikan pelajar lebih bermotivasi untuk terus terlibat secara aktif dalam proses pembelajaran.

Aplikasi seperti **Quizlet** dan **YouTube** meningkatkan minat pelajar terhadap pelajaran dan memberikan mereka peluang untuk belajar pada bila-bila masa. Penggunaan aplikasi ini juga membolehkan pelajar mengakses kandungan pembelajaran dengan lebih mudah, yang seterusnya meningkatkan motivasi mereka untuk terlibat secara aktif dalam pembelajaran, Salleh, M. R., & Omar, M. H. (2018). Uzunboylu, H., & Tugun, V. (2016) menyokong bahawa penggunaan M-Pembelajaran dalam pendidikan tinggi meningkatkan motivasi pelajar, terutamanya apabila pelajar diberi fleksibiliti dan peluang untuk belajar secara interaktif dan sendiri melalui peranti mudah alih.

METODOLOGI KAJIAN

Kajian ini menggunakan pendekatan **kualitatif** dengan kaedah **pemerhatian langsung** bagi menilai keberkesanan M-Pembelajaran dalam modul Pendidikan Islam di Politeknik Brunei. Pemerhatian dijalankan sepanjang proses pengajaran dan pembelajaran Pendidikan Islam yang melibatkan penggunaan aplikasi interaktif melalui M-Pembelajaran.

Reka Bentuk Kajian

Kajian ini berbentuk **kajian kes**, di mana kaedah pemerhatian digunakan untuk mendapatkan data kualitatif mengenai interaksi, penglibatan dan pemahaman pelajar terhadap kandungan pembelajaran yang disampaikan melalui M-Pembelajaran. Pemerhatian ini berfokus kepada aspek komunikasi, motivasi, dan minat pelajar terhadap subjek Pendidikan Islam dalam sesi pengajaran.

Sampel Kajian

Sampel kajian terdiri daripada **pelajar Politeknik Brunei** yang mengambil modul **Pendidikan Islam**. Seramai 152 **orang pelajar** dari beberapa program akademik di Politeknik Brunei yang mewakili bagi setiap sekolah telah dipilih sebagai sampel. Pemilihan sampel ini dibuat secara **tujuan** (purposive sampling) untuk memastikan pelajar yang terlibat aktif dalam penggunaan M-Pembelajaran.

Kaedah Pemerhatian

Pemerhatian dijalankan dalam tempoh 18 bulan semasa sesi pengajaran Pendidikan Islam. Pemerhatian dilakukan oleh penyelidik secara langsung dalam kelas tatap muka dan juga melalui **pembelajaran hybrid** yang melibatkan platform dalam talian seperti **WhatsApp, Telegram, dan PBLMS**.

Instrumen Pemerhatian

Pemerhatian berstruktur digunakan dengan **senarai semak** yang dibangunkan untuk menilai keberkesanan aspek-aspek berikut:

1. **Interaksi antara pelajar dan guru:** Pemerhatian terhadap komunikasi yang berlaku melalui aplikasi seperti WhatsApp, Telegram dan Slido serta penglibatan pelajar dalam sesi kuiz interaktif melalui Kahoot dan Quizizz.
2. **Penglibatan pelajar dalam proses pembelajaran:** Melihat tahap keterlibatan pelajar dalam menggunakan aplikasi interaktif dan platform dalam talian seperti YouTube dan Slido untuk menjawab soalan dan menyelesaikan tugas.
3. **Motivasi dan minat pelajar:** Memerhati perubahan dalam tingkah laku pelajar, seperti peningkatan dalam bertanya soalan, memberi maklum balas dalam perbincangan, dan keberanian untuk mengambil bahagian dalam aktiviti kelas.

Prosedur Pengumpulan Data

1. **Pemerhatian semasa kelas tatap muka:** Pemerhatian dijalankan oleh penyelidik semasa sesi pengajaran berlangsung dalam bilik darjah, di mana guru menggunakan alat bantu M-Pembelajaran seperti **Kahoot, YouTube, dan Quizizz**.
2. **Pemerhatian dalam talian:** Pemerhatian terhadap interaksi pelajar dan guru dilakukan melalui platform dalam talian seperti **WhatsApp, Telegram, dan PBLMS**, di mana bahan pengajaran disampaikan, dan perbincangan serta tugas dilakukan.
3. **Catatan lapangan:** Sepanjang pemerhatian, penyelidik merekodkan tingkah laku, respons dan penglibatan pelajar dalam kelas serta semasa menggunakan aplikasi interaktif.

Analisis Data

Data yang diperoleh daripada pemerhatian dianalisis secara kualitatif. **Analisis tematik** digunakan untuk mengenal pasti tema-tema utama yang berkaitan dengan keberkesanan M-Pembelajaran dalam meningkatkan motivasi, minat, dan interaksi pelajar. Data yang dikumpul kemudian dianalisis untuk melihat corak tingkah laku pelajar serta bagaimana mereka berinteraksi dengan aplikasi interaktif yang digunakan dalam modul Pendidikan Islam.

Kesahan dan Kebolehpercayaan

Untuk memastikan kesahihan dan kebolehpercayaan kajian, **triangulasi data** dilakukan dengan mengumpulkan data dari beberapa sumber, seperti catatan pemerhatian, tugas pelajar, dan maklum balas guru. Pemerhatian dilakukan secara berulang kali untuk memastikan data yang dikumpulkan adalah **konsisten** dan **boleh dipercayai**.

DAPATAN KAJIAN

Kajian ini mendapati beberapa **kelebihan** penggunaan M-Pembelajaran dalam pengajaran dan pembelajaran Pendidikan Islam, termasuk dalam meningkatkan **interaksi pelajar dengan guru**, **pembelajaran interaktif**, **meningkatkan motivasi pelajar** dan **pembelajaran sendiri**. Dalam menilai keberkesanan penggunaan **M-Pembelajaran** sebagai alat pengajaran dalam **modul Pendidikan Islam** di Politeknik Brunei, penekanan dilakukan kepada penggunaan aplikasi interaktif seperti **Slido**, **Kahoot**, **WhatsApp**, **Telegram**, **YouTube**, **TikTok**, dan **Canva**.

Hasil kajian menunjukkan bahawa aplikasi-aplikasi ini berkesan dalam meningkatkan **interaksi**, **motivasi**, **minat pelajar**, dan **pemahaman** terhadap bahan pengajaran. Selain itu, kajian ini juga membuktikan bahawa pendekatan M-Pembelajaran menyokong **pembelajaran sendiri** dan memperkayakan pengalaman pelajar dalam kelas, terutamanya melalui pendekatan **pembelajaran hybrid (PBhybrid)** yang digunakan di Politeknik Brunei. Berikut adalah beberapa dapatan utama:

1. Meningkatkan Interaksi Pelajar dengan Guru

Penggunaan aplikasi seperti **WhatsApp** dan **Slido** memudahkan pelajar dan guru untuk **berinteraksi secara langsung** dan membuat perbincangan berkaitan tugas atau bahan pengajaran secara dalam talian. Interaksi antara pelajar dan guru adalah aspek penting dalam proses pembelajaran, di mana guru memberikan arahan dan bimbingan, manakala pelajar memberi maklum balas, bertanya soalan dan turut serta secara aktif.

Penggunaan aplikasi ini menunjukkan peningkatan yang ketara dalam **interaksi aktif** antara pelajar dan guru. Melalui aplikasi ini, pelajar dapat bertanya soalan secara langsung dan menerima **maklum balas segera** daripada guru. Ini mempercepatkan proses komunikasi dan memastikan pelajar mendapat penjelasan dengan lebih cepat, berbanding kaedah tradisional yang memerlukan masa untuk bertemu secara bersemuka.

2. Pembelajaran Interaktif

Pembelajaran interaktif melibatkan **interaksi aktif** antara pelajar dan bahan pembelajaran. Aplikasi mudah alih seperti **YouTube** dan **TikTok** digunakan oleh guru untuk menyediakan bahan pengajaran dalam bentuk **multimedia** yang menarik. Bahan multimedia ini, termasuk video, animasi, dan simulasi, memudahkan pelajar memahami konsep-konsep abstrak dengan lebih mudah dan cepat melalui kaedah **visual dan interaktif**. Ini menjadikan pengalaman pembelajaran lebih menarik dan memotivasi pelajar untuk terus belajar.

3. Meningkatkan Motivasi Pelajar

Penggunaan aplikasi seperti **Kahoot** memainkan peranan penting dalam merangsang **motivasi** dan **minat pelajar**. Dengan menggunakan kuiz interaktif dan elemen **gamifikasi**, pelajar menunjukkan **fokus** yang lebih baik dan **semangat** yang tinggi untuk menyertai aktiviti pembelajaran. Aktiviti sebegini bukan sahaja menjadikan pembelajaran lebih **menyeronokkan**, tetapi juga **meningkatkan penyertaan aktif** pelajar dalam kelas, menjadikan proses pembelajaran lebih dinamik dan melibatkan lebih ramai pelajar.

Selain itu, aplikasi seperti **Telegram** yang menyediakan ruang untuk **perbincangan berkumpulan** dan **perkongsian bahan pembelajaran** seperti gambar, video, serta fail lain yang berkaitan dengan topik pembelajaran, pelajar juga dapat berkongsi maklumat dengan lebih **mudah** dan **berinteraksi secara mendalam** berhubung topik yang sedang dipelajari, sekaligus meningkatkan **kefahaman** dan **kolaborasi** di antara pelajar.

Penggunaan aplikasi interaktif dan fleksibiliti **M-Pembelajaran** terbukti berkesan dalam **meningkatkan motivasi pelajar**. Pelajar menjadi lebih berminat dan terdorong untuk terlibat dalam pembelajaran apabila mereka dapat berinteraksi dengan bahan pengajaran yang **menarik** dan **relevan** melalui platform interaktif.

4. Penglibatan dalam Pembelajaran Kendiri (Self-Learning)

Dapatan kajian menunjukkan penggunaan aplikasi Canva sebagai alat bantu visual bagi menghasilkan projek kreatif pelajar, nota visual atau mencipta infografik dan bahan visual yang menarik telah memberi peluang kepada pelajar untuk belajar secara **kendiri**. **Penggunaan Youtube sebagai platform video pendidikan juga memberi peluang kepada pelajar untuk mengakses** bahan pembelajaran pada bila-bila masa dan di mana-mana sahaja. Ini memberi peluang kepada pelajar untuk belajar secara **kendiri** dan **fleksibel** di luar waktu pengajaran formal. Pelajar juga cenderung untuk mengulang kaji bahan pengajaran secara **kendiri** pada masa lapang menggunakan peranti mudah alih mereka.

M-Pembelajaran memberikan mereka fleksibiliti untuk mengakses bahan pembelajaran di mana-mana dan pada bila-bila masa, yang membantu pelajar **mengawal proses pembelajaran** mereka sendiri dan menggalakkan **pembelajaran sepanjang hayat**. Ini membuktikan bahawa pendekatan M-Pembelajaran berjaya memupuk **tanggungjawab pembelajaran sendiri** di kalangan pelajar.

5. Keterbatasan dan implikasi sosial dalam penggunaan M-Pembelajaran

Walaupun Secara keseluruhan hasil kajian ini menunjukkan bahawa **M-Pembelajaran** telah berjaya menjadikan proses pembelajaran lebih **menarik, seronok, dan interaktif**, serta memberi pelajar peluang untuk memperoleh **pemahaman yang lebih mendalam** terhadap modul yang diajar, tetapi dapatan kajian juga memperlihatkan wujudnya keterbatasan dan implikasi sosial dalam penggunaan m-pembelajaran dalam aspek:

- **Keterbatasan Teknologi:**

Penggunaan M-Pembelajaran bergantung kepada infrastruktur capaian internet yang stabil dan akses kepada peranti mudah alih. Maka, apabila kawasan atau kalangan pelajar yang menghadapi kekurangan akses kepada Wi-Fi atau peranti digital, pelaksanaan M-Pembelajaran menjadi terhad. Ini boleh menjejaskan keberkesanan proses pembelajaran dan menyebabkan sebahagian pelajar tidak dapat memanfaatkan sepenuhnya platform pembelajaran ini.

- **Implikasi Sosial:**

Ketidaksamaan latar belakang sosioekonomi dan pemilikan jenis teknologi yang berbeza mengakibatkan wujudnya jurang pendidikan di kalangan pelajar. Pelajar yang mempunyai peranti canggih dan capaian internet yang baik berpeluang mendapatkan pengalaman pembelajaran yang lebih interaktif dan kaya dengan ciri digital. Sebaliknya, pelajar yang terhad aksesnya mungkin menghadapi kekangan dalam mengikuti pembelajaran digital dengan berkesan. Ini boleh membawa kepada ketidaksamarataan pencapaian pendidikan dan memperkukuhkan jurang dalam akses pendidikan antara pelajar yang berkemampuan dengan yang kurang berkemampuan.

Kesimpulannya, Penggunaan M-Pembelajaran, walaupun membawa banyak manfaat, tetapi ia harus disokong dengan usaha untuk mengatasi keterbatasan dan mengurangkan kesan negatif implikasi sosialnya agar semua pelajar mendapat peluang yang adil dalam pendidikan. Sebagaimana wawasan Brunei 2035, untuk memberikan pendidikan yang mampan dan holistik.

KESIMPULAN DAN CADANGAN

Kajian ini menunjukkan bahawa penggunaan M-Pembelajaran memberikan impak positif terhadap keberkesanan pengajaran dan pembelajaran modul Pendidikan Islam di Politeknik Brunei. Penggunaan teknologi mudah alih bukan sahaja memudahkan akses kepada bahan pembelajaran, tetapi juga meningkatkan interaksi antara guru dan pelajar. Pelajar lebih bermotivasi dan lebih terlibat secara aktif dalam proses pembelajaran melalui penggunaan aplikasi interaktif seperti Kahoot!, Quizizz, dan YouTube. Ini membuktikan bahawa pendekatan pembelajaran berasaskan teknologi mampu memupuk suasana pembelajaran yang lebih fleksibel dan menarik.

Selain itu, kajian ini juga mendapati bahawa M-Pembelajaran sesuai untuk diterapkan dalam konteks pendidikan moden kerana ia membolehkan pelajar, belajar pada bila-bila masa dan di mana-mana sahaja. Namun, keberkesanan sepenuhnya M-Pembelajaran bergantung kepada sokongan infrastruktur teknologi yang mencukupi, seperti capaian internet dan akses kepada peranti mudah alih.

Oleh itu, kajian ini mencadangkan beberapa perkara berikut bagi menyokong peningkatan dan keberkesanan penggunaan M-Pembelajaran dalam modul Pendidikan Islam khususnya di Politeknik Brunei dan umumnya kesemua pengajaran Pengetahuan Ugama Islam di negara Brunei Darussalam:

1. Memperluas Penggunaan Aplikasi Interaktif:

Aplikasi seperti Kahoot!, Quizizz, dan YouTube yang sudah digunakan dalam proses pembelajaran boleh diperluas kepada lebih banyak topik dan subjek dalam Pendidikan Islam. Ini akan memaksimumkan interaksi pelajar dengan bahan pembelajaran melalui pelbagai pendekatan visual dan permainan yang dapat meningkatkan pemahaman konsep-konsep penting.

2. Penggunaan Teknologi Tambahan:

AR/VR (Augmented Reality/Virtual Reality) boleh diperkenalkan untuk simulasi ibadah seperti solat, wudhu atau haji. Ini dapat membantu pelajar mempraktikkan ajaran Islam dalam persekitaran yang lebih interaktif dan praktikal.

3. Latihan kepada guru:

Guru-guru perlu diberikan latihan berterusan dalam teknologi M-Pembelajaran supaya mereka dapat memanfaatkan aplikasi dan alat pembelajaran terkini dengan lebih berkesan dalam modul pengajaran mereka.

4. *Penambahbaikan Infrastruktur Teknologi:*

Dicadangkan agar institusi menyediakan capaian internet yang lebih baik, seperti Wi-Fi di semua kawasan kampus atau hotspot percuma di kawasan yang mempunyai pelajar, agar pelajar dapat mengakses bahan pembelajaran digital dengan lebih mudah. Peningkatan keupayaan akses internet kepada semua pelajar akan membantu melancarkan proses pembelajaran M-Pembelajaran. Ini adalah penting untuk memastikan tiada pelajar yang tercicir disebabkan masalah teknikal.

5. *Penyediaan Peranti untuk Pelajar yang Memerlukan:*

Institusi boleh menyediakan program pinjaman peranti mudah alih atau subsidi untuk pelajar yang memerlukan. Ini akan mengurangkan ketidaksamaan akses kepada teknologi dan membantu pelajar terlibat secara penuh dalam pembelajaran digital.

6. *Kandungan yang Bersifat Adaptif:*

Aplikasi M-Pembelajaran perlu menyokong kandungan pembelajaran yang disesuaikan mengikut tahap pemahaman pelajar. Ini bermaksud, bahan pembelajaran perlu disusun mengikut kemampuan individu bagi memastikan setiap pelajar mendapat manfaat secara maksimum.

7. *Pembelajaran Sepanjang Hayat:*

M-Pembelajaran boleh digunakan bukan hanya di institusi pendidikan tetapi juga untuk masyarakat umum. Modul pembelajaran Islam dapat disebarkan melalui aplikasi seperti WhatsApp atau Telegram untuk menyokong pendidikan agama sepanjang hayat.

8. *Kandungan yang Boleh Diakses Tanpa Capaian Internet:*

Mengembangkan bahan pembelajaran yang boleh dimuat turun atau diakses secara offline. Ini akan membantu pelajar yang tidak mempunyai akses internet yang konsisten untuk tetap terlibat dalam pembelajaran.

Secara keseluruhannya, M-Pembelajaran dalam modul Pendidikan Islam menawarkan pendekatan yang lebih fleksibel, interaktif, dan selari dengan perkembangan teknologi semasa, sekaligus menjanjikan peningkatan yang signifikan dalam keberkesanan pendidikan Islam di Politeknik Brunei.

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Penerapan Perkakasan Berfikir Baharu (PBB) bagi Meningkatkan kemahiran Menyelesaikan Masalah Dalam Aktiviti Pembelajaran Koperatif

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ABSTRAK

Kajian ini bertujuan untuk menyelidiki dan mengenal pasti isu-isu berkaitan pelaksanaan Perkakasan Berfikir Baharu (PBB) bagi meningkatkan kemahiran pelajar dalam menyelesaikan masalah dalam karangan jenis pendapat melalui aktiviti pembelajaran koperatif. PBB merupakan sebuah perkakasan yang digunakan untuk menguji idea yang dikemukakan dalam penyelesaian masalah secara sistematik agar dapat menyelesaikan masalah dan tidak menimbulkan masalah BAHARU. Penerapan PBB dalam pengajaran karangan memainkan peranan penting dalam mendedahkan pelajar kepada kaedah penilaian yang lebih teratur, efektif, dan kritis. Penggunaan PBB bukan sahaja membantu pelajar mencadangkan idea yang baharu, tetapi juga meningkatkan keupayaan menyelesaikan masalah, khususnya dalam penulisan karangan jenis pendapat.

Kajian ini menggunakan reka bentuk kajian tindakan dan eksperimen dengan pendekatan gabungan kuantitatif dan kualitatif. Data diperoleh melalui kaedah kuiz (ujian prakajian dan ujian pascakajian) dan, pemerhatian dan catatan refleksi. Data kuantitatif dianalisis menggunakan ujian-*t* berpasangan, manakala data kualitatif dianalisis melalui analisis SWOT dan analisis tematik.

Hasil ujian-*t* berpasangan telah menunjukkan peningkatan yang signifikan dalam markah pelajar selepas pelaksanaan PBB ($M = 2.611$, $SD = 1.037$), membuktikan keberkesanan PBB dalam meningkatkan kemahiran penulisan karangan. Kajian ini turut mencadangkan empat strategi utama untuk melaksanakan PBB dalam pengajaran. Selain daripada meningkatkan kemahiran menyelesaikan masalah, dapatan kajian ini juga menunjukkan bahawa pelajar lebih berupaya dalam menilai idea-idea karangan secara kritis selepas penerapan PBB.

Oleh yang demikian, kajian ini mencadangkan agar pendidik mempertimbangkan integrasi PBB sebagai salah satu strategi untuk meningkatkan pencapaian pelajar dalam penulisan karangan. Hasil kajian ini dapat dijadikan asas untuk memperkaya amalan pengajaran dan pembelajaran, serta membangunkan pelajar yang lebih kritis dan berkemahiran dalam menyelesaikan masalah. Kajian masa depan boleh melihat kesan jangka panjang penerapan PBB dalam konteks pembelajaran yang lebih meluas.

Kata Kunci: Perkakasan Berfikir BAHARU (PBB), kemahiran menyelesaikan masalah, pembelajaran koperatif.

1.1 Latar Belakang Kajian

Kemahiran seperti berkomunikasi, berfikir secara kreatif dan penyelesaian masalah, adalah di antara kemahiran yang diperlukan pada abad ke-21 (Rotherham & Willingham, 2010, Trilling & Fadel, 2012; Van Laar, Van Deursen, Van Dijk & De Haan, 2017; Alias, Karim & Iksan, 2019). Oleh yang demikian, para pelajar perlu diberikan pengalaman pembelajaran yang sesuai dengan keperluan tersebut agar pengetahuan dan kemahiran yang diperlukan ini dapat diberikan untuk mereka berkembang maju (Vockley, 2007).

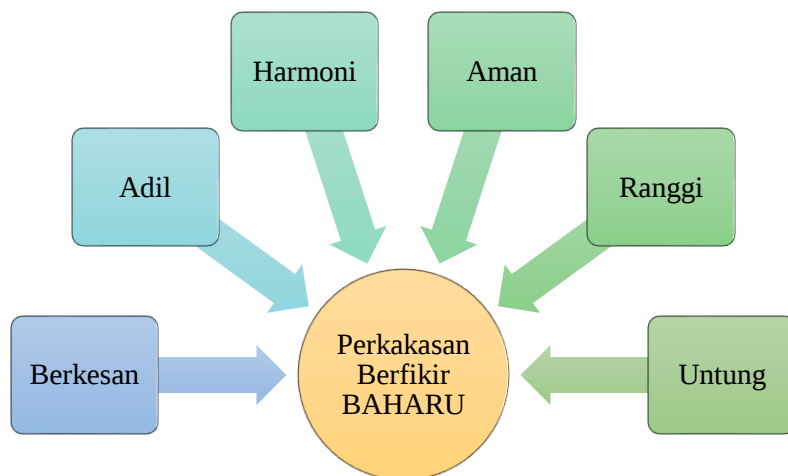
Sebuah sistem pendidikan yang baharu telah pun dilancarkan pada Januari 2009 di Negara Brunei Darussalam dikenali sebagai Sistem Pendidikan Negara Abad ke-21 atau SPN21 (Kementerian Pendidikan Negara Brunei Darussalam, 2013). Antara tujuan SPN21 diperkenalkan adalah untuk meningkatkan lagi mutu pendidikan yang selaras dengan keperluan abad ke-21, dan membangunkan kemahiran-kemahiran asas yang diperlukan oleh pelajar pada masa kini. Manakala antara perubahan utama dalam SPN21 adalah menekankan pendekatan pengajaran dan pembelajaran yang berpusatkan pelajar, penglibatan pelajar secara aktif sama ada dalam individu atau kumpulan, dan mengikut gaya dan keperluan pembelajaran pelajar secara individu.

Melihat kepada kepentingan kemahiran-kemahiran seperti berfikir dan menyelesaikan masalah, sebuah perkakasan berfikir yang dinamakan sebagai Perkakasan Berfikir BAHARU (PBB) telah dicipta. PBB merupakan sebuah perkakasan yang diperkenalkan oleh Aliamat (2014). Konsep ini digunakan untuk menguji idea yang dikemukakan dalam penyelesaian masalah secara sistematik agar dapat menyelesaikan masalah. PBB terdiri daripada enam kata kunci berikut iaitu Berkesan, Adil, Harmoni, Aman, Ranggi dan Untung. Berikut adalah penerangan kepada enam kata kunci tersebut:

- i. Berkesan. Cadangan asal yang dikemukakan berkeupayaan menyelesaikan masalah dan cabaran yang dihadapi secara menyeluruh.
- ii. Adil. Cadangan asal yang dikemukakan tidak ada unsur penganiayaan dan penipuan ; tidak melanggar undang-undang atau etika.
- iii. Harmoni. Cadangan asal yang dikemukakan tidak merosakkan sistem atau subsistem lain.
- iv. Aman. Cadangan asal yang dikemukakan adalah selamat iaitu tidak menghancurkan dan tidak membawa kepada kehancuran.
- v. Ranggi. Cadangan asal yang dikemukakan bersifat tampan dan gagah: elok reka bentuk atau pelaksanaannya; tahan lama, jika melibatkan sesuatu yang tidak tahan lama, pastikan perkara tersebut mudah diganti.
- vi. Untung. Cadangan asal yang dikemukakan tidak merugikan semua pihak dari segi kos, penggunaan sumber masa sama ada jangka masa pendek mahupun panjang.

Rajah 1. *Perkakasan Berfikir BAHARU (Aliamat, 2014).*

Berdasarkan daripada penerangan bagi setiap kata kunci PBB, pelajar dapat menilai cadangan penyelesaian masalah dengan mempersoalkannya menggunakan kata kunci-kata kunci daripada PBB. Jadual 1 di bawah adalah soalan-soalan utama semi berstruktur yang dapat menggalakkan pelajar menilai cadangan penyelesaian masalah menggunakan PBB.



Jadual 1. *Adaptasi soalan-soalan utama semi berstruktur Perkakasan Berfikir BAHARU (Aliamat, 2017).*

	Kata kunci	Soalan-soalan utama semi berstruktur
Baharu	Baharu?	Adakah cadangan mengatasi ini sesuatu yang baharu atau biasa?
B	Berkesan?	Adakah masalah berjaya diatasi dengan pelaksanaan cadangan ini?
A	Adil?	Adakah cadangan penyelesaian ini adil kepada semua orang? Adakah pelaksanaan cadangan ini tidak melanggar etika/undang-undang?
H	Harmoni?	Adakah terdapat sebarang kesan sampingan negatif daripada penyelesaian ini?
A	Aman?	Adakah cadangan penyelesaian ini selamat untuk dilaksanakan?
R	Ranggi?	Adakah cadangan penyelesaian ini bersifat mampan dan berkesan dalam jangka masa panjang?
U	Untung?	Adakah cadangan ini tidak merugikan dari segi kos dan penggunaan sumber?

Oleh itu, kajian ini membincangkan mengenai perkara-perkara yang berhubung kait dengan penerapan perkakasan berfikir BAHARU dalam aktiviti pembelajaran koperatif bagi meningkatkan kemahiran menyelesaikan masalah khususnya dalam aspek pembelajaran karangan.

1.2 Pernyataan Masalah

Dalam Sistem Pendidikan Negara Abad Ke-21 (Kementerian Pendidikan Negara Brunei Darussalam, 2013, hlm. 48 & 55) salah satu bidang pembelajaran yang difokuskan adalah kemahiran berfikir dan menyelesaikan masalah, dan juga mengharapkan agar dapat menghasilkan pelajar berkemahiran untuk menilai pelbagai maklumat yang diterima. Berdasarkan daripada pengalaman pengkaji sendiri, penerapan kemahiran menyelesaikan masalah dan menilai khususnya dalam pembelajaran karangan berbentuk pendapat adalah kurang diberikan tekanan dalam pengajaran dan pembelajaran pelajar. Malah kebanyakan guru lebih memfokuskan kepada teknik penulisan bagi meningkatkan kemahiran menulis. Pernyataan ini disokong oleh Kiuwara (2009) yang mengatakan bahawa pendekatan yang kerap digunakan oleh guru dalam pengajaran penulisan adalah pengukuhan, arahan langsung dan matlamat penulisan.

Menurut Webb (1989), maklumat daripada guru (pengamal) yang juga sebagai pengkaji dalam kajian tindakan perlu diambil kira dalam hala tuju kajian yang dilaksanakan. Berdasarkan daripada pengalaman pengkaji sendiri dalam, pengajaran karangan jenis pendapat yang memerlukan untuk menyelesaikan masalah, idea-idea karangan pada kebiasaannya diberikan oleh guru di samping idea pelajar sendiri dengan bantuan guru. Manakala proses penilaian terhadap idea penyelesaian masalah yang dikemukakan dilakukan secara tidak sistematik dan kadang kala tidak menjalani proses penilaian menggunakan perkakasan berfikir tertentu. Malahan pelajar digalakkan untuk mengemukakan lebih banyak idea bagi memperoleh markah yang lebih baik. Justeru, pelajar cenderung untuk menyediakan idea-idea yang tidak relevan atau yang konvensional daripada mencadangkan penyelesaian yang tuntas kepada masalah (Aliamat, 2017). Oleh yang demikian, guru perlu mengatasi cabaran ini seperti menerapkan perkakasan berfikir tertentu kepada pelajar. Seperti mana Johari (2018) mengatakan bahawa guru perlu bijak menyediakan pengalaman pembelajaran yang menggalakkan pelajar supaya dapat berfikir untuk menyelesaikan masalah.

Oleh sebab itu, kemahiran menilai dan kemahiran menyelesaikan masalah perlulah ditekankan dalam pengajaran dan pembelajaran penulisan karangan khususnya dalam bentuk pendapat menyelesaikan masalah, sehingga ia menjadi satu amalan. Seperti mana Amsel dan Brock (1996) berpendapat bahawa melalui amalan yang mencukupi, pelajar akan berjaya untuk membuat penilaian. Selain itu, kajian yang dijalankan oleh Ross, Rolheiser dan Hogaboam-Gray (1999) telah menunjukkan bahawa kemampuan untuk menilai penulisan sendiri dapat memberikan kesan positif terhadap hasil penulisan. Justeru dengan menekankan kemahiran menilai dalam pengajaran dan pembelajaran pelajar, ia dapat meningkatkan lagi kemahiran menyelesaikan masalah khususnya dalam aspek penulisan karangan pendapat menyelesaikan masalah. Seperti mana menurut Miri, David dan Uri (2007), dan Retnawati, Djidu, Kartianom dan Anazifa (2018) yang menegaskan bahawa kemahiran berfikir aras tinggi boleh merangsang pemikiran kritis dan penyelesaian masalah.

Selain daripada itu, berdasarkan pengamatan pengkaji sendiri juga, pelajar lebih bermotivasi untuk menjana idea apabila diberi peluang untuk bekerja secara koperatif. Kebanyakan pelajar lebih gemar untuk bekerja secara koperatif kerana manfaatnya terhadap hasil pembelajaran seperti dapat menjana idea yang lebih baik dan keperluan berinteraksi untuk mencapai kata sepakat (Levrai & Bolster, 2018). Tambahan lagi, menurut Nebesniak (2007), Kaddoura (2013), dan Fung dan Howe (2014) aktiviti pembelajaran koperatif dapat membangunkan kemahiran berfikir secara kritis pelajar. Justeru ini menunjukkan bahawa aktiviti pembelajaran koperatif yang menekankan kemahiran berfikir aras tinggi berpotensi untuk mengatasi cabaran kemahiran menyelesaikan masalah dalam kalangan pelajar.

1.3 Objektif Kajian

- i. Untuk mengenal pasti pengalaman guru terhadap pengajaran PBB dalam soalan karangan jenis pendapat menyelesaikan masalah.
- ii. Untuk menyelidiki pengalaman dan persepsi pelajar terhadap pembelajaran PBB dalam soalan karangan jenis pendapat menyelesaikan masalah.

1.4 Soalan Kajian

- i. Adakah terdapat perbezaan min yang ketara di antara markah ujian prakajian dengan ujian pascakajian?
- ii. Dengan mengenal pasti keberkesanan pengajaran PBB, bagaimanakah pelaksanaan yang boleh guru cadangkan dalam pengajaran PBB?

1.5 Kerangka Teori Kajian

Dalam menjalankan kajian ini, pengkaji menggunakan Teori Perantisan Kognitif (*Cognitive Apprenticeship*) daripada Collins, Brown dan Holum (1991) yang berasaskan sosio-konstruktivisme sebagai teori asas dan sumber rujukan. Teori sosio-konstruktivisme lebih menekankan kepada pembinaan makna yang terhasil daripada interaksi sosial.

Rajah 2. Konsep kerangka teori Perantisan Kognitif (Collins *et al.*, 1991).



Melalui Teori Perantisan Kognitif yang dikembangkan oleh Collins *et al.* (1991), terdapat enam kaedah yang dicadangkan bagi memperoleh maklumat, dan kemahiran untuk menggunakan maklumat tersebut. Kaedah pertama merupakan pemodelan (*modeling*) iaitu pelajar memerhatikan cara guru atau orang yang lebih pakar melaksanakan sesuatu. Kaedah seterusnya ialah bimbingan (*coaching*) iaitu membimbing pelajar dengan memberikan petunjuk atau maklum balas semasa mereka melaksanakan tugas. Perancangan (*scaffolding*) merupakan kaedah yang ketiga dengan memberikan bantuan kepada pelajar melaksanakan tugas. Kaedah keempat ialah artikulasi (*articulation*) iaitu proses mendapatkan tugas yang dilakukan oleh pelajar. Kaedah kelima pula ialah refleksi (*reflection*) iaitu pelajar membandingkan hasil tugas mereka dengan rakan yang lain, guru atau orang yang lebih pakar. Manakala kaedah yang terakhir pula adalah penerokaan (*exploration*) iaitu menggalakkan pelajar untuk melaksanakan tugas secara bersendirian.

2.0 Tinjauan Literatur

Dalam usaha untuk meningkatkan kemahiran menyelesaikan masalah, kajian-kajian lepas telah mencadangkan bahawa pendekatan pembelajaran koperatif juga berhasil dalam memberikan kesan yang positif terhadap kemahiran tersebut. Sebagai contohnya, Nebesniak (2007) menilai kemahiran menyelesaikan masalah pelajar dengan mengumpulkan data daripada penyelesaian masalah yang dilakukan secara individu dan berkumpulan daripada peserta yang sama. Kajian tersebut mendapati bahawa pelajar telah menunjukkan kemahiran menyelesaikan masalah yang lebih baik, berkebolehan dalam berfikir secara kritis, dan penglibatan yang aktif dalam perbincangan apabila bekerja secara berkumpulan. Dapatan kajian tersebut disokong oleh kajian-kajian yang dilaksanakan oleh Gök dan Sýlay (2010), dan Hassan, Mohd-Yusof, Abu dan Mohammad (2011), yang menunjukkan peningkatan dalam

kemahiran menyelesaikan masalah melalui aktiviti pembelajaran koperatif berbanding kaedah pengajaran konvensional. Manakala dalam meneroka kesan strategi pengajaran-pembelajaran koperatif terhadap kemahiran pemikiran kritis, kajian daripada Kaddoura (2013) turut mendedahkan perbezaan yang signifikan dalam kumpulan eksperimen berbanding kumpulan kawalan, menunjukkan keberkesanan strategi pembelajaran koperatif dalam meningkatkan kemahiran berfikir kritis dan menyelesaikan masalah pelajar.

Antara faktor yang menyumbangkan peningkatan dalam kemahiran menyelesaikan masalah melalui aktiviti pembelajaran koperatif ini adalah disebabkan keperluan untuk berinteraksi dalam menyelesaikan masalah dengan berkesan. Seperti mana menurut kajian Gök dan Sýlay (2010) yang menunjukkan bahawa interaksi sosial dan sokongan rakan sebaya meningkatkan pemahaman dan aplikasi strategi penyelesaian masalah dalam pembelajaran koperatif. Peningkatan dalam pemahaman dan strategi penyelesaian masalah melalui aktiviti pembelajaran koperatif ini terbukti turut meningkatkan penyelesaian yang lebih baik. Pernyataan ini disokong oleh kajian Nebesniak (2007) yang mendapati bahawa penyelesaian yang dihasilkan secara berkumpulan bertambah baik dari segi kualiti berbanding dengan penyelesaian yang dihasilkan secara individu. Selanjutnya, kajian yang dijalankan oleh Hassan *et al.* (2011) juga menemukan dapatan yang sama, iaitu terdapatnya peningkatan dalam kemahiran menyelesaikan masalah, termasuk proses penyelesaian masalah yang lebih baik seperti pengenpastian masalah, analisis, sintesis, penjanaan penyelesaian, refleksi dan pembelajaran terarah sendiri.

Selain itu, kemahiran untuk menyelesaikan masalah ini juga boleh dikaitkan dengan kemahiran berfikir aras tinggi yang merangkumi proses kognitif yang melangkaui mengingat maklumat asas dan menggalakkan dalam penglibatan menganalisis, menilai, dan mencipta. Seperti mana menurut Retnawati *et al.* (2018), penggunaan kemahiran berfikir aras tinggi boleh merangsang pemikiran kritis dan penyelesaian masalah. Begitu juga dengan Miri *et al.* (2007) yang menegaskan kemahiran berfikir aras tinggi adalah asas kepada penyelesaian masalah yang berkesan. Perkara ini adalah kerana kemahiran menyelesaikan masalah merangkumi proses pengenpastian terhadap masalah, menjana penyelesaian, menilai dan memilih penyelesaian, yang memerlukan aspek-aspek yang terdapat dalam kemahiran berfikir aras tinggi.

Selain daripada strategi pembelajaran koperatif, strategi pengajaran yang berasaskan menyelesaikan mempunyai impak yang ketara dalam meningkatkan kebolehan menyelesaikan masalah dan kemahiran berfikir yang mendalam. Pernyataan ini dapat dibuktikan oleh kajian daripada Hassan *et al.* (2011) yang menunjukkan perbezaan signifikan dalam kemahiran menyelesaikan masalah selepas menjalani pembelajaran yang berasaskan menyelesaikan masalah seperti yang ditunjukkan oleh nilai-*p* (nilai keberangkalian) yang rendah ($p < 0.05$) dan saiz kesan (*d*) lebih besar daripada 0.8. Dapatan ini menunjukkan bahawa menunjukkan bahawa pengajaran yang berasaskan menyelesaikan masalah mempunyai kesan yang positif terhadap kreativiti dan kemahiran menyelesaikan masalah, meningkatkan keupayaan mereka untuk mendekati masalah daripada perspektif yang berbeza dan menjana penyelesaian

yang inovatif. Dapatan ini disokong lagi oleh kajian Hidayati dan Wagiran (2020) yang mengenal pasti bahawa kemahiran menyelesaikan masalah dapat dipertingkatkan melalui pembelajaran berasaskan masalah yang menunjukkan peningkatan terhadap kemahiran menyelesaikan masalah dalam setiap kitaran yang dijalankan.

Selanjutnya penekanan pada kemahiran berfikir aras tinggi dalam pengajaran, seperti melalui strategi penyoalan, telah dikenal pasti sebagai salah satu strategi untuk meningkatkan kemahiran menyelesaikan masalah dalam kalangan pelajar. Nappi (2017) menegaskan bahawa teknik penyoalan yang berkesan memainkan peranan penting dalam merangsang penglibatan yang aktif pelajar dalam proses pembelajaran, seterusnya meningkatkan penglibatan dan kebolehan analitikal mereka. Selain itu, Novitaningrum dan Lestari (2020) juga telah menerangkan keberkesanan strategi penyoalan provokatif dalam mencetuskan pemikiran kritis dalam kalangan pelajar dalam persekitaran bilik darjah. Strategi ini menyerlahkan kepentingan peranan teknik penyoalan yang boleh menggalakkan penghuraian atau pengenalpastian masalah dan kemahiran menyelesaikan masalah yang lebih mendalam dalam kalangan pelajar.

Di samping itu, kajian Raflee dan Halim (2021) telah mengatakan bahawa penerapan pemikiran kritis sebagai strategi pengajaran dan pembelajaran dapat meningkatkan kemahiran menyelesaikan masalah dalam kalangan pelajar. Kajian tersebut mendapati terdapat peningkatan pencapaian peserta kajian bagi ujian pascakajian berbanding ujian prakajian setelah intervensi dilaksanakan. Dapatan ini selaras dengan kajian Murawski (2014) yang mengatakan bahawa kemahiran berfikir secara kritis membawa kepada kejayaan dalam akademik. Dalam kajian Belecina dan Ocampo (2018) pula menerangkan bahawa pelajar mempunyai pengalaman pembelajaran yang positif ketika melibatkan diri dalam aktiviti menyelesaikan masalah bagi tujuan untuk meningkatkan kebolehan pemikiran kritis. Dalam kata lain, pemikiran kritis dan kemahiran menyelesaikan masalah mempunyai hubungan yang baik antara satu sama lain.

Dalam konteks meningkatkan penglibatan yang aktif dalam aktiviti menyelesaikan masalah, Singh dan Manjaly (2022) menekankan kepentingan untuk mencetuskan rasa ingin tahu dan minat pelajar seperti bermula dari awal pembelajaran. Rasa ingin tahu yang tercetus dari awal pembelajaran seperti induksi set ini akan dapat meningkatkan motivasi dan penglibatan yang aktif pelajar dalam pembelajaran (Othman & Kassim, 2021). Tambahan lagi, induksi set mempunyai peranan yang penting dalam menarik perhatian dan dapat menggalakkan maklum balas yang positif daripada pelajar (Sandy, Jobar, Rusli & Adam, 2021). Kyu (2018) juga mencadangkan penggunaan bahan pembelajaran yang relevan seperti menggunakan contoh senario dunia sebenar merupakan strategi yang berkesan dalam menggalakkan pelajar menjadi aktif dalam proses pembelajaran.

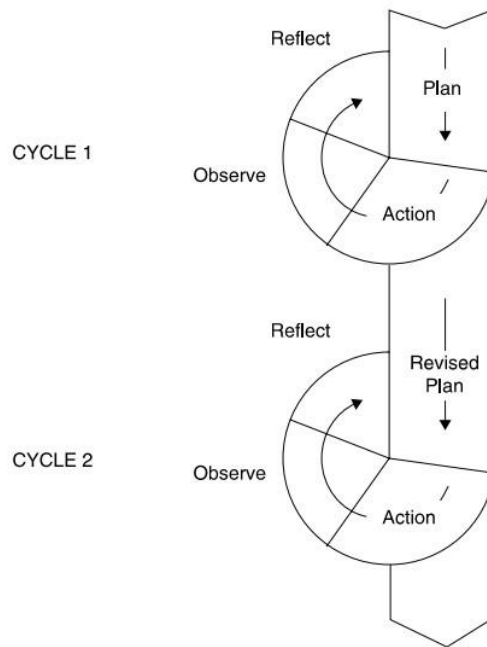
Di samping itu, keberkesanan pembelajaran yang meningkatkan kemahiran menyelesaikan masalah ini juga dapat disokong oleh pengetahuan sedia ada pelajar. Kepentingan pengetahuan sedia ada pelajar dalam penyelesaian masalah telah dibincangkan dalam kajian pendidikan. Antaranya, pengkaji-pengkaji seperti Pretz, Naples, dan Sternberg (2003) telah menekankan bahawa pengetahuan sedia ada pelajar boleh mempengaruhi kecepatan dan ketepatan kemahiran menyelesaikan masalah. Begitu juga dengan Diaz (2017) yang menekankan bahawa pengetahuan sedia ada adalah aspek penting dalam pembelajaran, mencadangkan bahawa ia membentuk asas di mana maklumat dan kemahiran baharu dibina. Perspektif ini disokong lagi oleh Zambrano, Kirschner, Sweller dan Kirschner (2019), yang berpendapat bahawa pelajar yang mempunyai asas pengetahuan sedia ada yang kukuh lebih berkemungkinan mencapai hasil pembelajaran yang lebih baik berbanding mereka yang mempunyai pengetahuan sedia ada yang terhad. Justeru, perkara ini mencadangkan bahawa pengetahuan sedia ada pelajar mempunyai peranan dalam kemahiran untuk menyelesaikan masalah.

3.0 Metodologi

Kajian ini merupakan sebuah kajian tindakan (*action research*) dalam reka bentuk eksperimen yang bertujuan untuk mengenal pasti pengalaman pengkaji dan peserta mengenai penerapan PBB dalam pengajaran karangan pendapat bagi meningkatkan kemahiran menyelesaikan masalah dan menilai para peserta kajian. Corey (1953) di dalam Cohen, Manion dan Morrison (2002) menjelaskan kajian tindakan adalah proses yang memerlukan pengamal (*practioners*) mengkaji masalah-masalah secara saintifik supaya mereka dapat menilai, memperbaiki dan mengarah proses membuat keputusan dan amalan.

Dalam menjalankan kajian ini, pengkaji menerapkan model kajian tindakan yang diadaptasi daripada Kemmis dan McTaggart (1988). Kajian yang dijalankan ini telah menggunakan dua kitaran yang lengkap bagi mengkaji penerapan PBB dalam pengajaran karangan pendapat menyelesaikan masalah.

Rajah 3. Model kajian tindakan Kemmis dan McTaggart (1988) dipetik dari Burns (2009).



3.1 Pendekatan Kajian

Kajian ini menggunakan pendekatan kualitatif dan kuantitatif. Seperti mana Muhammad Suhaimi (2021) menyatakan bahawa analisis kajian tindakan pada kebiasaannya melibatkan teknik kualitatif dan kuantitatif. Muhammad Suhaimi (2021) menjelaskan lagi bahawa perkara ini tidak dapat dielakkan kerana kajian tindakan melibatkan aspek yang berkaitan dengan sikap atau tingkah laku adalah sukar hanya dengan nombor semata-mata.

Dalam konteks kajian ini, pendekatan kualitatif dan kuantitatif digunakan untuk mengenal pasti dan perubahan tingkah laku dan perubahan dari segi markah yang diperolehi daripada sampel kajian. Dengan yang demikian, dapatan data triangulasi ini dapat menyokong hujah antara satu sama lain.

3.2 Sampel Kajian

Kajian ini telah dijalankan di salah sebuah sekolah menengah di Negara Brunei Darussalam yang terdiri daripada pelajar-pelajar Tahun 8 sebagai peserta kajian. Seramai 18 pelajar daripada sebuah kelas bertahap sederhana telah terpilih dan bersetuju untuk menjadi peserta kajian ini.

3.3 Instrumen Kajian

i. Pemerhatian dan catatan refleksi

Instrumen pemerhatian dalam kajian ini digunakan untuk memerhati apa sahaja yang berlaku sepanjang kajian dijalankan. Justeru, pengkaji telah menjalankan pemerhatian secara berstruktur yang menggunakan senarai semak. Bagi memudahkan pengkaji untuk membuat catatan refleksi, pengkaji telah menggunakan kamera untuk merakam proses pembelajaran pelajar.

ii. Kuiz (ujian prakajian dan ujian pascakajian)

Dalam kajian ini, pengkaji telah memberikan kuiz sebagai ujian prakajian sebelum pelaksanaan sesi intervensi bagi memperoleh data berkaitan dengan kemahiran menyelesaikan masalah dalam kalangan peserta kajian melalui markah. Kemudian, setelah selesai sesi pengajaran intervensi, pengkaji telah memberikan satu ujian lagi sebagai ujian pascakajian kepada peserta kajian. Kedua-dua ujian set ini menggunakan soalan-soalan yang telah digunakan dalam Peperiksaan SPE. Peserta kajian dikehendaki untuk menyenaraikan tiga idea utama terhadap soalan karangan dalam masa 15 minit.

iii. Rubrik penilaian markah

Dalam kajian ini, pengkaji menggunakan rubrik penilaian yang diadaptasi daripada rubrik penilaian Aliamat (2017) untuk menilai markah ujian prakajian dan ujian pascakajian. Rubrik penilaian ini dijadikan sebagai pengukur keupayaan pelajar untuk mengemukakan idea-idea penyelesaian masalah. Pemarkahan rubrik penilaian bagi satu idea penyelesaian masalah adalah seperti berikut:

Jadual 2. *Rubrik penilaian kajian yang diadaptasi daripada rubrik penilaian Aliamat (2017).*

0 markah	Tidak relevan Idea atau cadangan pelajar dianggap tidak menjawab soalan yang diberikan atau tidak berkaitan langsung dengan permintaan soalan.
1 markah	Konvensional Idea atau cadangan peserta bersifat biasa.
2 markah	Idea BAHARU Idea atau cadangan peserta adalah baharu, bukan konvensional dan boleh menyelesaikan sesuatu masalah.

3.4 Penganalisisan Data Kajian

i. Kuiz (Ujian Prakajian dan Ujian Pascakajian)

Data daripada kuiz, yang terdiri daripada markah ujian prakajian dan ujian pascakajian, dianalisis dengan menggunakan ujian statistik deskriptif untuk meringkaskan data. Selanjutnya, Ujian-*t* berpasangan digunakan untuk menilai perubahan dalam markah sebelum dan selepas intervensi penerapan PBB. Analisis ujian statistik ini juga dilaksanakan dengan menggunakan perisian *JASP 0.18.2.0 (Jeffreys's Amazing Statistics Program)* dan dipilih untuk memberi gambaran tentang keberkesanan strategi pengajaran yang dilaksanakan.

ii. Pemerhatian dan Catatan Refleksi

Pengkaji telah mencatat refleksi pengajaran dan pembelajaran mengikut senarai semak pemerhatian yang dijalankan. Catatan tersebut kemudian dianalisis menggunakan analisis SWOT untuk mengenal pasti kekuatan (*strengths*), kelemahan (*weaknesses*), peluang (*opportunities*) dan ancaman (*threats*) terhadap pengajaran yang dilaksanakan. Selanjutnya, pengkaji telah menganalisis hasil daripada analisis SWOT menggunakan analisis tematik bagi mengenal pasti tema-tema yang menonjol.

4.0 Dapatan Kajian Dan Perbincangan

4.1 Soalan Kajian Pertama: Adakah terdapat perbezaan min yang ketara di antara markah ujian prakajian dengan ujian pascakajian?

Analisis statistik deskriptif (rujuk Jadual 3) dan Ujian-*t* berpasangan (rujuk Jadual 4) mendedahkan terdapat peningkatan yang signifikan di antara markah ujian pascakajian ($M = 2.611$, $SD = 1.037$) dan markah ujian prakajian ($M = 1.667$, $SD = 0.594$) dan selepas pengajaran PBB dijalankan dengan nilai $t(17) = 3.449$, dan nilai $p = .003$.

Jadual 3. Rumusan Hasil Analisis Statistik Deskriptif.

Statistik Deskriptif		
	Markah Ujian Prakajian	Markah Ujian Pascakajian
<i>Valid</i>	18	18
<i>Missing</i>	0	0
<i>Mean</i>	1.667	2.611
<i>Std. Deviation</i>	0.594	1.037
<i>Minimum</i>	0.000	1.000
<i>Maximum</i>	2.000	5.000

Jadual 4. Rumusan Hasil Analisis Ujian-t berpasangan.

Ujian-t Berpasangan

Measure 1	Measure 2	t	df	p	Cohen's d	SE Cohen's d
Markah Ujian Pascakajian - Markah Ujian Prakajian		3.449	17	0.003	0.813	0.372

Dapatan kajian ini disokong oleh literatur sedia ada mengenai kemahiran menyelesaikan masalah. Antaranya seperti kajian Nebesniak (2007) yang telah mencadangkan bahawa aktiviti pembelajaran koperatif meningkatkan kemahiran menyelesaikan masalah dan berfikir kritis. Begitu juga dengan kajian daripada Gök dan Sýlay (2010) yang menyokong bahawa interaksi sosial dan sokongan daripada rakan sebaya dalam aktiviti pembelajaran koperatif meningkatkan pemahaman dan aplikasi strategi penyelesaian masalah. Dapatan-dapatan tersebut adalah selaras dengan dapatan kajian ini yang menunjukkan peningkatan kemahiran menyelesaikan masalah pelajar setelah menjalani intervensi penerapan PBB dalam pembelajaran koperatif.

Tambahan lagi, dapatan ini turut disokong dengan dapatan kajian Hassan *et al.* (2011) yang mendedahkan bahawa hasil pembelajaran yang berasaskan penyelesaian masalah telah menunjukkan perbezaan yang signifikan dalam kemahiran menyelesaikan masalah. Begitu juga dengan dapatan kajian daripada Hidayati dan Wagiran pula (2020) yang menunjukkan peningkatan terhadap kemahiran

menyelesaikan masalah dalam setiap kitaran yang dijalankan. Dapatan-dapatan tersebut sejajar dengan dapatan dalam kajian ini, yang menunjukkan intervensi pengajaran penerapan PBB dalam aktiviti pembelajaran koperatif telah membawa kepada peningkatan yang signifikan dalam markah ujian pascakajian seperti mana yang telah dibuktikan melalui analisis Ujian-*t* berpasangan.

Selain itu, kesan positif terhadap hasil pembelajaran pelajar ini boleh dikaitkan dengan pendekatan penyoalan yang menekankan kemahiran berfikir aras tinggi dan pengaruh pengetahuan sedia ada. Seperti mana yang telah dijelaskan dalam kajian-kajian lepas seperti Rashid dan Qaisar (2016), Nappi (2017) dan, Novitaningrum dan Lestari (2020) yang menegaskan teknik penyoalan mempunyai peranan yang penting dalam hasil pembelajaran pelajar. Manakala pengetahuan sedia ada pelajar ini juga mempunyai pengaruh dalam hasil pembelajaran seperti yang dinyatakan oleh Diaz (2017) dan Zambrano *et al.* (2019).

4.2 Soalan Kajian Kedua: *Dengan mengenal pasti keberkesanan pengajaran PBB, bagaimanakah pelaksanaan yang boleh guru cadangkan dalam pengajaran PBB?*

Cadangan 1: Induksi Set yang Berkesan

Analisis SWOT dan tematik yang dilakukan telah menemukan kepentingan untuk melaksanakan induksi set yang sesuai dengan pengalaman pelajar, bagi menggalakkan kemahiran berfikir aras tinggi. Menurut Musa dan Othman (2021) induksi set merupakan tindakan awal yang penting digunakan oleh guru untuk memulakan pengajaran dan pembelajaran bilik darjah yang berkesan. Guru boleh memulakan pengajaran PBB dengan induksi set yang menarik dan relevan, mencetuskan rasa ingin tahu dan minat pelajar dalam topik atau masalah yang akan mereka ceburi. Dengan mencetuskan rasa ingin tahu dan minat pelajar dari awal, guru boleh meningkatkan motivasi pelajar dan penglibatan aktif dalam aktiviti penyelesaian masalah (Singh & Manjaly, 2022).

Selain itu, induksi set kreatif mempunyai pengaruh yang signifikan dalam menarik perhatian dan menimbulkan tindak balas positif daripada pelajar terhadap arahan guru (Sandy *et al.*, 2021). Oleh itu, guru boleh mendapatkan inspirasi daripada senario kehidupan sebenar, peristiwa semasa, atau pengalaman peribadi pelajar semasa membangunkan induksi set untuk pengajaran PBB. Menurut Kyu (2018) menjadikan kandungan pelajaran relevan dengan kehidupan pelajar dengan memasukkan contoh kehidupan sebenar adalah salah satu strategi menggalakkan pelajar menjadi peserta aktif dalam proses pembelajaran. Pendekatan ini boleh memberi inspirasi kepada penglibatan pelajar dengan bahan dan menggalakkan mereka bertanya lebih banyak soalan, memberikan pemahaman yang lebih mendalam tentang perkara tersebut.

Cadangan 2: Penekanan pada Kemahiran Berfikir Aras Tinggi

Aktiviti pembelajaran koperatif menawarkan platform yang ideal untuk membangunkan kemahiran berfikir aras tinggi dalam kalangan pelajar. Dengan melibatkan diri dalam tugas penyelesaian masalah secara koperatif, pelajar digalakkan untuk menganalisis maklumat secara kritis, berfikir secara kreatif, dan menilai perspektif yang berbeza (Hassan *et al.*, 2011; Kaddoura, 2013). Pemikiran jenis ini melangkaui aras mengingat dan memahami semata-mata, membolehkan pelajar memperoleh pemahaman yang lebih mendalam tentang konsep dan mengaplikasikannya dalam situasi kehidupan sebenar.

Sementara itu, teknik penyoalan yang berkesan dapat menggalakkan penglibatan pelajar secara aktif dalam proses pembelajaran (Nappi, 2017). Oleh itu, adalah penting bagi guru untuk meningkatkan kemahiran berfikir aras tinggi melalui teknik penyoalan dan penglibatan pelajar yang aktif. Seperti mana menurut Retnawati *et al.* (2018) penggunaan kemahiran berfikir aras tinggi boleh merangsang pemikiran kritis dan menyelesaikan masalah. Salah satu strategi yang dapat meningkatkan pemikiran aras tinggi pelajar adalah dengan menggabungkan teknik penyoalan strategik yang mendorong pelajar untuk mewajarkan penaaakuan mereka, menilai bukti, dan mempertimbangkan penyelesaian alternatif (Nappi, 2017; Afifah & Retnawati, 2019). Justeru, ini menunjukkan bahawa soalan-soalan utama semi berstruktur berpanduan daripada kata kunci-kata kunci PBB (rujuk Jadual 1) yang berkesan boleh merangsang pemikiran aras tinggi dan meningkatkan kemahiran menyelesaikan masalah.

Selain itu, guru juga boleh membimbing pelajar melalui soalan yang bersifat provokatif untuk menggalakkan pemikiran kritis dan kemahiran penghujahan, yang membawa kepada penglibatan yang lebih mendalam dengan proses penyelesaian masalah. Seperti mana menurut kajian yang dilakukan oleh Rashid dan Qaisar (2016) telah menunjukkan bahawa soalan yang bersifat provokatif mendorong pelajar untuk mengambil bahagian secara aktif dalam perbincangan bilik darjah. Perkara ini juga turut disokong dengan dapatan kajian Novitaningrum dan Lestari (2020) yang menerangkan strategi penyoalan provokatif telah menggalakkan pelajar berfikir secara kritis dalam bilik darjah. Ini menunjukkan bahawa penyoalan provokatif boleh menggalakkan pemikiran kritis secara berkesan dan penyertaan aktif dalam perbincangan penyelesaian masalah.

Cadangan 3: Pemodelan, Perancangan dan Maklum Balas Segera yang Berkesan

Pemodelan PBB, sama ada dilakukan oleh guru atau pelajar yang lebih berkebolehan, adalah selaras dengan teori Perantisan Kognitif daripada Collins *et al.* (1991), yang menekankan kaedah seperti pemodelan dan perancangan dalam proses pembelajaran. Teori ini mencadangkan bahawa pemodelan atau demonstrasi yang berkesan dapat memudahkan dan meningkatkan pemahaman pelajar. Tambahan lagi,

perancangan daripada guru atau pelajar yang lebih berkebolehan dapat memantapkan lagi pengaplikasian pelajar-pelajar dalam menilai cadangan penyelesaian masalah menggunakan PBB.

Sementara itu, memberikan maklum balas dengan segera melalui hasil perbincangan kumpulan membolehkan pelajar untuk menyemak semula cadangan penyelesaian yang diberikan, memperbaikinya dan meningkatkan pemahaman mereka sebelum tamat pelajaran. Perkara ini dapat menyumbang kepada kemahiran berfikir aras tinggi dan pembangunan kemahiran menyelesaikan masalah mereka seperti yang dicadangkan oleh Indriyana dan Kuswandono (2019) yang mengatakan bahawa maklum balas daripada guru kepada pelajar adalah salah satu strategi yang boleh digunakan untuk membangunkan kemahiran berfikir aras tinggi dan pemikiran kritis dalam bilik darjah.

Cadangan 4: Penggunaan Bahan Pembelajaran Mengikut Kesesuaian Tahap Pelajar

Satu lagi strategi pelaksanaan yang boleh dicadangkan dalam pengajaran PBB adalah dengan menggunakan bahan pengajaran dan pembelajaran yang disesuaikan mengikut tahap pelajar. Guru dicadangkan untuk menilai keperluan individu pelajar sendiri agar dapat menyediakan bahan yang sesuai untuk menyokong pembelajaran mereka dengan mengambil kira pengetahuan dan pemahaman sedia ada mereka. Seperti mana menurut Diaz (2017) yang mengatakan bahawa pengetahuan sedia ada adalah aspek yang penting dalam pembelajaran. Ini menunjukkan bahawa guru bukan sahaja harus bergantung kepada bahan pembelajaran seperti buku teks, tetapi juga harus mempertimbangkan pengetahuan dan pemahaman sedia ada pelajar semasa memilih bahan pengajaran dan pembelajaran.

Bahan pengajaran dan pembelajaran ini bolehlah terdiri daripada bahan bacaan dan jenis soalan atau tugas berkaitan dengan senario dunia sebenar yang dapat menghubungkan dengan pengetahuan sedia ada pelajar. Dengan menggunakan bahan pengajaran dan pembelajaran yang relevan dan bersesuaian dengan tahap pelajar, guru boleh membantu pelajar dalam memahami tugas menyelesaikan masalah yang diberikan, menggalakkan kemahiran berfikir aras tinggi, dan menggalakkan kerjasama yang lebih berkesan. Perkara ini dipersetujui oleh Zambrano *et al.* (2019) yang mencadangkan bahawa pelajar yang mempunyai pengetahuan sedia ada dalam sesuatu perkara lebih cenderung untuk mencapai hasil pembelajaran yang lebih baik berbanding pelajar yang mempunyai pengetahuan terhad dalam sesuatu perkara.

5.0 Penutup

Pelaksanaan pengajaran PBB dalam kajian ini berhasil meningkatkan kemahiran menyelesaikan masalah dalam kalangan peserta seperti yang dibuktikan oleh peningkatan ketara secara statistik dalam markah ujian pascakajian setelah intervensi penerapan PBB. Kajian ini juga menekankan peranan penting guru dalam menjayakan pengajaran PBB. Strategi-strategi pelaksanaan pengajaran PBB yang

dicadangkan termasuk induksi set yang berkesan dan penekanan pada kemahiran berfikir aras tinggi. Selain itu, kepentingan sokongan yang didorong oleh guru seperti pemodelan, perancangan, dan maklum balas segera yang berkesan, dan penggunaan bahan pembelajaran mengikut tahap kesesuaian tahap pelajar telah ditekankan untuk membangunkan kemahiran menyelesaikan masalah.

Sementara itu, secara teori, kajian ini dapat menyokong Teori Perantisan Kognitif (Collins *et al.*, 1991), yang menekankan kepentingan untuk memperlihatkan proses pemikiran iaitu seperti pemodelan dan demonstrasi. Peningkatan markah peserta kajian yang ketara seperti yang dibuktikan oleh analisis Ujian-*t* berpasangan mendedahkan keberkesanan PBB dalam pembelajaran karangan pendapat yang berasaskan menyelesaikan masalah.

Dari sudut praktikal pula, kesan positif penerapan PBB terhadap hasil pembelajaran dan penglibatan peserta kajian mencadangkan bahawa penerapan PBB sebagai salah satu strategi dalam pengajaran karangan pendapat yang berasaskan menyelesaikan masalah harus dipertimbangkan oleh para pendidik. Dapatan kajian ini juga menunjukkan bahawa penerapan PBB dalam aktiviti pembelajaran koperatif boleh menggalakkan pembangunan kemahiran-kemahiran sosial seperti kemahiran berkomunikasi dan kemahiran bekerjasama.

Secara kesimpulan, kajian tindakan ini telah berjaya mencapai objektifnya iaitu memberi gambaran tentang pengalaman guru sebagai pengkaji dalam pengajaran PBB, pengalaman dan persepsi peserta terhadap pembelajaran PBB melalui amalan refleksi yang dilakukan secara berterusan. Walaupun kajian ini telah menunjukkan keberkesanan penerapan PBB dalam meningkatkan kemahiran menyelesaikan masalah, dapatan kajian ini telah membuka ruang untuk banyak lagi kajian akan datang mengenai PBB. Justeru pengkaji menyarankan beberapa cadangan untuk kajian lanjutan mengenai penerapan pengajaran PBB berdasarkan daripada dapatan kajian ini. Dengan adanya kajian lanjutan ini, diharapkan agar dapat memberi manfaat kepada pelbagai pihak termasuk para pelajar dan juga guru-guru. Beberapa cadangan untuk kajian lanjut adalah seperti berikut:

- i. Mencadangkan supaya kajian-kajian yang akan datang juga dapat meneroka persepsi dan pandangan daripada guru-guru mengenai PBB dalam pengajaran dan pembelajaran.
- ii. Mencadangkan agar kajian-kajian yang akan datang agar dapat meneroka potensi penerapan PBB terhadap hasil pembelajaran dalam topik-topik yang berlainan daripada aspek penulisan karangan seperti fahaman, rumusan dan lain-lain lagi.
- iii. Mencadangkan agar kajian mengenai PBB ini juga dilaksanakan di luar subjek Bahasa Melayu dalam topik-topik yang tertentu.

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Green Education in School Improvement Plan (SIP): Leveraging Opportunities & Exploring Possibilities

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ABSTRACT

Green Education plays a crucial role in promoting sustainable development by equipping individuals with the knowledge, skills, values, and attitudes necessary to address environmental challenges and work towards a more sustainable future, therefore supporting Sustainable Developmental Goals (SDG) 2030. By exposing students to the agenda of a sustainable future as early as primary school, its relevance can be reinforced and materialized, especially when there is a proper and focused emphasis on it. This paper aims to highlight the importance of incorporating the Green Education agenda into an existing tool, specifically the School Improvement Plan (SIP). This case study involves all schools in Cluster 4 (27 schools), ranging from primary to secondary and pre-university institutes. These schools have made Green Education their Focus Area 3 in SIP. By utilizing Deming's PDCA Cycle, conducted by the Cluster officers on scheduled dates throughout the year, it has been demonstrated that using SIP as a platform for Green Education not only strengthens the SDGs but it also improves schools' progress in various aspects in their Whole-School Evaluation (WSE) and selected aspects of Teacher Performance Appraisal (TPA). Three schools were selected to further substantiate its success and highlight the significance of the findings. This paper provides an evidence-based account of the green initiatives incorporated into the SIP in Cluster 4 schools, enabling further exploration on the possibilities for integrating Green Education with other existing frameworks and guidelines, and leverage it with additional tools.

Keywords: Green Education; School Improvement Plan; Whole-School Evaluation

1. INTRODUCTION:

Green Education in School Improvement Plan (SIP) might sound odd to many school communities and educators, as it appears to deviate from the common practice of initiating academic-related support programs aimed at improving various aspects of the Whole School Evaluation (WSE), including enhancing students' learning. Little is known on how other non-academic initiatives can promote school progress in terms of improving both learning and teaching, as systematic measurement of these efforts is far from standardized. This may imply that the many initiatives and programs undertaken by schools such as green education, students' development, school health, safety and environment and many more may become mere school enrichment routines that have obscure or no measure on students' learning, apart from meeting the respective intended expectations. Therefore, the importance of employing proper and established tools in measuring the impacts of those initiatives and programs on students' is crucial to further expedite school progress (Patton, 2008; Sagor, 2000).

To ensure school programs are impactful with regards to promoting progress in students' learning, Cluster 4 has taken pioneering initiative to select Green Education as one of the focus areas in SIP. The guidebook on how to properly conduct green-school initiatives was published by the Science, Technology, Environment, Partnership (STEP) Centre, Ministry of Education in 2015 and has been widely socialized to schools since then. The guidebook contains aspects of green initiatives, step-by-step procedures for executing projects, tools to assess success, sample worksheets for conducting environmental review and the four criteria for becoming a green-school. This guidebook serves as a reference for Cluster 4 schools to implement various Green Education initiatives across three major areas: 3R (Reduce, Reuse, Recycle), green spaces/eco gardens, and energy conservation. Combined with the goal of effectively monitoring sustainable Green Education initiatives and improving school-wide performance in several aspects of the WSE, the use of SIP as an established framework has proven to be relevant. This approach not only strengthens Green Education, improves selected WSE aspects, and sustains the initiative, but more importantly, it also positively impacts students' learning, which is one of the main aims of this study.

2. PURPOSE AND SIGNIFICANCE OF STUDY

While the purpose of incorporating Green Education into the SIP to improve selected aspects of the WSE is widely understood by educators and policymakers in the country, the mechanism by which it directly impacts students' learning requires further, extensive research. As such, this study is limited to two primary aims: 1) determining whether Green Education in the SIP can enhance students' learning, and 2) exploring how the initiative can be made more sustainable in schools.

Therefore, the study also addresses the following related inquiries:

- i. Is it possible to put Green Education as one of the focus areas in SIP?
- ii. How to measure its success?
- iii. How it can impact students' learning?
- iv. Can the initiative lead to other students' learning outcomes?
- v. Is there a prospect for other non-academic initiatives to have similar outcomes?

These inquiries will provide insights into how school-level initiatives can be made more impactful on students' learning by employing a proper and systematic tool, such as the SIP. Additionally, they will explore the potential for integrating the initiative with other existing frameworks and guidelines. The three case studies from Cluster 4 schools – Sekolah Menengah Katok, Sekolah Rendah Sinaut, and Sekolah Rendah Pengkalan Batu – demonstrate successful attempts to achieve the two stated aims. The findings will therefore hold significant value for schools, helping them adopt a systematic approach to monitoring, executing, reviewing, and assessing initiatives that enhance students' learning. In this context, the SIP and its Deming Cycle of Plan, Do, Check, Act (PDCA) are particularly relevant.

1.1 Originality of the Research

The paper attempts to investigate how school-level initiatives can be made more sustainable, which for this case, the green education projects. With the proper use of tools such as those found in SIP, the investigation will lead us to useful insights on the effectiveness of such a tool used for other school initiatives, interventions and projects to achieve success. Furthermore, the study looks at other aspects of students' learning outcomes apart from the conventional improvement in grades or marks to the one that spans over to students' six competencies, skills and values. In measuring these learning outcomes the study thus contributes to the development of rubrics that relate to the environmental awareness 6Cs (see section 3.3).

2. DESIGN AND METHODOLOGY

This section provides a profile of Cluster 4 schools for contextualization, including details on SIP, the PDCA cycle, a survey on students' 6Cs of the green initiative, and the focus areas related to Green Education. The information and data presented will serve as the highlight of this study, while the case studies of the three selected schools—Sekolah Menengah Katok, Sekolah Rendah Sinaut, and Sekolah Rendah Pengkalan Batu—will further illustrate the success of this initiative at the school level.

2.1 Cluster 4 Schools Profile

Cluster 4 comprises of 27 schools: 1 sixth form; 5 secondary schools; and 21 primary schools. With a total of 9077 students (UPDT, 2024), it has 1191 teachers (Cluster 4 office, 2024) under the school leadership of 6 principals together with 18 deputy principals, 21 headmasters and mistresses assisted by 14 assistant headmasters and mistresses. All these schools are under the headship of 1 Cluster head and assisted by 6 Cluster officers (working group officers). Its geographical distribution covers Brunei/Muara and Tutong Districts that includes areas along Jalan Tutong from Kampong Bunut to Kampong Sinaut, Jalan Mulaut, Jalan Bebuloh/Batang Mitus and Jalan Lamunin up to Kampong Kiudang.

2.2 SIP and PDCA as an Evaluation Process

SIP is an effective tool for schools to identify and address their challenges. It has been mentioned in several studies, for instance, Faridah *et al* (2023) states that SIP plays a significant role in driving teachers to implement students' self-assessment with familiarity and confidence. Additionally, Norazlinah (2023) mentions that SIP is a necessary initiative for schools to respond to WSE in order to make progress from time to time, as indicated by an increase in WSE bandings. SIP is a strategic tool used by schools to identify and address their challenges in a systematic way. It provides a framework for aligning educational objectives with a clear plan of action and progress targets, implemented across the three school terms. The PDCA cycle, a continuous improvement framework, serves as the monitoring tool. It is designed to enhance the quality and efficiency of processes and outcomes (Deming, 1986; Ishikawa, 1985), while fostering a culture of continuous improvement (Moen and Norman, 2016).

With a mission to support schools, the monitoring of SIP has been one of the primary responsibilities of the Cluster 4 office since its inception in 2017. Initially guided by the Department of School Inspectorate (DSI) during its early years, Cluster 4 officers have since adopted the PDCA cycle to systematically monitor and encourage schools to conduct self-evaluations. Figure 1 illustrates how the Cluster 4 office supports schools during SIP visits.

Figure 1: SIP Support Visit Cycle Cluster 4 2024



Source: Cluster 4 Office, 2024

SIP Cycle Visit 1 is typically conducted between January and February, Cycle Visit 2 between May and June, and Cycle Visit 3 between September and October. The overall results and related analyses are then shared with school leaders in November.

Similarly, the Green Education initiatives are evaluated each term by the Cluster head and the Cluster officers, involving three review cycles. The first visit occurred in January 2024 to assess the schools' SIP documents, focusing on green school themes, rationales, whole school improvement aspects, objectives, progress targets, and action plans. The second review took place in May, where the focus was on examining the schools' action plans and implementation processes. Finally, the third visit in September looked into the schools' evaluation of results and processes, assessing how they plan actions based on collected feedback. The evaluation results will be matched with the assessment of the select aspects of WSE, and this will be discussed in the next section.

2.3 Survey on Students' 6Cs

A survey on students' levels of 6Cs is conducted to assess how Green Education impacts their competencies in the following areas:

- a. Character (attitude to care for the environment)
- b. Citizenship (helping the environment)
- c. Collaboration (working with others on Green Education initiatives)
- d. Communication (sharing green ideas)
- e. Creativity (coming up with new green ideas)
- f. Critical thinking (solving problems in Green Education initiatives)

A total of 1087 students from all Cluster 4 schools who are involved in school's Green Education initiative participate in the survey. Guided by their teachers, they self-evaluate their level of competencies on the 6 areas above using a 4-level scale of competencies: beginning; developing; proficient; and advanced (Gul, M., 2020; Lai, M & Hwang, G.J., 2016). The assessment of students' 6Cs using this rubric (Appendix 1) provides indication on their level of learning (Kivunja, C., 2014; Gul, M., 2019).

2.4 Focus Areas (FA)

The statement of focus areas is crucial in any school's SIP, as it serves as the foundational element of the school strategy. It helps create a structured approach for achieving the school's objectives. Typically, each school identifies 2-3 focus areas (FAs) centered around academic-related initiatives, interventions, and programs. These focus areas are based on the internal self-evaluation of the WSE conducted the previous year, with aspects needing improvement prioritized accordingly. For Cluster 4 schools, the first two FAs follow this conventional approach; however, the third FA is centered on current initiatives promoting environmental awareness. Table 1 below shows the percentage of green initiative themes chosen by schools for their FA3.

Table 1 - Percentage of themes chosen by Cluster 4 schools

Theme	% of Themes Chosen
Green school spaces; Eco-garden in my school	58.06%
waste management (3Rs)	22.58%
Health & hygiene - healthy & clean school	12.90%
Energy (reducing energy consumption)	6.45%
Water; reducing water consumption	0%

Source: Cluster 4 Office, 2024

As seen from Table 1, the most popular theme is "Green school spaces; Eco-garden in my school," with 58.06%. This indicates a strong interest in enhancing the school's environment and promoting sustainability through green initiatives. "Waste management (3Rs)" follows as the second most chosen theme at 22.58% that reflects a significant commitment to sustainability practices among schools, particularly in reducing, reusing, and recycling waste. The theme "Health & hygiene - healthy & clean school" scores 12.90% of schools' choice that highlights a recognition of the importance of a clean and healthy learning environment. "Energy (reducing energy consumption)", at 6.45% chosen by schools, suggests a less prioritised area, which may need further promotion and support. Conversely, the theme "Water; reducing water consumption" received no selection, indicating a lack of focus on this critical resource conservation theme, highlighting a potential gap in awareness or urgency. The data suggests opportunities for increasing engagement in themes related to energy and water conservation. Schools may benefit from additional resources or initiatives to encourage focus on these important areas.

Overall, the analysis reveals a strong commitment to enhancing the school's environment through green initiatives while also pointing to areas where further attention and education could foster a more comprehensive approach to sustainability.

3. FINDINGS AND DISCUSSION

The completion of three SIP visit cycles, conducted from January to September 2024 leads to the findings that are divided into three categories: Evidence of Progress for PDCA; WSE aspects; and Students' 6Cs.

3.1 Evidence of Progress for PDCA

Table 2 – Percentage number of schools with different color-coded status for PDCA

Status	Plan	Do	Check	Act
	Reviewed and validated in May 2024		Reviewed and validated in September 2024	
Green	88.88%	81.48%	100%	100%
Amber Green	11.11%	3.7%		
Amber Red		11.11%		
Red		3.7%		

Source: Cluster 4 Office, 2024

Table 2 shows that the "Check" and "Act" phases show 100% validation, indicating all reviewed initiatives successfully met evaluation criteria, demonstrating strong alignment with goals. While the "Plan" phase has a high success rate of 88.88%, suggesting most plans are well-prepared and effective. However, the presence of 11.11% in "Amber Green" indicates some plans may need further refinement. The "Do" phase however, shows a drop to 81.48%, which highlights potential challenges in implementation. The emergence of 11.11% in "Amber Red" suggests that a portion of initiatives faced significant issues during execution. The data points to a need for focused support in the "Do" phase to improve execution and address the Amber Red initiatives, which may require strategic adjustments. The high validation in the "Check" and "Act" phases indicates effective monitoring and responsiveness to outcomes, providing a strong foundation for continuous improvement. This analysis suggests that while planning and evaluation are strong, more attention should be given to enhancing the implementation phase for optimal outcomes.

3.2 WSE Aspects

As for the WSE aspects, Table 3 manifests promising progress in terms of banding improvement.

Table 3 - The commonest aspects chosen by schools to improve their WSE

Aspects		Number of schools showing Improvement in banding	Number of schools showing maintained banding (at least band 3)
1.1.2 Action plans and implementations	10	6	4
1.3.2 Collaborative culture	12	7	5
1.4.1 Internal Programme Review	11	7	4
2.1.1 Student Learning Experience	16	5	11
2.1.2 Student Self Efficiency	11	2	9
2.1.3 Student Engagement	22	8	14
2.1.4 Students' Knowledge & Skills	18	9	9
2.1.5 Students' Creativity & Innovativeness	11	3	8
2.1.8 Student's Work quality	7	2	5
3.1.1 Learning Environment	13	4	9
3.1.2 Work Environment	7	2	5
3.2.1 Parents Guardian Rapport	7	0	7
3.2.3 Rapport with the wider School Community	7	3	3
3.3.1 Health and Safety	7	2	5

Source: Cluster 4 Office, 2024

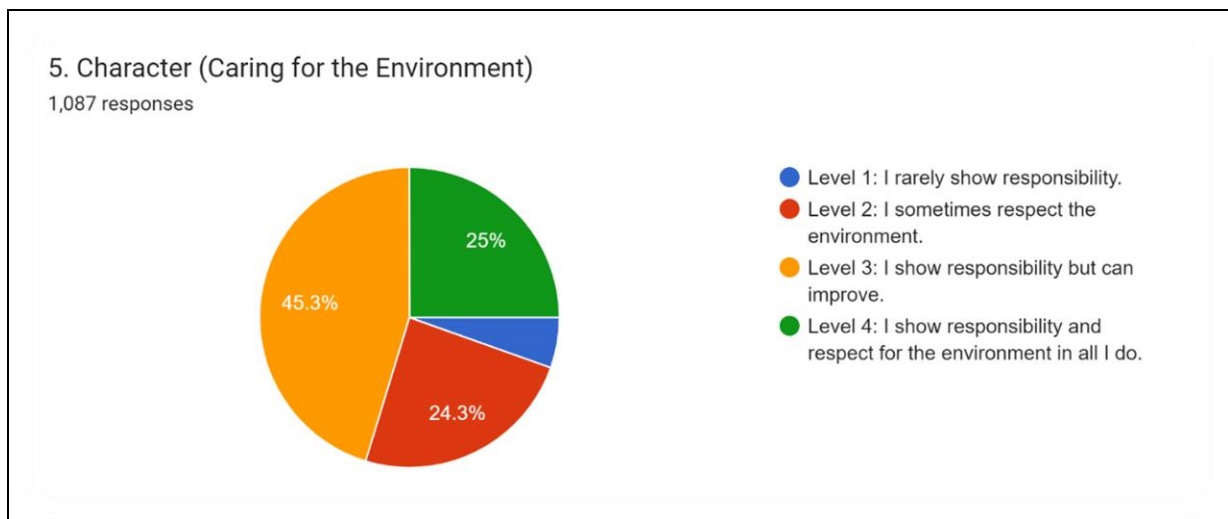
As shown in Table 3, for the overall participation, the aspect with the most schools involved is "Student Engagement" (22 schools), indicating a strong focus on this area. Conversely, "Parents Guardian Rapport" had no improvements, suggesting it may require urgent attention. In terms of Improvement rates, the data indicates high rates for "Action Plans and Implementations" (60% improved) and "Collaborative Culture" (58.3% improved), while "Student Self Efficiency" (18.2% improved) and "Student's Work Quality" (28.6% improved) exhibit low rates thus highlighting challenges in these areas. The data also reveals that the aspect "Student Learning Experience" had 11 schools maintaining their status with 6 showing improvement whereas "Parents Guardian Rapport" had all schools maintaining, indicating a lack of progress in improvement. For aspects like 'Students' Knowledge & Skills,' there is a 50% improvement and 50% maintenance, indicating stability but also highlighting room for growth. Table 2 also recommends focusing on enhancing 'Student Self-Efficacy' and 'Parent-Guardian Rapport' through targeted initiatives. Additionally, leveraging successful strategies from higher-performing areas could help improve those that are lagging.

This analysis underscores both strengths and areas that need attention, providing valuable guidance for future strategic planning aimed at improvements.

4.3 Students' 6Cs

In assessing students' levels of 21st century skills, the 6Cs, survey results reveal the following findings.

Figure 2 – Levels scored for Character competency

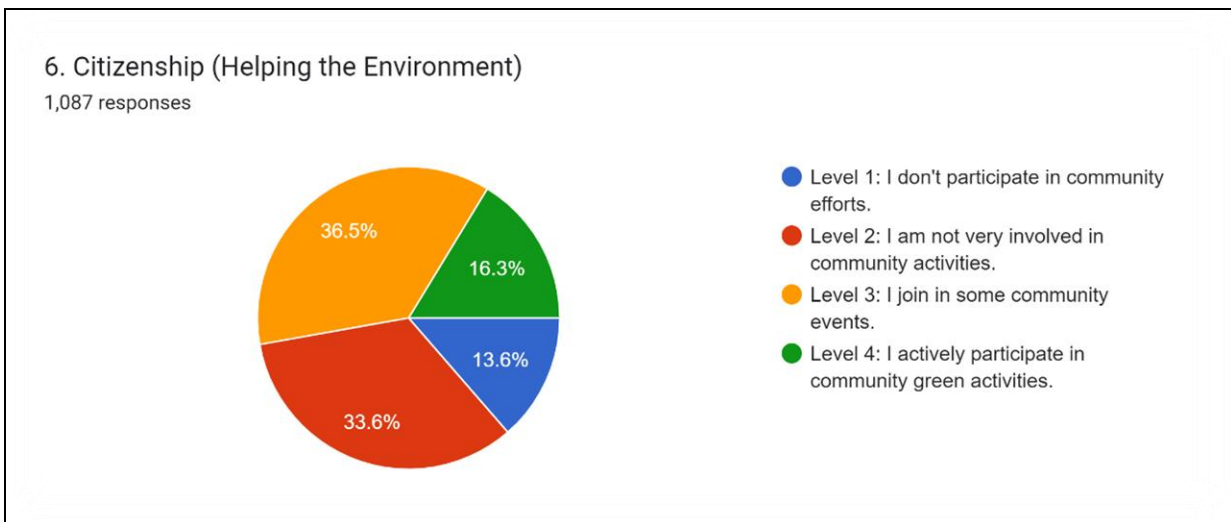


Source: Cluster 4 Office, 2024

In the Character (Caring for the Environment) section, the most chosen level is "Level 3: I show responsibility but can improve.", with 492 selections. This suggests that while a significant number of students demonstrate responsibility toward caring for the environment, they recognize that there is room for improvement in their actions.

This level reflects a good baseline of environmental awareness and responsibility among the students. However, it also highlights the potential to further nurture their commitment and consistency in environmental practices. Schools could build on this by implementing more hands-on environmental activities, such as eco-friendly projects or sustainability challenges, to help students transition from awareness to more proactive and responsible behavior.

Figure 3 – Levels scored for “Citizenship” competency

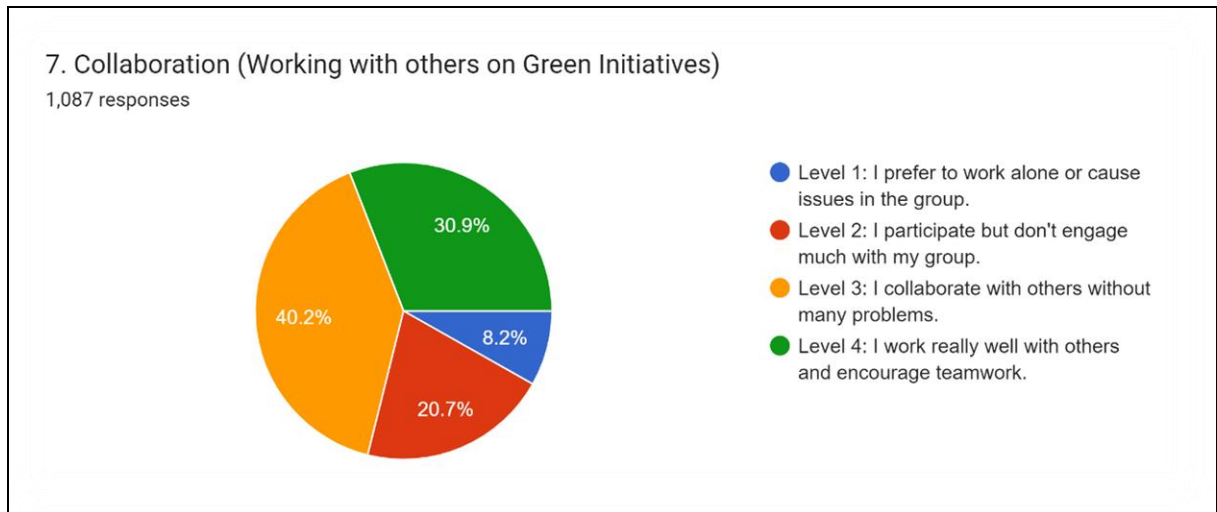


Source: Cluster 4 Office, 2024

In the Citizenship (Helping the Environment) section, the most chosen level is "Level 3: I join in some community events.", with 396 selections. This suggests that a significant portion of the students are somewhat involved in environmental initiatives but might not fully engage in a broader range of activities beyond occasional participation in community events.

This level indicates a moderate engagement, with potential for encouraging more consistent and active involvement in environmental efforts. Schools could focus on promoting more community-driven environmental projects to foster deeper participation.

Figure 4 – Levels scored by “Collaboration” competency



Source: Cluster 4 Office, 2024

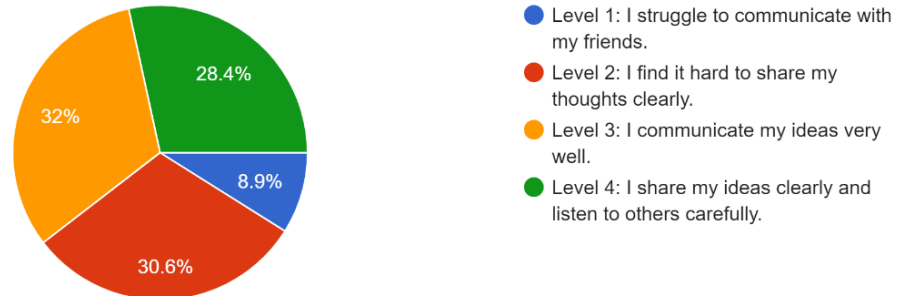
In the Collaboration (Working with others on Green Initiatives) section, the most chosen level is "Level 3: I collaborate with others without many problems.", with 437 selections. This indicates that most students are comfortable working with others and can collaborate effectively on green initiatives, though they may not always be deeply engaged or face significant challenges in doing so.

The fact that this level is the most chosen suggests a solid foundation for teamwork, with students generally able to participate in group activities. However, there may still be opportunities to strengthen collaboration by encouraging deeper engagement, leadership roles, or more complex team projects.

Figure 5 – Levels scored for “Communication” competency

8. Communication (Sharing Green Ideas)

1,087 responses



Source: Cluster 4 Office, 2024

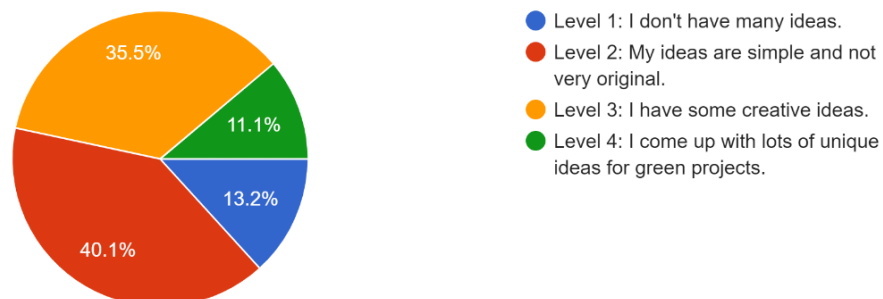
In the Communication (Sharing Green Ideas) section, the most chosen level is "Level 3: I communicate my ideas very well.", with 348 selections. This suggests that a large number of students feel confident in expressing their thoughts and sharing ideas related to green initiatives. They are likely able to articulate their ideas effectively within group discussions or presentations.

This is a positive sign, indicating that students are not only participating but are also able to contribute meaningfully by sharing their green ideas. However, there may still be room to improve the depth and clarity of communication, especially for those not at this level, to ensure that all students can effectively participate in discussions about environmental issues.

Figure 6 – Levels scored for “Creativity” competency

9. Creativity (Coming Up with New Green Ideas)

1,087 responses

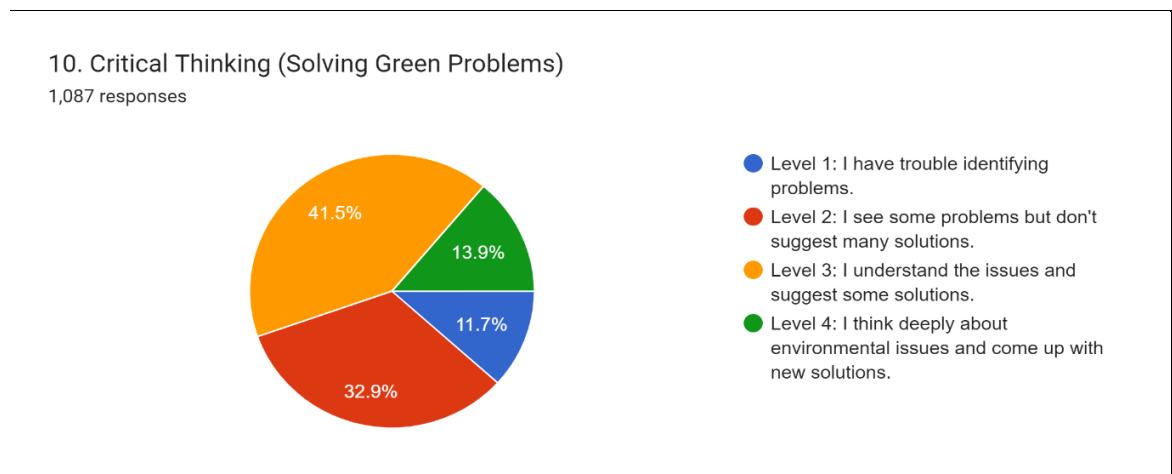


Source: Cluster 4 Office, 2024

In the Creativity (Coming Up With New Green Ideas) section, the most chosen level is "Level 2: My ideas are simple and not very original.", with 436 selections. This indicates that while students are generating ideas, most of them tend to be basic or lack significant innovation. It suggests that there is a general understanding of green initiatives, but the ability to think outside the box and propose more creative, original solutions is not as strong.

This presents an opportunity for improvement in fostering creativity. Schools might consider incorporating activities that challenge students to think more critically and innovatively, perhaps through brainstorming sessions, competitions, or exposure to novel environmental solutions.

Figure 7 – Levels scored for “Critical Thinking” competency



Source: Cluster 4 Office, 2024

In the Critical Thinking (Solving Green Problems) section, the most chosen level is "Level 3: I understand the issues and suggest some solutions.", with 450 selections. This indicates that many students have a good grasp of environmental problems and are capable of identifying solutions, although these solutions may not always be comprehensive or deeply thought out.

The data shows that students are actively engaging in problem-solving but could benefit from deeper analytical skills to propose more effective or innovative solutions. Encouraging critical discussions, case studies, and problem-based learning activities could help sharpen their ability to not only recognize issues but also come up with more impactful and sustainable solutions.

4.4 Practical and Social Implications

Green Education initiatives have several practical and social implications that can significantly impact the daily operations and environment of schools. For instance, incorporating sustainability topics into the curriculum can further put weight on the importance of creating a generation with wise green character and mentality besides a mere enrichment of students' learning experience. Furthermore, getting students involved in outdoor green activities can provide hands-on learning opportunities and fosters a connection with nature and enhancing their 6Cs. Most importantly, working together with the communities can foster collaboration between schools, families and local organizations that can strengthen community bonds and encourage collective responsibility for environmental issues. This kind of engagement and bond can further provide resources, funding and expertise for green initiatives so as enabling teachers incorporate these concepts into their teaching and school management. The case of Sekolah Menengah Katok below demonstrates such an opportunity.

4.5 Recommendations for Further Studies

As the purpose of this paper is limited to only address two major aspects: 1) how to make any school-level initiative sustainable, as exemplified by the Green Education programs; 2) how Green Education initiative promotes students' learning, this provides opportunities for more future studies to be made, especially in the following areas:

1. For the term 'Green Education', schools should also embark on other green initiatives such as energy and water conservation. This will make a better green character in students, the investigation of which, in relation to their impacts on students' learning can be made more inclusive and conclusive.
2. Since this study is beset by a temporal limitation of just one ten-months cycle, the term 'sustainability' rendered to Green Education initiative may be misleading. Therefore, continuous observation and study should be made for at least three ten-months cycles, the evaluation of which will become more reliable.
3. The opportunity to see the integration of Green Education initiative with other existing frameworks such as STEAM Education and Skills, Financial Literacy and Digital Competency, to name a few, is worth investigating, especially in areas that enhance students' 6Cs, skills and values as well as other learning outcomes.

5 CASE STUDIES

The rationale for selecting the three schools is their representation of three distinct themes in Green Education initiatives: green school space, waste management, and eco-garden. Additionally, these schools are located in three different areas—national housing estates, rural regions, and suburban settings—encompassing diverse socio-economic backgrounds. Furthermore, they represent two levels of education: primary and secondary. On top of this, the three select schools demonstrate a success story for their attempts to integrate green education initiatives in their SIP for the year 2024.

5.4 Sekolah Menengah Katok (SMK)

With FA3, 'to inculcate the values and 6Cs in Science, Technology, Environment, Art and Mathematics (STEAM) through Green Education among our Year 7 students', the SIP 2024 for Sekolah Menengah Katok focuses on inculcating the 6Cs (Character, Citizenship, Collaboration, Communication, Creativity, Critical Thinking) through Green education.

The project aligns with Brunei's Vision 2035 and global Sustainable Development Goals (SDGs), particularly SDG 11 (sustainable cities) and SDG 12 (sustainable consumption). The initiative focuses on two main themes: Waste Management and Green School Spaces.

With the mission to engage students and the school community in hands-on sustainability activities, the initiative prepares students to become socially responsible and future-ready individuals.

FA3 targets the integration of STEAM and Green Education to further strengthen the students' 6Cs with two main objectives as follows:

1. For waste management initiative, SMK aims to fill three drums with used cooking oil by the end of Term 3, for the promotion of waste reduction and environmental stewardship.
2. For the beautification of the school compound, SMK aims to implement activities that utilize reused materials, promoting sustainability, creativity, and community involvement.

The project is a collaboration between students, teachers, parents, and involve the partnership of other stakeholders. This bears fruitful contribution towards the school's sustainability goals in promoting a culture of environmental responsibility. The collaboration with external organizations like STEP Centre MOE and Enevo Sdn. Bhd. further enhances the students' learning experience. This partnership enables students to interact with professionals in environmental fields, thus broadening their understanding and signifies their commitment to sustainability.

The SIP FA3 positively improves the IWSE bands and teachers' performance in TPA frameworks in the following ways:

1. Under Leadership and Management (Domain 1), SMK's leadership team creates a clear and actionable SIP plan, that successfully involves all relevant school personnel, ensuring coordinated and effective program execution.
2. Under Learning and Teaching (Domain 2), the projects enhance students' engagement and creativity. For example, the activities that involve students designing posters and their participation in recycling activities enable them to relate learning to real-world situation.
3. Under Ethos and Environment (Domain 3), the Green Education initiative fosters a supportive learning environment where students are encouraged to take responsibility for environmental issues. The project strengthens the school's rapport with the community by involving parents and non-government organizations in the initiative.

In terms of the teaching and learning outcomes, the Green Education initiative enriches students' learning experience by providing them with practical, hands-on activities to apply their knowledge on environmental sustainability. Students are actively engaged in green initiative activities such as collecting used cooking oil and school beautification to learn the importance of sustainability in their daily lives. Their involvement further develops competencies related to critical thinking, problem-solving, and creativity.

Building on this success story, the school plans to expand its sustainability program by introducing new activities that foster creative thinking and environmental awareness. The school will also maintain this collaborative partnership, ensuring that these efforts receive the recognition they deserve.

5.5 Sekolah Rendah Pengkalan Batu (SRPB)

The green school project at SRPB is an integrated approach that involves all members of the school community, particularly teachers, staff, and students to create a green, cheerful, and conducive school environment.

This project is implemented as part of the school action research study to support Maqasid Shariah, specifically in green education. The project is based on the awareness that learning process does not only take place in the classroom, but also involves the responsibility of the school community to ensure a cheerful school environment that can stimulate and build students' intellectual and character.

The focus of this project is to encourage students and school members to enhance skills, increase knowledge, engage students in plant cultivation systems, and understand the importance of green environment.

This project is divided into three main objectives:

1. To create a cheerful school environment with greenery.
2. To instill pedagogical practices based on green education.
3. To strengthen rapport between school members and parents in supporting this project together.

The project is carried out by all school members, including students, teachers and non-teaching staff. The project's activities are managed by two committees: the hydroponics committee and the planting committee, conducted during STEAM periods (every two weeks). Each committee has a leader responsible for guiding the group, monitoring project progress, preparing activities and student logs, reporting to the SIP focal point and project supervisor, and ensuring the project meets its targets in each cycle (i.e. term).

For the third objective, the school engages parents by encouraging them to bring flowers and plants from home, instilling a sense of ownership and accountability. To support this initiative, the STEP center provides vegetable seeds, rockwool, and fertilizers

The concept of 3R (Reduce, Reuse, Recycle) is also applied in this project. For example, using empty water bottles as a substitute for watering cans, utilizing old tires to beautify planting areas, and using broomsticks and pipe stems to create labels for students' names and their plants.

The SIP FA3 project integrates various skills for students, particularly in subjects like Science, Mathematics, and ICT. Additionally, this project has helped to achieve the first goal of creating a cheerful school environment filled with greenery and the second goal of instilling pedagogical practices based on green education. Students also experience a learning atmosphere that extends beyond their classroom. The experience they gain contribute to shaping their character and encourage them to learn about and engage in planting themselves.

This project has positive impact on IWSE and teachers' TPA in the following ways:

1. In Domain 1, which focuses on Leadership and Management the project successfully fosters excellent collaboration among school members through clear and meticulous planning to ensure project targets are met.

2. In Domain 2, which pertains to Learning and Teaching, this project improves student engagement by providing them with planting experience and skills. Furthermore, the project instills a sense of responsibility in caring for the plants to ensure they grow well.
3. In Domain 3, which covers Ethos and Environment, the SIP project strengthens the relationship between the school and the community, including parents and external organizations (STEP Center), in jointly supporting the success of this project.

The school's way forward is to ensure that the green school project meets its targets with all the improvements made. It will continue to expand and incorporate more herbs and flowers around the campus to achieve the theme of a 'Cheerful Garden.' Additionally, the school plans to organize an Entrepreneur Day as a year-end activity, where students will sell their produce to the villagers, applying various skills with the assistance of their teachers. Finally, a recognition day will be held to celebrate and appreciate the efforts of teachers, non-teaching staff, and students in making this project a success.

5.6 Sekolah Rendah Sinaut SRS)

SRS, with the FA3 "The Green School Education - Herbal Garden" focuses on two objectives: to brighten up the school atmosphere; and to provide knowledge and awareness.

This initiative is an extension of the previous year's projects that relate to the following:

1. The School Beautification Program (November 2023), where the school aims to plant approximately 150 plants—comprising flowering plants, fruit plants, and herbs.
2. The replanting of 10 dragon fruit trees planted earlier in 2017 and 2019.

SRS finds it beneficial to get involved in this initiative for both students and teachers. It is a practical way of educating students on environmental awareness and supports the development of their 6Cs. This initiative expands students' knowledge beyond mere planting to include areas such as the production of aromatherapy, salads, seasonings, medicinal herbs, and flavoring agents, while also highlighting their potential entrepreneurial applications. It enhances STEAM-based lessons and fosters a closer connection to nature. As a result, the school has observed improvements in several aspects of Domain 2 of the Whole School Evaluation (WSE) related to student learning, particularly in Student Learning Experience (2.1.1), Student Engagement (2.1.3), Learning and Teaching Resources (2.3.4), and Students' Prior Knowledge and Experience (2.3.6).

6 CONCLUSION

The findings and case studies lead us to the conclusion that integrating Green Education into the School Improvement Plan (SIP) is a success and crucial for promoting environmental awareness among students in a consistent and systematic manner. This approach addresses our major concerns regarding the sustainability of school initiatives, particularly those that enhance student learning. The study thus provides evident-based account on the needs of employing proper tools for any school initiatives to be made more impactful, objective and most importantly viable. Despite the fact that the study is still lacking a total package for green character, as shown by the non-takers for other aspects of Green Education such as energy and water conservation, the study nonetheless provides an assuring start towards exploring those aspects in the future. Moreover, as demonstrated by case studies, the development of other skills and competencies among students such as entrepreneurship, this study therefore, provides opportunities for Green Education initiatives to be integrated with other existing guidelines, standards, and frameworks to further enrich students' learning. This integration not only promotes the 6Cs but may also help develop students' soft skills and instill essential values, creating a comprehensive package for a future-ready generation.

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**RUBRICS TO MEASURE STUDENTS' 6 COMPETENCIES RELATED TO
GREEN EDUCATION INITIATIVE**

6Cs Competency	Level 1 (Beginning)	Level 2 (Developing)	Level 3 (Proficient)	Level 4 (Advanced)
Character	Does not show much interest in caring for the environment or understanding sustainability.	Sometimes shows care for nature and is willing to participate in activities to protect the environment with guidance.	Regularly takes care of the environment by making small sustainable choices (e.g., picking up litter, saving water) without being reminded.	Leads by example in caring for the environment; encourages classmates to adopt sustainable practices and takes initiative in green projects.
Citizenship	Has limited understanding of how to help the environment; does not participate in eco-friendly activities.	Understands basic ideas of caring for the environment and participates in green activities when asked.	Actively participates in environmental activities in school, such as recycling, planting, or energy saving.	Takes the lead in organizing or promoting eco-friendly activities in school and the community, showing a strong sense of responsibility for the planet.
Collaboration	Prefers working alone on green tasks and struggles to work well with others on group projects.	Works with others on green tasks but needs reminders to share ideas and help the group.	Collaborates well with classmates on green projects, listens to ideas, and contributes to group success.	Leads green group activities, encourages classmates to work together, and helps everyone feel included and important in

				completing the task.
Communication	Struggles to talk about the environment or share thoughts on sustainability; rarely speaks about green issues.	Can talk about simple ideas related to the environment, but may need help to express thoughts clearly.	Effectively communicates basic environmental ideas, shares knowledge about how to care for nature, and listens to others in discussions.	Speaks confidently about environmental issues, explains green concepts clearly to classmates, and helps others understand why sustainability is important.
Creativity	Finds it difficult to come up with new ideas to help the environment or solve green problems.	Can think of some ideas to help the environment but often needs guidance to develop or apply them.	Demonstrates creative thinking in coming up with new ways to care for the environment, such as reusing materials or suggesting ways to save energy.	Consistently develops imaginative solutions to environmental problems, using creative approaches to make green living fun and easy for others to adopt.

Critical Thinking	Has difficulty understanding how actions affect the environment or finding solutions to green problems.	Shows some ability to think about how actions impact the environment but needs help to solve problems.	Can think critically about how to solve simple environmental problems (e.g., reducing waste) and make good choices for sustainability.	Shows advanced thinking in understanding complex environmental problems and proposes thoughtful, well-reasoned solutions to help solve them.
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Source: Cluster 4 School Leaders, 2024

Explanation of Levels:

1. **Level 1 (Beginning):** Students are just starting to understand the basics of environmental care and sustainability. They may need significant support to engage in green practices.
2. **Level 2 (Developing):** Students are beginning to show awareness of environmental issues and participate in green activities with guidance.
3. **Level 3 (Proficient):** Students demonstrate independent responsibility for sustainability, actively participating in green activities and thinking critically about environmental actions.
4. **Level 4 (Advanced):** Students lead by example, inspire peers, and come up with creative and thoughtful ways to tackle environmental challenges, showing a deep commitment to sustainability.

Pelaksanaan S.I.P Literasi Bahasa Melayu: Satu Tinjauan Persepsi dan Cabaran Guru

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ABSTRAK

Bahasa Melayu merupakan bahasa rasmi atau bahasa kebangsaan yang menunjukkan budaya dan identiti orang Melayu di Negara Brunei Darussalam. Penggunaan bahasa Melayu di negara ini adalah secara menyeluruh termasuklah dalam aspek kehidupan, sistem pendidikan dan budaya ilmu. Bagi terus memartabatkan dan mempertahankan bahasa kebangsaan ini, guru-guru di sekolah memainkan peranan yang amat penting dan terus berusaha dalam meningkatkan penguasaan bahasa dalam kalangan murid. Namun demikian, proses pengajaran dan pembelajaran bahasa Melayu turut menjadi cabaran utama dalam kalangan guru pada era globalisasi tambahan lagi dengan penggunaan bahasa Inggeris yang dilihat semakin meluas akibat pengaruh media sosial, internet dan teknologi. Sebagai salah satu inisiatif untuk meningkatkan penguasaan bahasa Melayu, beberapa program dan strategi pengajaran dan pembelajaran di bawah *School Improvement Plan* (S.I.P) telah dilaksanakan di sekolah-sekolah kerajaan di negara ini. Usaha ini bertujuan untuk menarik minat murid terhadap bahasa Melayu. Kertas kajian ini bertujuan untuk menerokai persepsi dan cabaran yang dihadapi oleh guru-guru di Sekolah Rendah Mabohai dalam mengimplementasikan pelan inisiatif tersebut. Lima orang guru yang terlibat dalam pengajaran subjek bahasa Melayu telah menyertai kajian ini. Perbincangan kumpulan berfokus digunakan sebagai metode untuk mengumpulkan data kajian dan hasil kajian dianalisis secara tematik. Hasil penelitian awal mendapati beberapa faktor seperti kekangan masa dalam menyediakan silibus dan strategi pengajaran, serta menepati jangkaan keberkesanan pelan merupakan antara cabaran yang dihadapi oleh guru-guru yang terlibat. Oleh itu, pihak pentadbiran perlu peka terhadap cabaran-cabaran yang dihadapi oleh guru-guru untuk memastikan pengajaran dan pembelajaran bahasa Melayu akan lebih berkesan. Beberapa usaha juga dikenal pasti telah dilaksanakan bagi mengurangkan permasalahan atau cabaran yang dihadapi oleh guru-guru dalam mengimplementasikan program pembelajaran di sekolah yang terlibat.

Kata Kunci: Bahasa Melayu, persepsi, cabaran, pengajaran dan pembelajaran, literasi, *School Improvement Plan* (S.I.P).

1.0 PENGENALAN

Pada tahun 1959, bahasa Melayu telah diiktiraf sebagai bahasa rasmi Negara Brunei Darussalam (Mail, 2022). Menurut Mail (2012), bagi memartabatkan lagi penggunaan bahasa Melayu, bahasa ini dijadikan sebagai bahasa pengantar utama dalam institusi pendidikan. Beliau menambah, sejak tahun 1984, Brunei telah melaksanakan Dasar Pendidikan Dwibahasa untuk memastikan pelajar menguasai kedua-dua Bahasa Melayu dan Bahasa Inggeris dalam pendidikan dengan baik.

Namun, kesan daripada globalisasi dan pandemik COVID-19, literasi Bahasa Melayu semakin menghadapi cabaran (Karim, 2022) terutama di kawasan bandar, akibat peningkatan penggunaan bahasa Inggeris dalam kehidupan seharian dan pendidikan. Pendedahan teknologi yang meluas juga telah menjadikan pengukuhan motivasi dan minat pelajar dalam pembelajaran Bahasa Melayu semakin sukar (Mustaffa, 2022).

1.1 PROGRAM S.I.P LITERASI BAHASA MELAYU

Saidin dan Mohd Bukhari (2023) berpendapat bahawa setiap sekolah perlu memperkenalkan inisiatif dalam merangka program yang bersesuaian dengan keperluan murid di sekolah. Oleh itu, bermula pada tahun 2021, Sekolah Rendah Mabohai telah memilih kemahiran membaca dalam Bahasa Melayu sebagai salah satu fokus dalam program *School Improvement Plan* (S.I.P). Pemilihan fokus ini dibuat berdasarkan keputusan Bahasa Melayu dalam Penilaian Sekolah Rendah (PSR) yang semakin menurun dari setahun ke setahun.

Namun pada tahun 2022, sekolah ini telah menukar fokus dalam program S.I.P iaitu kemahiran menulis ayat bagi rendah bawah dan kemahiran menulis karangan bagi rendah atas disebabkan kebanyakan murid sudah mencapai sasaran khusus bagi kemahiran membaca iaitu mencapai aras 12 dalam Kaedah Gabung Bunyi Kata (KGBK).

Terdapat beberapa objektif utama dalam pelan tindakan S.I.P Literasi Bahasa Melayu antaranya adalah seperti berikut:

- 1) Meningkatkan kemahiran menulis: Teknik SKOP (**S**ubjek, **K**ata **K**erja, **O**bjek dan **P**eluasan) bagi rendah bawah dan teknik Peta Minda bagi rendah atas.
- 2) Meningkatkan peminjaman buku Bahasa Melayu di perpustakaan.
- 3) Menjalankan aktiviti bulan bahasa Melayu.
- 4) Meningkatkan kemahiran mengajar seperti melalui kaedah penyoalan, pembelajaran teradun (*Blended Learning*) dan membuat pencerapan.
- 5) Meningkatkan penglibatan ibu bapa.

1.2 PERNYATAAN MASALAH

Pengajaran Bahasa Melayu di sekolah rendah semakin berhadapan dengan pelbagai cabaran, terutamanya dalam zaman globalisasi dan selepas pandemik Covid19 (Mustaffa, 2022). Melalui media sosial, murid terdedah kepada pelbagai jenis bahasa seperti bahasa rojak (Mohd Faizal, 2022), bahasa Inggeris dan bahasa asing yang lain. Ini menyebabkan guru-guru menghadapi kesukaran dalam memastikan pelajar menguasai Bahasa Melayu dengan baik. Walaupun usaha melalui program SIP telah dilaksanakan, keputusan Bahasa Melayu masih belum menunjukkan peningkatan yang ketara terutama dalam Penilaian Rendah Bawah (PSR). Terdapat persepsi bahawa pendekatan ini tidak sepenuhnya berkesan dalam meningkatkan minat dan penguasaan pelajar terhadap subjek ini. Di samping itu, kekangan dari segi bahan pengajaran, kecenderungan murid terhadap bahasa asing serta beban tugas tambahan turut menambah cabaran dalam melaksanakan pengajaran yang berkesan. Kajian ini bertujuan untuk menerokai pandangan dan persepsi serta cabaran yang dihadapi dalam melaksanakan program ini dari perspektif guru di sekolah ini.

1.4 PERSOALAN KAJIAN

Berdasarkan daripada tujuan kajian ini dijalankan, kertas kerja ini akan memfokuskan kepada beberapa persoalan kajian seperti berikut:

- 1) Apakah persepsi guru terhadap pelaksanaan program SIP literasi Bahasa Melayu di sekolah ini?
- 2) Apakah faktor yang menyumbang kepada cabaran yang dihadapi oleh guru dalam mengimplementasikan program SIP ini di sekolah?

1.5 KEPENTINGAN KAJIAN

Beberapa kajian terdahulu telah dijalankan untuk mengenal pasti cabaran yang dihadapi oleh guru dalam mengajar Bahasa Melayu di era globalisasi ini. Terdapat juga pelbagai kajian yang meneliti keberkesanan program-program pembelajaran bahasa. Namun demikian, hanya segelintir kajian yang menumpukan kepada menilai keberkesanan program dari perspektif guru, khususnya di sekolah rendah di Negara Brunei Darussalam. Oleh itu, kajian ini bertujuan untuk mengisi jurang tersebut dalam kajian literatur. Selain itu, kajian ini diharapkan akan dapat memberi manfaat kepada pihak berkepentingan dengan menyediakan pandangan yang lebih jelas mengenai cabaran yang dihadapi oleh guru-guru Bahasa Melayu khususnya pihak pentadbiran sekolah, sekali gus menyokong usaha-usaha untuk memperbaiki dan memantapkan pelaksanaan program ini, demi mengurangkan beban yang dihadapi oleh para guru.

1.6 SKOP DAN BATASAN KAJIAN

Kajian ini dijalankan tertumpu kepada topik kajian tentang persepsi dan cabaran-cabaran yang dihadapi oleh guru-guru khususnya yang mengajar mata pelajaran Bahasa Melayu di salah sebuah sekolah rendah di negara ini. Antara batasan kajian ini adalah:

- 1) Kajian ini hanya melibatkan guru-guru dan murid di salah sebuah sekolah rendah sahaja.
- 2) Kajian hanya melibatkan subjek Bahasa Melayu sahaja.
- 3) Dapatan kajian hanya terbatas kepada sekolah ini sahaja.

Oleh yang demikian, keputusan hasil daripada penyelidikan ini tidak dapat digeneralisasikan kepada guru-guru atau sekolah yang lain sama ada sekolah-sekolah kerajaan mahupun swasta.

2.0 SOROTAN LITERATUR

Guru mempunyai peranan yang sangat penting dalam melaksanakan program pembelajaran dengan berkesan bagi meningkatkan kualiti pengajaran dan pembelajaran murid. Beberapa kajian mengenai persepsi dan cabaran yang dihadapi guru dalam mengajar Bahasa Melayu telah dilaksanakan khususnya dalam kalangan pendidik sekolah rendah di negara luar. Menurut Lau *et al.* (2023), guru-guru menunjukkan persepsi yang positif terhadap pelaksanaan program yang boleh meningkatkan penguasaan bahasa Melayu dalam kalangan murid. Penguasaan bahasa Melayu ini adalah sangat penting kerana ia bukan sahaja menunjukkan identiti bangsa, tetapi juga sebagai jati diri orang Melayu (Mail, 2022).

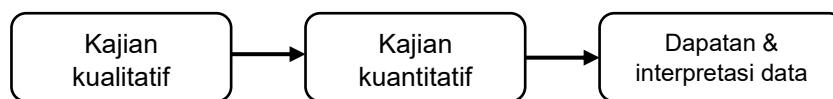
Walaupun kebanyakan guru-guru mempunyai persepsi yang positif terhadap pelaksanaan program, tidak dinafikan guru-guru menghadapi cabaran-cabaran dalam mengimplementasikan program yang diaturkan oleh pihak sekolah. Kajian terdahulu mendapati antara cabaran yang dihadapi ialah kesediaan guru dalam mengimplementasikan pengajaran dan pembelajaran Bahasa Melayu (Jamian & Ismail, 2013), kurang latihan profesional bagi guru menyampaikan pengajaran dengan berkesan (Hanapiah, 2023), kurang bahan pengajaran yang menarik dan inovatif (Subramaniam, t. th.), murid kurang penguasaan kosa kata menyebabkan murid lebih cenderung terhadap berbahasa asing (Karim, 2022 dan Hashim & Shawall, 2022) dan pengaruh media sosial dan teknologi maklumat (Makhtar, 2021).

3.0 METODOLOGI KAJIAN

Bahagian ini akan dibahagikan kepada beberapa subseksyen iaitu reka bentuk kajian, sampel kajian, instrumen kajian dan kaedah analisis data.

3.1 REKA BENTUK KAJIAN

Kajian ini menggunakan kaedah multimetode yang menggabungkan pendekatan kualitatif dan kuantitatif. Kajian ini mengumpulkan data daripada temu bual terlebih dahulu melalui teknik perbincangan kumpulan fokus (FDG) untuk memahami dan mengenal pasti tema yang muncul melalui perbincangan dan temu bual tersebut, kemudian diikuti dengan data kuantitatif. Tema-tema yang diperolehi daripada data kualitatif digunakan untuk membina kaji selidik kuantitatif untuk mengukur persepsi dan cabaran guru secara luas. Reka bentuk kajian ini juga merupakan jenis kajian eksploratori mengikut Cresswell dan Plana Clark (2006) dalam Mustaqim (2016) seperti berikut:



3.2 SAMPEL KAJIAN

Populasi kajian adalah terdiri daripada 5 orang guru yang mengajar Bahasa Melayu di Sekolah Rendah Mabohai, Daerah Brunei Muara. Pemilihan sampel kajian ini adalah berdasarkan tujuan kajian dibuat yang memfokuskan kepada pelaksanaan program SIP dalam literasi Bahasa Melayu. Jadual di bawah menunjukkan demografi guru-guru yang terlibat dalam kajian:

Guru	Tugas lantikan	Pengalaman mengajar	Pengalaman mengajar Bahasa Melayu
G1	Ketua Guru Subjek	11 tahun	5 tahun
G2	Guru Kelas	2 tahun	2 tahun
G3	Guru Kanan	15 tahun	3 tahun
G4	Guru Kanan	18 tahun	15 tahun
G5	Guru Kanan	23 tahun	18 tahun

JADUAL 1: Demografi guru-guru Bahasa Melayu yang terlibat dalam kajian

3.3 INSTRUMEN KAJIAN

Instrumen kajian yang digunakan dalam kajian ini adalah temu bual berdasarkan perbincangan kumpulan fokus (FDG) dan borang soal selidik guru. Tujuan temu bual dijalankan adalah untuk mengenal pasti persepsi dan cabaran yang dihadapi oleh guru dalam mengimplementasikan SIP literasi Bahasa Melayu di sekolah ini. Borang kaji selidik guru pula digunakan untuk mengukur sejauh manakah guru bersetuju terhadap item pernyataan yang dikemukakan serta memilih cabaran yang utama guru hadapi secara individu.

3.4 KAEDAH ANALISIS DATA

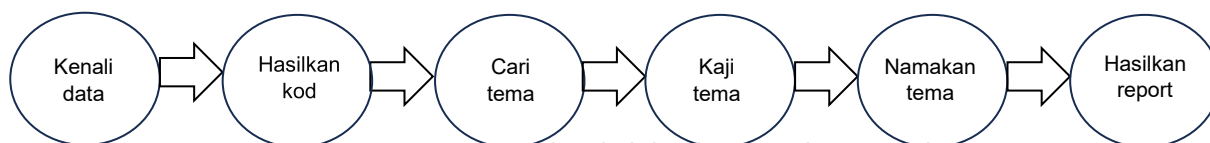
Data kajian dikumpul dan dianalisis seperti berikut:

Data kajian	Kaedah analisis
Kualitatif	Analisis Tematik
Kuantitatif	Deskriptif Statistik (Skor Min & Sisihan Piawai) Kekerapan & Peratusan

JADUAL 2: Kaedah analisis data mengikut jenis kajian

3.4.1 ANALISIS DATA KUALITATIF

Jadual 3 di bawah menunjukkan proses bagi analisis data kajian kuantitatif iaitu analisis secara tematik berdasarkan Braun & Clarke (2006) dalam Maguire, M., & Delahunt, B. (2017).



JADUAL 3: Enam langkah bagi proses data analisis

3.4.2 ANALISIS DATA KUANTITATIF

Jadual 4 dan Jadual 5 di bawah pula merupakan jadual interpretasi min (mengikut Harun *et al.*, 2016) dan interpretasi peratus data kuantitatif (Ismail *et al.*, 2023) yang seterusnya digunakan untuk menganalisis data hasil daripada kaji selidik guru dan murid.

Skor Min	Interpretasi Skor Min
4.00 – 3.51	Tinggi
3.50 – 2.51	Sederhana
2.50 – 1.51	Rendah
1.50 – 1.00	Sangat Rendah

JADUAL 4: Interpretasi skor min

Jadual 5 di bawah menunjukkan bagaimana penginterpretasian terhadap skor peratusan dibuat dalam kajian ini yang diadaptasi dari Alias Baba (1999); Tuckman (1999); Gay & Airasian (2003) dalam Ismail *et al.* (2023).

Skor Peratusan	Interpretasi Peratusan
75% - 100%	Tinggi
50% - 74%	Sederhana
0% - 49%	Rendah

JADUAL 5: Interpretasi skor peratusan tinggi, sederhana dan rendah

4.0 DAPATAN KAJIAN & PERBINCANGAN

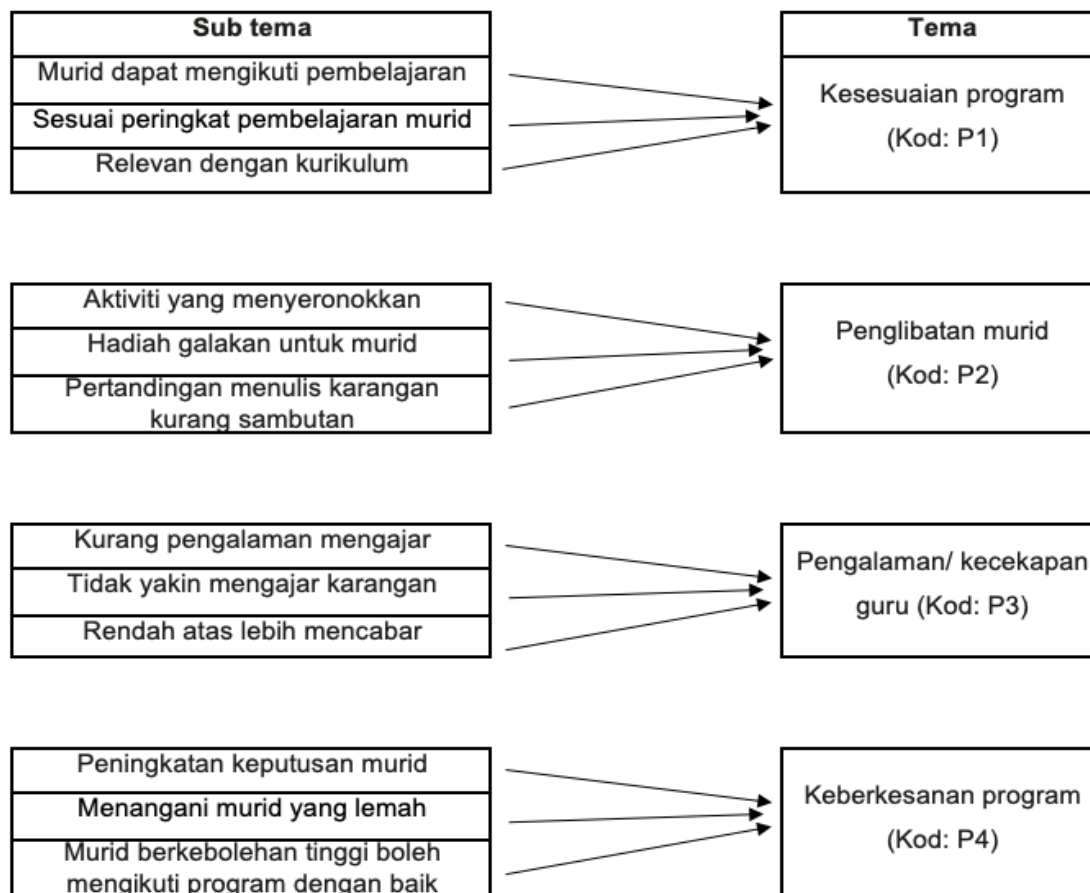
Hasil kajian daripada sesi temu bual dan kaji selidik akan dianalisis dan disusun mengikut dua persoalan kajian yang dinyatakan bagi memastikan analisis ini lebih terarah dan dapat menjawab persoalan yang dikemukakan.

4.1 PERSOALAN KAJIAN 1: APAKAH PERSEPSI GURU TERHADAP PELAKSANAAN PROGRAM S.I.P BAHASA MELAYU?

Bahagian ini akan membincangkan tema utama yang muncul dari temu bual bersama guru dan dapatan data kuantitatif akan digunakan untuk triangulasi data yang diperolehi daripada temu bual tersebut.

4.1.1 PERBINCANGAN KUMPULAN FOKUS (FDG) BERSAMA GURU

Hasil daripada temu bual yang dijalankan bersama guru, didapati bahawa setiap guru mempunyai persepsi yang berbeza mengenai pelaksanaan program S.I.P Bahasa Melayu ini.



JADUAL 6: Tema dikenal pasti daripada temu bual bersama guru

Jadual 6 di atas menunjukkan tema yang muncul daripada temu bual yang dijalankan melalui metode perbincangan kumpulan fokus (FGD) yang bertujuan untuk memahami persepsi guru terhadap pelaksanaan program S.I.P Bahasa Melayu.

Data kualitatif ini mengemukakan beberapa tema yang telah muncul dalam sesi temu bual tersebut yang akan dibincangkan seperti berikut:

- (1) kesesuaian program
- (2) penglibatan murid
- (3) pengalaman dan kecekapan guru
- (4) keberkesanan program

4.1.2 KAJI SELIDIK GURU

Jadual 7 di bawah merupakan data yang dikumpulkan untuk mengukur persepsi guru dalam melaksanakan program SIP Literasi Bahasa Melayu dan sejauh mana guru bersetuju terhadap pernyataan yang dikemukakan.

ITEM (PERSEPSI GURU)	KOD	MIN	SISIHAN PIAWAI	INTPRETASI MIN
(a) Saya bermotivasi mengajar Bahasa Melayu.	P3	3.4	0.55	Tinggi
(b) Saya yakin Program SIP dapat meningkatkan kefahaman dan penguasaan Bahasa Melayu.	P3	3.2	0.45	Tinggi
(c) Program SIP ini sesuai untuk peringkat pembelajaran murid.	P1	3.4	0.55	Tinggi
(d) Program SIP ini berjaya menarik minat murid untuk belajar Bahasa Melayu.	P2	2.8	0.84	Sederhana
(e) Teknik SKOP dapat meningkatkan penulisan ayat dalam kalangan murid.	P4	3.4	0.55	Tinggi
(f) Teknik Peta Minda dapat meningkatkan kemahiran membuat karangan.	P4	2.8	0.84	Sederhana
(g) Guru yang berpengalaman lebih mahir mengajar Bahasa Melayu.	P3	3.8	0.45	Tinggi
(h) Latihan/ PD adalah mencukupi untuk memastikan keberkesanan program ini.	P3	2.0	0.00	Sangat rendah

JADUAL 7: Dapatan kaji selidik mengenai persepsi dan pandangan guru

Persepsi 1: Kesesuaian program

Kesemua peserta kajian bersetuju mengatakan bahawa program S.I.P ini adalah relevan dan bersesuaian dengan keperluan murid. Ini dapat dilihat melalui Item (c) dalam statistik deskriptif Jadual 7 yang menunjukkan skor min yang tinggi ($M = 3.4$, $SD = 0.55$).

Salah seorang guru mengatakan:

“ ... Teknik pengajaran dalam SIP ini memang lah. Teknik SKOP sesuai untuk murid rendah bawah untuk membina ayat, kalau teknik Peta Minda sesuai untuk rendah atas membuat karangan...”

“... ia (teknik SKOP dan Peta Minda) sesuai sebab memang dibuat dalam pengajaran contoh waktu tatabahasa dan karangan...”

Persepsi guru terhadap program ini adalah bertepatan dengan pendapat Othman & Othman (2012) yang berpendapat bahawa penggunaan peta minda dalam penulisan karangan adalah lebih menarik dan dapat memberikan ruang kepada murid untuk terlibat secara aktif dalam pembelajaran. Manakala hasil teknik SKOP pula, menurut guru-guru, merupakan cara mudah untuk membina ayat dan sesuai untuk murid rendah bawah yang sedang belajar untuk membina ayat secara berstruktur.

Persepsi 2: Penglibatan murid

Hasil daripada temu bual yang dijalankan, kajian mendapati guru memiliki persepsi bahawa penglibatan murid secara berterusan boleh menarik minat mereka dalam pembelajaran Bahasa Melayu melalui aktiviti-aktiviti yang disediakan dalam program SIP ini. Seorang guru mengongsikan pendapatnya:

“... Murid suka tu kalau ada aktiviti-aktiviti terutamanya yang ada hadiah. Ramai lah tu yang ikut serta. Kadang-kadang nda disangka jua melihat murid ini ada yang berbakat jua contohnya dalam aktiviti bercerita atau membaca buku cerita...”

Walau bagaimanapun, data kuantitatif dalam Jadual 7 Item (d) menunjukkan beberapa guru berpendapat bahawa program SIP ini hanya memberikan impak yang sederhana terhadap penglibatan murid terutama murid rendah atas ($M = 2.8$, $SD = 0.84$). Salah seorang guru rendah atas mengatakan,

“... Kalau rendah atas, murid kurang melibatkan diri dalam pertandingan bagi subjek Bahasa Melayu...”

Data kajian menunjukkan murid-murid rendah bawah lebih aktif melibatkan diri dalam aktiviti yang dijalankan berbanding murid rendah atas. Ini bermakna guru-guru perlu mempelbagaikan jenis aktiviti yang dijalankan mengikut kesukaan atau kebolehan murid yang berlainan aras dan peringkat umur bagi menarik minat semua murid dan meningkatkan motivasi mereka dalam pembelajaran Bahasa Melayu (Jia Chzin dan Surat, 2021).

Persepsi 3: Pengalaman dan kecekapan guru

Kajian ini mendapati walaupun semua guru mempunyai persepsi yang positif terhadap pelaksanaan program S.I.P ini, tidak dinafikan bahawa guru yang berpengalaman mengajar adalah lebih berkeyakinan dalam menyampaikan pengajaran Bahasa Melayu berbanding dengan guru novis (mengajar kurang daripada lima tahun) terutama dalam mengajar karangan. Dapatan ini selari dengan data kuantitatif (Jadual 7) yang menunjukkan skor min tertinggi iaitu 3.8 (SD = 0.45) bagi Item (g) iaitu

“Guru berpengalaman lebih mahir mengajar Bahasa Melayu”.

Terdapat seramai 3 orang guru yang hanya memiliki pengalaman mengajar Bahasa Melayu kurang daripada 5 tahun. Antara mereka mengongsikan pendapatnya:

“... baru 2 tahun mengajar Bahasa Melayu. I just go with the flow.. Kadang-kadang berfikir, apa lagi cara kan membagi pandai murid...”

Seorang guru perempuan menambah, *“... kalau rendah bawah okay sikit, kalau rendah atas tidak yakin...”*

Perkara seperti ini boleh menyebabkan guru berasa kurang berkeyakinan untuk menyampaikan pengajaran dengan baik (Johari *et al.*, 2009) terutama jika berhadapan dengan murid yang lemah. Guru-guru di sekolah ini juga mempunyai persepsi bahawa hanya guru yang berpengalaman dapat menjalankan pengajaran dengan lebih berkesan. Bertepatan dengan dapatan dari hasil kaji selidik yang dijalankan, kesemua guru (100%) berasa latihan yang diberikan kepada guru untuk menjalankan program ini adalah tidak mencukupi untuk memastikan keberkesanannya (rujuk Jadual 7, Item (h)).

Persepsi 4: Keberkesanan program

Data kualitatif ini mendapati guru-guru bersetuju bahawa teknik pengajaran dalam Program SIP ini dapat membantu meningkatkan kefahaman dan penguasaan bahasa Melayu dalam kalangan murid. Dapatan ini bertepatan dengan data kualitatif dalam Jadual 7 Item (b) menunjukkan skor min yang tinggi iaitu 3.2 (SD = 0.45).

Guru-guru juga berpendapat bahawa teknik SKOP yang dijalankan dalam program SIP memberikan impak yang positif terhadap pembelajaran murid dengan mendapat skor min yang tinggi $M = 3.4$ ($SD = 0.55$) dalam Jadual 7 bagi Item (e). Seorang guru rendah bawah mengatakan:

“... teknik SKOP ini bagus untuk murid belajar membina dan menyusun ayat, jadi murid boleh belajar membina ayat mudah...”

Manakala bagi teknik Peta Minda pula, berdasarkan jawapan guru rendah atas, hanya murid berkebolehan tinggi dapat menggunakan teknik Peta Minda dengan baik. Guru rendah atas berpendapat:

“... Murid yang pandai itu okaylah.. boleh mengikuti tu teknik Peta Minda. Tapi kalau murid yang lemah mesti jua dibantu, kadang-kadang dibagi jawapan tu dan mesti ada input dari guru..”

Seorang lagi guru menambah,

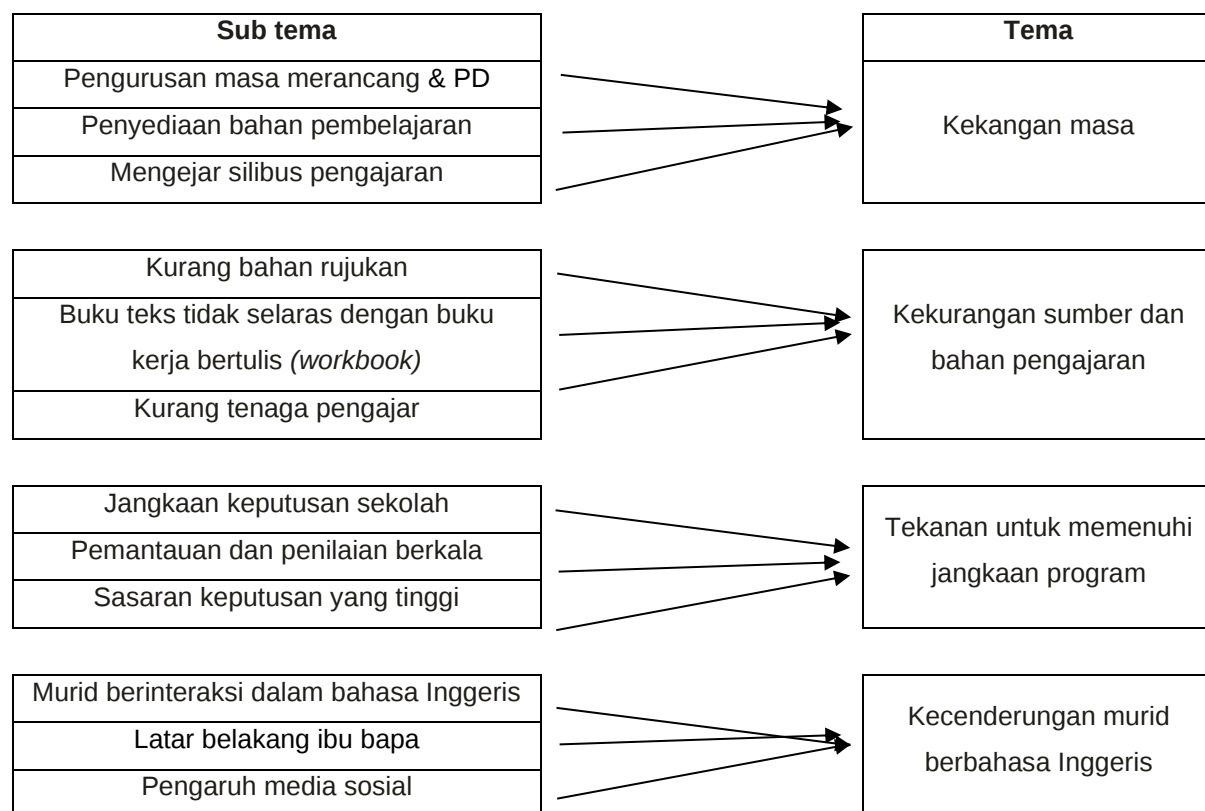
“... Apatah lagi murid dari kelas MA/LA (murid kebolehan sederhana dan lemah), murid masih lemah membina ayat. Ayatnya ayat songsang, bahasa yang digunakan campur-campur..”

Hasil daripada temu bual mendapati teknik pengajaran SKOP dan Peta Minda dapat diterima dengan baik oleh murid yang berkebolehan tinggi. Namun, murid yang berkebolehan rendah perlu dibimbing dan belum dapat mengikuti teknik Peta Minda dengan baik kerana belum mahir menguasai kemahiran membina ayat, mengembangkan ayat dan idea di dalam karangan. Ini menyebabkan beberapa orang guru kurang bersetuju terhadap pernyataan dalam Item (f) yang mendapat skor min sederhana iaitu $M = 2.8$ ($SD = 0.84$) yang menunjukkan teknik Peta Minda ini hanya memberikan impak sederhana terhadap penglibatan dan pembelajaran murid.

4.2 PERSOALAN KAJIAN 2: APAKAH FAKTOR YANG MENYUMBANG KEPADA CABARAN YANG DIHADAPI OLEH GURU DALAM MENGIMPLEMENTASIKAN PROGRAM SIP INI DI SEKOLAH?

Bahagian ini seterusnya akan membincangkan tema yang diketengahkan mengenai cabaran yang dihadapi oleh guru melalui temu bual yang dijalankan. Kaji selidik guru akan digunakan untuk tujuan triangulasi data dan mengenal pasti cabaran utama pilihan guru secara individu.

4.2.1 PERBINCANGAN KUMPULAN FOKUS (FDG) BERSAMA GURU



JADUAL 8: Tema dikenal pasti daripada temu bual bersama guru

Jadual 8 di atas menunjukkan tema yang muncul hasil daripada perbincangan kumpulan fokus (FDG) bersama guru bagi mengenal pasti faktor-faktor yang menyumbang kepada cabaran yang dihadapi oleh guru dalam melaksanakan program SIP literasi Bahasa Melayu di Sekolah Rendah Mabohai. Terdapat 4 faktor yang jelas muncul dari temu bual dan perbincangan tersebut seperti berikut:

- (1) kekangan masa
- (2) kekurangan sumber dan bahan pengajaran
- (3) tekanan untuk memenuhi jangkaan
- (4) kecenderungan murid berbahasa Inggeris.

4.2.2 KAJI SELIDIK GURU

Jadual 9 di bawah menunjukkan dapatan kaji selidik bagi guru-guru Bahasa Melayu yang digunakan untuk triangulasi dapatan data kualitatif di atas. Guru-guru dikehendaki untuk memilih cabaran utama berdasarkan apa yang dihadapi oleh guru-guru secara individu. Keputusan pilihan dalam kaji selidik di bawah telah disusun dari yang tertinggi hingga paling rendah.

ITEM (CABARAN UTAMA)	NOMBOR (#)	PERATUS (%)
(a) Bebanan kerja banyak, sukar untuk fokus mengajar.	4	80%
(b) Murid terpengaruh dengan media sosial.	4	80%
(c) Murid cenderung berbahasa Inggeris.	4	80%
(d) Latihan/ PD guru tidak mencukupi untuk memastikan keberkesanan program SIP.	4	80%
(e) Tekanan untuk memenuhi jangkaan keberkesanan program.	3	60%
(f) Kurang bahan pengajaran.	3	60%
(g) Kurang menggunakan alat inovasi di dalam kelas.	2	40%
(h) Kekangan masa untuk mengajar Bahasa Melayu – <i>period</i> tidak mencukupi.	1	20%
(i) Murid tidak minat belajar Bahasa Melayu.	1	20%
(j) Pihak pentadbiran tidak menyediakan sokongan yang mencukupi dari segi sumber pembelajaran dan teknologi.	1	20%
(k) Kaedah pengajaran dalam SIP tidak tersusun.	1	20%
(l) Guru tidak mahir berbahasa Melayu Standard.	0	0%

JADUAL 9: Bilangan dan peratus guru memilih cabaran utama secara individu

Cabaran 1: Kekangan masa

Berdasarkan daripada dapatan yang diperolehi, kekangan masa merupakan salah satu faktor yang menyumbang kepada cabaran guru mengimplementasikan program SIP Bahasa Melayu dengan berkesan (Jadual 9). Seramai 80% daripada guru memilih Item (a) yang mengatakan bebanan kerja lain selain mengajar menghalang guru untuk fokus terhadap pengajaran.

Terdapat pelbagai faktor lain yang dikenal pasti yang dapat dikategorikan di bawah tema ini seperti pengurusan masa dalam menyediakan perancangan serta bahan pengajaran, membuat perjumpaan untuk perkembangan profesional dan mengejar silibus yang tertinggal.

Seorang guru mengongsikan:

“... kadang-kadang LP tidak dapat dibuat on time sebab banyak kan di marking, buat reflection lagi.. Kelas Bahasa Melayu ani setiap hari, jadinya sebelum masuk kelas mesti jua pastikan buku murid sudah disemak... tambahan lagi kalau ada membuat kerja-kerja lain selain mengajar.. mengambil masa menyemak kerja murid tu”

Selain itu, salah seorang guru kanan menambah kekangan masa ini juga termasuklah menyediakan aktiviti pembelajaran yang bersesuaian mengikut kebolehan murid yang berbeza di dalam kelas. Beliau mengatakan,

“... banyak kan di prepare kalau membuat aktiviti mengikut tahap kebolehan (differentiation). Mencari latihan yang sesuai dengan murid.. jadi ia mengambil masa yang lama untuk prepare satu lesson...”

Bertepatan dengan kajian yang dijalankan oleh Letchumanan & Che Rose (2021) yang berpendapat kekangan masa merupakan salah satu cabaran utama yang dihadapi oleh guru dalam melaksanakan program sekolah yang berkesan. Oleh demikian, dalam memastikan keberkesanan program ini, guru perlulah membuat persediaan awal dan lebih cekap dalam menyusun aktiviti dan menyediakan bahan pengajaran.

Cabaran 2: Kekurangan sumber dan bahan pengajaran

Cabaran yang dikenal pasti seterusnya ialah kekurangan sumber dan bahan pengajaran. Sebanyak 60% daripada guru memilih kekurangan bahan pengajaran (rujuk Jadual 9) sebagai salah satu cabaran utama yang mengganggu pelaksanaan program SIP ini dengan berkesan. Kekurangan terhadap sumber dan bahan pengajaran ini akan menjejaskan keberkesanan program yang dijalankan. Abd Samad *et al.* (2017) berpendapat sumber dan bahan pengajaran berkualiti akan dapat membantu guru menyampaikan pengajaran dengan lebih berkesan di samping dapat membantu meningkatkan pemahaman dan menarik minat murid dalam pembelajaran.

Sumber dan bahan yang dimaksudkan di sini adalah seperti nota-nota Bahasa Melayu, latihan yang relevan dengan sukatan pelajaran, buku teks yang tidak selaras dengan buku tulis (*workbook*), alatan pengajaran serta kekurangan tenaga pengajar yang mengajar mata pelajaran Bahasa Melayu.

Beberapa orang guru mengongsikan pandangan mereka:

“... Teks book dan workbook buku Bahasa Melayu yang disediakan tidak selaras, mungkin perlu di revise lagi. Confuse cikgu.. Nota untuk dijadikan rujukan tidak ada, jadinya nota perlu dibuat sendiri...”

“... Kalau kan membagi latihan kepada murid, mesti dicari melalui internet. Atau pun ada yang tidak berkenaan dan perlu diubah suai sebab lebih banyak dalam bahasa Inggeris.”

“... kami kekurangan guru Bahasa Melayu. Kalau boleh setiap level, seorang guru mengajar jadi boleh fokus mengajar. Since ada masih murid yang belum mahir membaca, lebih baik sekiranya ada guru yang dapat pull out macam subjek English...”

Cabaran 3: Tekanan untuk memenuhi jangkaan

Lim & Abd Rashid (2002) berpendapat pelaksanaan pelbagai reformasi bagi mencapai matlamat pendidikan menjadikan peranan guru lebih mencabar dan jika tidak ditangani dengan baik akan menjadikan tekanan kepada guru. Melalui temu bual dan kaji selidik yang dijalankan kepada guru, didapati seramai 3 orang guru (60%) memilih tekanan untuk memenuhi jangkaan sekolah sebagai salah satu cabaran utama yang mereka hadapi dalam melaksanakan program SIP ini dengan berkesan (Jadual 9, Item (3)).

Salah seorang guru mengatakan:

“... guru ani sedaya upaya sudah memikirkan cemana mengajar... Kalau nda mencapai target, kami yang bertanggungjawab tu...”

Manakala guru rendah atas dan HOD Bahasa Melayu mengongsikan kebimbangannya untuk mencapai sasaran PSR bagi subjek Bahasa Melayu dan mengekalkan keputusan yang baik dengan mengatakan,

“... result PSR kitani tinggi, mesti di maintain tu.. yatah pressure...”

“... as HOD, aku memikirkan cemana boleh English dapat result tinggi atu.. kenapa nda BM? Kadang-kadang di rumah pun berfikir tu apa lagi teknik untuk mengajar murid..”

Kamarudin & Taat (2020) berpendapat tekanan kerja sememangnya wujud dalam persekitaran kerja termasuklah di sekolah. Justeru itu warga pendidik perlu berganding bahu dalam menangani segala permasalahan yang berlaku agar tidak memberikan kesan yang negatif terhadap mutu pengajaran guru.

Cabaran 4: Kecenderungan murid berbahasa Inggeris

Menurut guru-guru, kecenderungan murid terhadap bahasa Inggeris merupakan faktor yang menyebabkan murid tidak dapat mengikuti pembelajaran dengan baik. Melalui data kuantitatif dalam Jadual 9, seramai 80% guru memilih cabaran ini sebagai cabaran utama mereka melaksanakan program SIP dengan berkesan. Guru-guru juga mengatakan bahawa latar belakang ibu bapa murid dan pengaruh media sosial memberikan kesan kepada pengajaran dan pembelajaran Bahasa Melayu. Guru-guru memberikan pendapat seperti berikut:

“... di sekolah ani murid mostly bercakap English dengan kawan-kawan even murid yang LA (low ability) ...”

“... murid ani terdedah kepada media sosial jua. Banyaknya cerita/ movie ani dalam bahasa English...”

“... bahasa digunakan dalam penulisan pun banyak songsang, campur-campur bahasa Melayu, Bahasa Indonesia, bahasa pasar dan bahasa English...”

Apabila ditanya pendapat guru mengenai keputusan murid yang mencapai keputusan yang lebih baik dalam bahasa Inggeris, guru berpendapat:

“... mungkin sebab kalau bahasa Inggeris ada satu saja.. tapi kalau bahasa Melayu ada macam-macam jenis... ada bahasa Brunei, bahasa Standard, bahasa Indonesia, bahasa pasar. Lagipun bahasa Melayu ani banyak peraturannya daripada bahasa Inggeris...”

Dapatan ini bertepatan dengan kajian Hedzir *et al.* (2022) yang mengatakan bahawa latar belakang ibu bapa dan kecenderungan terhadap berbahasa Inggeris boleh mempengaruhi pembelajaran murid dalam subjek Bahasa Melayu. Mohd Faizal (2022) juga berpendapat bahawa bahasa yang digunakan dalam media sosial menyebabkan percampuran bahasa dan memberikan impak negatif terhadap penguasaan Bahasa Melayu.

5.0 KESIMPULAN & IMPLIKASI KAJIAN

Bahagian ini akan menyimpulkan hasil dapatan kajian dan implikasinya terhadap pihak-pihak yang berkenaan terutama pihak pentadbiran sekolah dan guru-guru.

Secara keseluruhan, kajian ini dijalankan bertujuan untuk mengenal pasti apakah persepsi guru dalam melaksanakan program SIP Literasi Bahasa Melayu dan faktor yang menyumbang terhadap cabaran yang dihadapi oleh guru. Kajian ini mendapati bahawa guru-guru mempunyai persepsi yang positif terhadap pelaksanaan program ini. Namun demikian, data kuantitatif menunjukkan beberapa perkara seperti penglibatan murid dan pengajaran teknik Peta Minda dalam program ini hanya memberikan impak yang sederhana. Manakala cabaran utama yang dihadapi oleh guru yang dikenal pasti melalui kajian ini ialah

seperti; kekangan masa dalam membuat penyediaan pengajaran yang berkualiti atau menghadiri perkembangan profesional, kurang bahan pengajaran yang relevan dan menarik, tekanan bagi memenuhi jangkaan program serta kecenderungan murid terhadap bahasa Inggeris. Berdasarkan dapatan kajian ini, pengkaji mencadangkan beberapa penyelesaian khususnya bagi pentadbiran sekolah dan guru-guru dalam mengurangkan permasalahan yang dihadapi oleh guru.

Sebagai cadangan kepada pentadbiran sekolah, adalah amat penting untuk mengongsikan visi dan misi sekolah dan kementerian pendidikan kepada guru-guru agar matlamat pendidikan dapat dicapai secara optima (Calam, Marhamah & Nazaruddin, 2020). Selain itu, pentadbiran sekolah perlu menyediakan platform untuk kolaborasi antara guru-guru termasuk guru-guru di luar sekolah. Ini bertujuan agar guru-guru dapat berkongsi pendapat dan idea dalam menangani masalah yang timbul yang memfokuskan kepada kaedah pengajaran Bahasa Melayu (Mat Said *et al.*, 2023). Cadangan seterusnya adalah menyediakan slot atau waktu khusus bagi guru-guru Bahasa Melayu di sekolah membuat *Professional Learning Community* (PLC) sebagai pembangunan kompetensi dan profesional guru untuk bertukar-tukar pandangan, berbincang mengenai strategi pengajaran dan membuat refleksi terhadap pengajaran Bahasa Melayu. Di samping itu, pihak pentadbiran juga perlu memanfaatkan tenaga pengajar yang ada agar dapat memberi perhatian kepada murid yang berkebolehan rendah dalam subjek Bahasa Melayu. Sokongan daripada pihak pentadbiran ini sangat penting kerana ia dapat meningkatkan motivasi, prestasi dan produktiviti seorang guru (Mat Lazin, 2021).

Seterusnya adalah cadangan khusus bagi guru-guru. Guru-guru disarankan untuk memanfaatkan waktu PLC secara efektif. Melalui PLC ini guru-guru boleh berbincang mengenai strategi pengajaran, berkongsi bahan pengajaran serta mengenal pasti permasalahan yang dihadapi oleh murid khususnya dalam pembelajaran Bahasa Melayu. Di samping itu, guru-guru juga perlu lebih proaktif untuk mengikuti dan menghadiri bengkel yang memfokuskan kepada teknik pengajaran yang berkesan dalam mengajar subjek Bahasa Melayu. Ini adalah kerana keberkesanan pengajaran juga bergantung kepada kebolehan guru menggunakan kemahiran mengajar yang sesuai dengan pelajar (Mamat *et al.*, 2021) sekali gus dapat meningkatkan keyakinan guru dalam pengajaran. Selain itu, guru-guru juga disarankan untuk meningkatkan penglibatan ibu bapa dalam pembelajaran murid melalui aktiviti kelas mahupun ekstra kurikulum. Mengikut Abd. Halim & Yunus (2020) penglibatan ibu bapa ini bukan sahaja dapat meningkatkan pencapaian murid malahan juga membantu murid membina keyakinan dan jati diri yang kuat.

Justeru itu, setiap pihak memainkan peranan yang penting untuk mengurangkan atau menyelesaikan cabaran-cabaran yang dihadapi melalui kerjasama daripada semua pihak. Dengan cara ini, program pembelajaran akan dapat dilaksanakan dengan lebih berkesan dan matlamat pendidikan akan dapat direalisasikan dengan baik.

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Enhancing Learning using Animaker: A Study on Students' Views in Melayu Islam Beraja Subject on Topic '*Menghormati Ibubapa*'

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ABSTRACT

This research aims to obtain student perspectives on the use of Animaker as a school-based project in the Melayu Islam Beraja (MIB) subject, specifically focusing on the topic "*Menghormati Ibubapa*". With the increasing integration of technology in education, it is essential to explore innovative teaching methods to enhance student motivation and engagement. The background of this research is grounded in the need to adapt teaching practices to the digital proficiency of modern students, as studies have shown that incorporating technology can significantly boost motivation and learning outcomes. The methodology employed in this study is qualitative, utilizing in-depth interviews to gather detailed insights into students' experiences and perceptions. A sample of Year 4 and Year 5 students who participated in the Animaker project will be interviewed to assess their engagement, motivation, creativity and technical skill development. The results of this research show several key benefits. Firstly, using Animaker significantly increased student engagement, with students displaying higher levels of interest and participation in the MIB subject. Secondly, the tool enhanced student motivation, making the learning experience more enjoyable and encouraging students to invest more effort in their studies. Thirdly, Animaker fostered greater creativity among students, allowing them to express their ideas through the creation of animations. Lastly, the project facilitated the development of technical skills, as students became proficient in using digital tools. The implications of this research are substantial for educational practices. It suggests that integrating digital tools like Animaker can make traditional subjects more engaging and effective, bridging the gap between conventional teaching methods and contemporary student interests. This approach can lead to a more dynamic and interactive learning environment, ultimately improving student outcomes.

Keywords: Animaker, Student Motivation, Melayu Islam Beraja (MIB), *Menghormati Ibubapa*, Educational Technology

INTRODUCTION

Research Background

Brunei's education system has evolved to embrace 21st-century learning approaches, emphasizing critical thinking, creativity, communication, and collaboration. The Ministry of Education's Strategic Plan (SPN21) promotes a holistic framework integrating ICT into the curriculum, preparing students for the digital era and aligning with global educational trends that prioritize technology in teaching and learning methods (Ministry of Education, Brunei, 2009).

The integration of animation and multimedia in teaching, particularly for subjects like Melayu Islam Beraja (MIB), enhances comprehension and retention by simplifying complex concepts and presenting them in a visually engaging way. Keller and Suzuki (2004) affirm that visual aids like animations significantly improve understanding and engagement, making them especially beneficial for MIB's cultural and moral education focus.

ICT integration in education extends beyond mere tool usage; it enhances learning outcomes by fostering inclusive and diverse environments and advancing digital literacy (Bates, 2015). Tools like Animaker engage students actively, allowing them to internalize and visually represent complex concepts. This process is particularly effective for imparting moral lessons such as 'Menghormati Ibubapa' in the MIB curriculum, deepening understanding through creative engagement (Robinson & Molenda, 2007).

This research integrates Animaker into the 'Menghormati Ibubapa' lesson for Year 5 within the MIB curriculum, aiming to evaluate its impact on student engagement, motivation, creativity, and technical proficiency within Brunei's SPN21 education framework. The study explores how advanced ICT tools can enhance the learning environment, potentially offering insights that support educational reforms and align with 21st-century learning paradigms.

Problem Statement

In Brunei, the Melayu Islam Beraja (MIB) subject, though taught in Malay for easier comprehension, struggles with pedagogical challenges due to traditional teaching methods focused on textbooks and worksheets. These methods are increasingly seen by students as monotonous, leading to reduced interest and engagement, which is at odds with the expectations of today's digitally native students (Ministry of Education, Brunei, 2009).

Traditional didactic methods in MIB instruction do not foster an environment that encourages the development of essential 21st-century skills like problem-solving, creativity, and technological literacy, which are crucial for both academic success and navigating the modern workforce (Khan, 2017). Consequently, the current pedagogical approach does not align with the objectives of Brunei's Strategic Plan (SPN21), which aims for an education system that meets the demands of a knowledge-based economy and cultivates lifelong learners (Ministry of Education, Brunei, 2009).

This research addresses the need for innovative teaching methodologies by integrating advanced ICT tools like Animaker into MIB lessons, aiming to enhance student engagement and participation through interactive content delivery. This integration seeks to make learning more enjoyable and challenging, better aligning with the 21st-century educational framework.

Purpose of the Study

The principal aim of this study is to elucidate student perspectives on the integration of Animaker, a digital animation tool, as a component of a school-based project within the Melayu Islam Beraja (MIB) curriculum at Year 5 level. This study specifically targets the unit "Menghormati Ibubapa" a fundamental topic that explores the cultural and moral imperatives of respecting parents, a core value in Bruneian society.

By employing Animaker in the delivery of this subject matter, the study seeks to achieve multiple educational objectives:

1. **Enhance Engagement and Interaction:** Assess whether the interactive elements of Animaker increase student engagement and participation in the MIB subject, thereby making the learning process more dynamic and appealing.
2. **Boost Motivation Through Enjoyable Learning Experiences:** Explore how the use of an animation tool can transform the learning experience from passive reception to active creation, potentially increasing student motivation and effort.
3. **Foster Creativity and Expression:** Investigate how Animaker enables students to express their understanding and appreciation of the topic through creative and personalized animations, offering insights into their interpretative and creative skills.
4. **Develop Technical Proficiency:** Evaluate the role of Animaker in enhancing students' technical skills, particularly their ability to use modern digital tools effectively, which is crucial for 21st-century competency development.

The outcomes of this study are intended to provide valuable insights into the effectiveness of incorporating ICT tools like Animaker in traditional educational settings. This could potentially lead to pedagogical innovations that align more closely with the needs and capabilities of contemporary learners, thus supporting broader educational reforms in Brunei's SPN21 framework.

Significance of the Study

The implications of this study extend far beyond the immediate classroom application, presenting significant benefits for a broad spectrum of stakeholders within Brunei's educational landscape, including the Ministry of Education, schools, teachers, and parents. By evaluating the integration of Animaker into the Melayu Islam Beraja (MIB) subject, this research provides a structured framework for understanding the potential of digital tools in enhancing pedagogical practices across multiple dimensions.

1. Ministry of Education:

This study provides the Ministry of Education with key insights on the benefits of integrating ICT tools into the national curriculum, particularly for enhancing MIB instruction. The findings could guide policy and curriculum enhancements under the SPN21 framework, aiming to modernize educational practices and align them with global 21st-century standards.

2. Schools:

The study presents a model for integrating technology in teaching, adaptable across subjects and educational levels. Schools can utilize this model to boost student engagement, motivation, creativity, and technical skills, thus improving educational outcomes and performance metrics.

3. Teachers:

Teachers can leverage findings from this study to enhance their instructional methods and integrate more ICT tools like Animaker, transforming classrooms into interactive and student-centered environments. This shift supports diverse learning needs and promotes a more inclusive educational atmosphere.

4. Parents:

Parents will value the increased motivation and engagement in their children, as shown in the study. Using Animaker enhances the learning experience, making it more enjoyable and relevant, especially in culturally important subjects like "Menghormati Ibubapa." It also helps students develop technical skills, preparing them for future educational and career opportunities, which aligns with parental expectations for a comprehensive, progressive education.

5. Broader Educational Application:

The study's findings suggest that Animaker's successful integration could serve as a model for educational technology use, adaptable across various syllabuses and age groups. This versatility enhances the quality of education broadly, not just within the MIB subject, but in other disciplines as well.

Theoretical framework

This study is anchored in Constructivist Learning Theory, which asserts that learners construct knowledge through experience and interaction with their environment (Piaget, 1971; Vygotsky, 1978). Within the Melayu Islam Beraja (MIB) curriculum, Animaker is employed to enable students to create animations on the topic of 'Menghormati Ibubapa.' This approach facilitates active engagement with the content, enhancing critical thinking and problem-solving skills as students conceptualize and visualize key ideas.

Constructivist learning underscores the significance of making learning relevant and meaningful through active participation. By creating animations, students personalize their learning experience, linking lessons to their personal context and building knowledge based on their individual perspectives. This method also emphasizes the role of reflection, as students refine and evaluate their work, deepening their understanding. Such activities, which encourage exploration, experimentation, and collaboration, are fundamental to effective learning (Vygotsky, 1978).

Research Question:

The aim of this study is to explore students' perceptions regarding the integration of Animaker in their learning process. To achieve this, the research is guided by a central question that seeks to understand the effectiveness of this digital tool within the context of the Melayu Islam Beraja (MIB) subject. Specifically,

the study focuses on the topic of '*Menghormati Ibubapa*' (Respecting Parents) and investigates how the use of Animaker influences various aspects of student learning.

Therefore, the main research question posed is:

How does the integration of Animaker impact student learning outcomes in the MIB curriculum, particularly on the theme of '*Menghormati Ibubapa*'?

Scope of the Research

Study Context and Aims:

This research is designed to critically assess the utilization of Animaker, a web-based animation platform, within the curriculum of the Melayu Islam Beraja (MIB) subject, focusing specifically on the topic of "Menghormati Ibubapa" for Year 5 students. The study seeks to explore the ramifications of integrating this digital tool in terms of student engagement, motivation, creativity, and the development of technical skills, providing insights into the pedagogical benefits and challenges of using animation software in educational settings.

Geographical and Demographic Focus:

The research is conducted in a small educational institution, offering a unique opportunity to engage closely with a specific cohort of students. This setting allows for detailed observational and interactional data collection, offering depth and nuanced understanding of the student experiences with the technology. However, the findings derived from this particular demographic and school environment may have limited applicability to broader educational contexts.

Technological Integration Assessment:

This investigation critically examines the potential of digital technologies to transform traditional learning environments. By focusing on Animaker, the study evaluates how such tools can facilitate dynamic educational experiences and foster essential digital literacy skills among students.

Limitations of the Research

Sample Size and Scope:

The research involves a relatively small sample of only 10 students, which may constrain the ability to generalize the findings. The small scale of the study limits the statistical power and breadth of data, potentially affecting the robustness and extrapolation of the results to other educational settings or populations.

Geographical and Institutional Constraints:

Conducted within a singular small school, the research context does not necessarily reflect the diverse range of educational environments where varying levels of resources and pedagogical strategies might influence the effectiveness and reception of digital tools such as Animaker.

Technological Reliability and Accessibility:

- Given that Animaker is an internet-dependent application, issues related to inconsistent internet access present significant challenges. This dependency could disrupt the teaching and learning process, particularly in regions or settings where internet connectivity is unreliable or of low quality.
- The reliance on stable internet connections for optimal use of Animaker highlights a critical vulnerability in the deployment of web-based educational technologies, particularly in less technologically developed areas.

Logistical and Temporal Challenges:

- The logistics of setting up individual student accounts for Animaker, which include creating and managing email accounts, impose additional administrative burdens. These requirements could lead to significant consumption of instructional time, detracting from core educational activities.
- The preparation phase, necessary for integrating Animaker into classroom activities, may introduce delays and complicate the timely execution of the educational curriculum.

Economic Considerations:

- The limitations of the free version of Animaker and the costs associated with premium subscriptions pose financial constraints that could inhibit the sustained and comprehensive use of this tool. Such economic factors are particularly pertinent in budget-restricted educational settings, where cost-effectiveness is a primary concern.

This study elucidates the use of Animaker in education, highlighting its advantages and noting significant limitations such as small sample size and financial constraints. Future research should address these by broadening participant demographics, enhancing technological infrastructure, and exploring additional funding mechanisms.

LITERATURE REVIEW

This literature review investigates the role of Melayu Islam Beraja (MIB) within Brunei's SPN21 framework, emphasizing its impact on shaping student values and societal contributions. It discusses the challenges of delivering MIB education in digital-era classrooms, underscoring the necessity to update traditional values for digitally native students while maintaining cultural integrity. Additionally, the review considers how digital tools like Animaker can make MIB teachings more engaging and relevant. It also evaluates how Brunei's educational system strives to integrate traditional values with contemporary educational practices under SPN21, addressing the difficulties educators encounter in engaging modern students with MIB content.

Introduction to Melayu Islam Beraja (MIB)

Melayu Islam Beraja (MIB) is a core subject within the Brunei education system, designed to impart the national philosophy which encompasses Malay language, culture, and Islamic teachings. As a cornerstone of Brunei's educational curriculum, MIB aims to instill a deep sense of identity and values in students, promoting a cohesive understanding of their cultural and religious heritage (Haji-Othman, 2019).

Integration within Sistem Pendidikan Negara (SPN 21)

The incorporation of MIB into the Sistem Pendidikan Negara (SPN 21) reflects Brunei's strategic educational framework aimed at modernizing education while preserving national identity. SPN 21 emphasizes a holistic approach to education, fostering not only academic proficiency but also ethical and spiritual growth among students (Ministry of Education, Brunei, 2009). MIB is pivotal in this framework, ensuring that students receive a balanced education that aligns with the country's aspirations and cultural values.

Expectations and Values

Stakeholders, including educators, parents, and policy makers, expect students to emerge from the MIB curriculum with a strong moral compass and a thorough understanding of their cultural roots. The subject is intended to cultivate virtues such as respect, responsibility, and community orientation, which are crucial for personal development and societal cohesion. These values are seen as essential for students to contribute positively to national development and to uphold Brunei's traditions and Islamic faith (Haji-Awang, 2018).

Impact on Future Contributions

The educational goals of MIB are not only to foster individual growth but also to prepare students to actively participate in the socio-economic development of Brunei. By embedding strong moral and ethical values through MIB, the education system prepares students to become responsible citizens who are aware of their roles in contributing to national progress and maintaining social harmony (Haji-Mat Zain, 2017).

Challenges in MIB Education

Despite its significance, the delivery of MIB often faces several pedagogical challenges. Students frequently perceive MIB as uninteresting and disengaging, primarily due to the traditional teaching methods employed, which heavily rely on textbooks and rote learning. There is a notable lack of interactive and innovative teaching resources, which contributes to student disengagement and a lack of interest in the subject matter (Haji-Rosli, 2020).

Lack of Resources and need for innovation

The traditional approach to teaching Melayu Islam Beraja (MIB) has been criticized for lacking engagement and not meeting the needs of contemporary education, leading to calls for an overhaul in teaching strategies (Haji-Abdul Mumin, 2021). MIB is pivotal in Brunei's education, but its impact is often diminished by outdated methods and insufficiently engaging materials. There is a critical need for educational reforms that introduce modern pedagogical techniques, including digital tools and interactive content, to rejuvenate MIB teaching and learning. Such improvements could significantly boost student engagement and enhance the curriculum's effectiveness, ensuring it adequately prepares individuals to contribute to their nation.

The Use of Video and Animaker in Teaching

In recent years, the integration of multimedia tools such as video and animation into teaching has gained significant attention as effective strategies to enhance student learning and engagement. These tools have been widely adopted across various educational levels, especially with the increasing emphasis on digital literacy and 21st-century skills. The use of video in education, in particular, has been recognized for its ability to simplify complex concepts, promote deeper understanding, and provide engaging, visually enriched learning experiences (Mayer, 2002).

The Role of Video in Education

Educational videos, grounded in Mayer's Cognitive Theory of Multimedia Learning, enhance comprehension and retention by engaging both auditory and visual channels (Mayer, 2002). These resources support self-paced learning, boosting motivation, engagement, and academic performance, particularly in primary education (Berk, 2009). Additionally, videos make complex subjects like science and history more accessible, capturing students' interest and enhancing the enjoyment of learning (Berk, 2009).

Animaker as an Educational Tool

Animation-based tools like Animaker enhance learning by allowing students to actively create content, fostering creativity and problem-solving skills (Chou, 2013). Research by Keller and Suzuki (2004) supports that creating animations deepens engagement with learning material, promoting retention and comprehension as students organize and present information visually. Piaget's constructivist theory (1971) also emphasizes that active involvement in creating knowledge enhances learning. Further, a study by Abdollahzadeh et al. (2020) found that students using Animaker for animated videos reported higher engagement, creativity, and satisfaction, noting enhanced collaboration and expression through visual storytelling.

Impact on Learning Outcomes

The use of video and animation in the classroom has shown to significantly improve learning outcomes across various subjects. In a study on using motion graphics in Brunei classrooms, Haji Asli (2022) demonstrated that students who engaged with motion graphics and animation tools exhibited higher levels of academic performance and participation. Similarly, the integration of video and Animaker has been associated with the development of critical 21st-century skills such as creativity, collaboration, and digital

literacy (Bates, 2015). These tools also enable students to engage with the content at a deeper level, fostering better understanding and long-term retention of information.

Challenges and Considerations

Despite their many benefits, the use of video and animation in teaching is not without challenges. Teachers may need additional training to effectively integrate these tools into their classrooms, and the availability of technological resources can vary across schools (Chou, 2013). Furthermore, there is the risk that excessive reliance on multimedia could overshadow the development of traditional literacy skills, especially if not properly balanced.

METHODOLOGY

Introduction

This section of the methodology provided insights into the study's design, participant recruitment, and the tools used for data collection. It gave a detailed account of the study's framework, the characteristics of the sample population, the number of participants, and the methodologies employed for data gathering.

Research Design

This study employs a qualitative research method to delve into the perceptions and experiences of students using Animaker in the Melayu Islam Beraja (MIB) subject, particularly focusing on the topic of "Menghormati Ibubapa." The qualitative approach allows for detailed insights into the subjective experiences of the participants, offering depth and nuance that quantitative methods might overlook.

Participants

The research will involve 10 students from Year 4 and Year 5, selected using purposive sampling to ensure a diverse representation of experiences with the Animaker tool. This sample size is suitable for in-depth qualitative analysis, allowing for a manageable yet insightful collection of data regarding individual student experiences.

Data Collection

Data will be collected through in-depth interviews, utilizing a semi-structured format that encourages open-ended responses. This format enables flexibility in the discussion, allowing for follow-up questions based on participant responses and the exploration of topics that may not have been initially anticipated.

Interview

Interviews are a critical method in educational research for capturing student views and perceptions, offering in-depth insights into their experiences, perceptions, and emotional responses (Cohen, Manion, & Morrison, 2018). Particularly effective with primary students, interviews adapt to young learners' cognitive and communicative abilities. Patton (2015) notes that interviews enable a detailed exchange of information, probing deeper into personal experiences and feedback, which is vital for primary students who may lack the writing skills or concentration for other data collection methods.

Data Analysis

The data from the interviews will be transcribed verbatim and analyzed using thematic analysis. This method involves coding the data in iterative cycles to identify themes and patterns that emerge from the students' descriptions of their experiences. The analysis will be supported by qualitative data analysis software, which helps in organizing, coding, and retrieving data efficiently.

Limitations

The study's scope is limited to a small sample size and a single educational setting, which may affect the generalizability of the findings. Additionally, the reliance on self-reported data can introduce bias, as students might provide socially desirable answers or reflect on their experiences inaccurately.

Qualitative Data

The qualitative data analysis process starts with a deep immersion in the data, allowing researchers to familiarize themselves and generate initial codes. This initial coding serves as the groundwork for identifying and refining themes that accurately represent the data and align with the research questions. As themes are refined, researchers work to define them clearly and integrate these findings into a comprehensive report. This report weaves together analytical narratives with broader research contexts, ensuring a rigorous and systematic analysis that yields credible and in-depth insights.

RESULT AND DISCUSSION

Qualitative result

Research question: How does the integration of Animaker impact student learning outcomes in the MIB curriculum, particularly on the theme of '*Menghormati Ibubapa*'?

Based on the student responses to using Animaker for the Melayu Islam Beraja (MIB) subject, a thematic analysis reveals four prominent themes that encapsulate the educational impacts of this digital tool: Enhanced Engagement, Increased Motivation, Fostering Creativity, and Development of Technical Skills. These themes align with the empirical benefits observed from the integration of Animaker into the curriculum, demonstrating the multidimensional value of this technology in educational settings.

Table 1

The summary of four generated themes

Themes	Definition	Sub-themes
1. Themes A: Enhanced Engagement	Refers to the increased level of student interaction and attention during learning activities, facilitated by Animaker's interactive and visually stimulating environment.	- Interactive learning - Increased participation - Sustained attention
2. Themes B: Increased Motivation	Describes the heightened eagerness and willingness of students to invest time and effort in learning activities, spurred by the enjoyable experiences provided by Animaker.	- Enhanced effort - Willingness to learn more
3. Themes C: Fostering Creativity	Involves the use of Animaker to enable students to express themselves creatively, allowing them to explore and expand on curriculum themes in a personalized manner.	- Personal expression - Visual storytelling - Expanded understanding

4. Themes D: Development of Technical Skills	Pertains to the acquisition of new digital competencies through Animaker, highlighting the transferability and practical application of these skills in various educational contexts.	- Digital literacy - Skill applicability - Skill transferability
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Note. the four themes were generated based on student interview using thematic analysis.

1. Enhanced Engagement

Responses Illustrating Theme:

S1 & S9: Students reported that Animaker transformed learning into a more interactive and significantly increasing their interest and participation.

The theme of "Enhanced Engagement" from student interviews emphasizes the significant impact of digital tools like Animaker in increasing student interaction and engagement in learning, as aligned with Mayer's (2014) multimedia principle, which highlights the effectiveness of incorporating animations and graphics in educational content. This interactive digital environment fosters a shift from traditional teacher-centered methods to a more student-centered approach, enhancing independence and participation, as Prince (2004) notes the importance of active learning strategies for deep engagement. Additionally, students report improved attention retention compared to traditional classes, a crucial aspect for educational success linked to executive attention, which is enhanced by engaging learning tools like Animaker, as discussed by Rueda et al. (2010).

2. Increased Motivation

Responses Illustrating Theme:

S2 & S7: Students displayed a heightened willingness to invest additional time and effort in their projects, with S7 expressing eagerness to use Animaker across different subjects.

The theme "Increased Motivation" from student responses highlights how Animaker boosts enthusiasm and dedication to learning, aligning with Ryan and Deci's (2000) Self-Determination Theory which posits that intrinsic motivation, fueled by enjoyable activities, is key to sustained engagement. Students S2 and S7 exemplify this, showing increased willingness to invest time and effort in learning through Animaker, with S7 eager to use it across subjects, indicating a shift towards deeper material engagement. Additionally,

Shernoff et al. (2003) support this by noting that enjoyable educational technologies enhance motivation and interest, as seen in students' expanded willingness to engage beyond immediate tasks.

3. *Fostering Creativity*

Responses Illustrating Theme:

S3 & S10: These responses highlight how students leveraged Animaker to creatively express and expand upon curriculum themes through personalized narratives and visual storytelling.

The theme "Fostering Creativity" is highlighted by student experiences with Animaker, showing how it boosts creative expression by allowing personal exploration of curriculum themes, essential for educational enrichment. Piaget (1962) underscores the importance of active exploration and personal expression in learning, which Animaker facilitates. Students S3 and S10 illustrate how Animaker enables them to creatively express and expand on curriculum themes through personalized narratives and visual storytelling, echoing Papert's (1993) perspective on the significance of technology in offering new learning contexts that enhance idea representation. Additionally, Mayer's (2001) Cognitive Theory of Multimedia Learning supports this by stating that combining words and pictures enhances learning, comprehension, and retention, showcasing Animaker's effectiveness in engaging students through visual storytelling.

4. Development of Technical Skills

Responses Illustrating Theme:

S4 & S8: Students not only acquired new digital skills but were also able to apply these skills in other educational contexts, showcasing the transferability and applicability of the competencies gained.

The theme "Development of Technical Skills" emphasizes how Animaker enhances digital literacy in education, crucial in today's tech-driven society. The American Library Association (ALA, 2013) defines digital literacy as the ability to use technologies to find, evaluate, create, and communicate information, involving cognitive and technical skills. Students S4 and S8 exemplify this theme, having developed new digital skills with Animaker and successfully applied them across educational contexts, showcasing their transferability and practical utility. This aligns with Jenkins et al. (2006), who stress the importance of digital literacy for academic and professional success. Furthermore, Voogt and Roblin (2012) highlight that integrating ICT tools like Animaker can foster 21st-century skills, including critical thinking, creativity, and collaboration, enhancing learning and technical skill development.

CONCLUSION

The incorporation of Animaker into the Melayu Islam Beraja (MIB) subject, particularly on the theme "Menghormati Ibubapa," has markedly improved student engagement, motivation, creativity, and technical proficiency. This integration has revitalized the traditional teaching approach, aligning it with the digital capabilities of today's students and significantly enriching the learning environment. Through Animaker, students have experienced more dynamic and compelling educational interactions, leading to heightened interest and participation essential for profound learning.

The use of Animaker has not only maintained student interest but has also amplified their motivation and investment in the educational process. This increased engagement has extended beyond the MIB subject, enhancing overall academic enthusiasm and persistence. Moreover, the platform has spurred creativity, enabling students to explore and convey their understanding of taught moral values innovatively and personally. Such creative activities are crucial for the deep internalization of the curriculum's core lessons.

Furthermore, Animaker has been instrumental in developing vital technical skills among students, preparing them for the demands of a digital economy. These skills are transferable across various academic subjects, underscoring the tool's broad utility and relevance.

Therefore, the application of Animaker within the MIB curriculum has profoundly transformed the educational experience, fostering a more engaging, enjoyable, and skill-oriented learning environment. These findings advocate for a broader integration of similar digital tools to adapt educational practices to better meet modern students' needs, potentially enhancing student outcomes across diverse subjects and educational frameworks. This strategic adoption promises a dynamic and interactive learning atmosphere conducive to improved academic performance and student preparedness.

IMPLICATION

Implications for Educational Practice

1. Enhanced Integration of Digital Tools:

Educational stakeholders should consider broader implementation of digital tools like Animaker across various subjects and curricula. This integration supports a learning environment that encourages active participation and creativity, key components of effective learning in the digital age.

2. Curriculum Design:

Curriculum designers are encouraged to incorporate digital storytelling tools in lesson planning to facilitate deeper student engagement and motivation. This approach allows students to explore subjects in more personalized and meaningful ways, which can lead to improved understanding and retention of information.

3. Teacher Training:

There is a critical need for professional development programs that equip teachers with the skills to effectively integrate technology into their teaching practices. Training should focus on both the technical aspects of digital tools and the pedagogical strategies that leverage these technologies to foster student-centered learning environments.

4. Assessment Strategies:

Assessment methods should be adapted to recognize and evaluate the diverse skills that students develop through the use of digital tools, including creativity, technical skills, and problem-solving. This might involve more formative assessments and project-based evaluations that can capture the breadth of student learning experiences

Implications for Further Research

1. Longitudinal Studies:

Future research could explore longitudinal studies to assess the sustained impact of digital tools like Animaker on student learning outcomes. This would help determine the long-term benefits of interactive learning environments on student engagement and academic performance.

2. Comparative Studies:

Further studies could compare the effectiveness of different digital tools in enhancing student learning. This comparative analysis would provide deeper insights into which features are most beneficial in promoting engagement and motivation among students.

3. Cross-Disciplinary Applications:

Research into the application of digital storytelling tools across different disciplines could elucidate their versatility and effectiveness in various educational contexts. This would provide a broader understanding of how these tools can be tailored to meet diverse educational needs.

4. Impact on Teacher Roles:

Investigating how the role of teachers changes with the integration of digital tools in the classroom could offer valuable insights into the evolving nature of teaching and learning dynamics. Understanding these shifts can aid in better preparing educators for future pedagogical challenges.

RECOMMENDATION

In light of the significant benefits identified from integrating digital tools like Animaker in the Melayu Islam Beraja subject, it is imperative to adopt strategic measures to further enhance and expand the use of technology in education. The following recommendations are designed to optimize the deployment of digital resources in teaching and learning environments, ensuring that students not only engage more deeply with the curriculum but also acquire essential 21st-century skills. These suggestions aim to guide educational stakeholders from policymakers to teachers, in effectively harnessing the potential of educational technologies to transform learning experiences.

1. Expand Technology Integration Across the Curriculum:

Schools and educational institutions should broaden the integration of digital tools across all subjects to ensure that students benefit from interactive and multimedia learning across their educational journey. This approach should be standardized in educational policy to encourage consistent implementation.

2. Develop Specific Digital Literacy Curricula:

Develop and implement a specific curriculum focused on digital literacy that includes using tools like Animaker. This curriculum should be designed to develop students' technical skills progressively as they advance through their education.

3. Enhance Teacher Training Programs:

Enhance teacher training programs to include comprehensive training on the latest digital tools and educational technologies. Training should emphasize not only the technical use of these tools but also effective pedagogical strategies that leverage technology to enhance learning outcomes.

4. Create Collaborative Learning Environments:

Encourage the use of digital tools to foster collaborative learning environments. Tools like Animaker can be used to facilitate group projects and collaborative assignments, helping students develop communication and teamwork skills alongside technical abilities

5. Regularly Update Educational Technology Resources:

Educational institutions should ensure that digital learning tools are regularly updated and that teachers are trained on any updates or new features. This will help maintain the relevance and effectiveness of technology in the classroom.

6. Conduct Regular Evaluations of Technology Impact:

Conduct regular evaluations of the impact of educational technologies on student learning and engagement. This should involve collecting feedback from students and teachers, as well as analyzing academic performance data to understand the effectiveness of digital tools.

7. Promote Research on Digital Tools in Education:

Encourage academic research and case studies on the use of digital tools in education to gather evidence on their effectiveness and to discover best practices for their implementation. This research should also explore the long-term impacts of digital learning tools on student success.

8. Incorporate Parents in Learning Technology Use:

Develop programs to educate parents about the digital tools their children are using at school. This can help parents better support their children's learning at home and reinforce the skills being developed in the classroom.

These recommendations aim to maximize the benefits of digital tools in education, ensuring that technology is effectively integrated to support and enhance learning experiences, develop essential skills, and prepare students for a rapidly changing digital world.

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Immersive Learning in The Metaverse: A New Frontier For Education

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Abstract

The metaverse holds a contemporary frontier in higher education, especially in technical and vocational education and training (TVET). This study investigates whether immersive learning can be realized with metaverse provisions through a TVET virtual campus lens. The goal is to explore how the platform can be used in vocational training resources and environments to improve students' engagement and outcomes. This study employed a mixed-method approach, combining quantitative and qualitative data collection methods, including pre- and post-intervention surveys, focus group discussions, and in-depth interviews with 100 TVET students from the TVET programs. The results suggest a substantial increase in student engagement and learning outcomes, with increased motivation, improved collaboration, and a stronger community cited. The virtual campus facilitated broad geographical participation due to its flexibility and accessibility. These findings have far-reaching implications for the future of TVET and education, offering a possible solution to many challenges through an engaging, flexible, resource-rich learning environment.

Keywords: Metaverse, Immersive Learning, TVET, Virtual Campus, Educational Technology

Introduction

The metaverse, a virtual world that combines digital and physical spaces, offers a transformative approach to education, particularly in the context of Technical and Vocational Education and Training (TVET). As Brunei's Digital Transformation Plan (2023-2027) highlights, embracing advanced technologies in education can foster a digitally literate society. This study explores whether a virtual campus model within the metaverse can address challenges in traditional vocational training by enhancing engagement, motivation, and practical skills.

Literature on immersive learning environments, such as those discussed by Dede (2009) and De Freitas (2008), underscores the potential of virtual and augmented reality to provide interactive, collaborative learning spaces. Focusing on immersive educational strategies, this research examines how these environments impact TVET education regarding flexibility, access, and student outcomes.

Literature Review

Immersive interfaces that combine physical and digital learning experiences have been shown to enhance engagement significantly (Dede, 2009). Virtual platforms allow students to explore real-world scenarios that are otherwise challenging to simulate, offering interactive and engaging learning environments essential in TVET (De Freitas, 2008).

Immersive Learning and Student Engagement

Immersive interfaces combining physical and digital learning experiences have been shown to enhance engagement significantly (Dede, 2009). Virtual platforms allow students to explore real-world scenarios that are otherwise challenging to simulate, offering interactive and engaging learning environments essential in TVET (De Freitas, 2008).

Cooperative and Collaborative Learning in Virtual Environments

Collaboration is a core component of vocational training. Research by Johnson and Johnson (1999) and Slavin (1988) demonstrates the positive effects of cooperative learning on critical thinking and communication skills. The metaverse's interactive platform fosters team-based projects and enhances student engagement through cooperative learning models.

Digital Equity and Access

The metaverse can democratize access to education, making resources available to students regardless of geographical limitations (Fowler, 2015). However, challenges such as digital equity and resource access remain, with Zhao (2009) emphasizing the need for reliable internet and appropriate hardware to ensure inclusivity.

Pedagogical Integration of The Metaverse

Successful metaverse implementation in educational settings relies on integrating it with sound pedagogical practices. Jayaram et al. (1997) state that virtual environments must have clear educational objectives and strategies to enhance their effectiveness. Using project-based, experiential, and cooperative learning in virtual spaces can help ensure that the metaverse becomes a valuable tool for improving learning outcomes. Educators must also focus on embedding real-world tasks and problem-solving scenarios within the metaverse to align with vocational education goals (De Freitas, 2008).

The Role of The Metaverse in Workforce Development

The metaverse can democratize access to education, making resources available to students regardless of geographical limitations (Fowler, 2015). However, challenges such as digital equity and resource access remain, with Zhao (2009) emphasizing the need for reliable internet and appropriate hardware to ensure inclusivity.

The literature underscores the metaverse's potential to revolutionize vocational education by providing immersive, interactive, and collaborative learning environments. However, its success depends on addressing challenges related to digital equity, pedagogical integration, and accessibility for all students. Combining the strengths of immersive learning, cooperative learning, and digital technologies, the metaverse offers a promising pathway for enhancing student engagement, improving learning outcomes, and preparing students for the workforce.

Objectives

The primary aim of this study is to explore the effectiveness of the metaverse in enhancing learning experiences in TVET programs. The research objectives are:

1. To assess the impact of the metaverse on student engagement and motivation.
2. To evaluate the effectiveness of the metaverse in improving learning outcomes.

The corresponding research questions are:

- How does the metaverse affect student engagement and motivation in TVET programs?
- What impact does the metaverse have on students' learning outcomes?
- What challenges and limitations do students face when using the metaverse in TVET education?

Study Design

The study was designed in four key stages to evaluate the effectiveness of metaverse-based learning in TVET programs.

- In Stage 1, the research began by defining the problem statement and identifying the challenges faced in traditional TVET learning environments. A Literature Review and a Preliminary Study were conducted to explore the existing research on immersive learning and virtual environments. Data collection methods in this stage included Student Questionnaires and Staff Interviews to gather baseline insights.
- In Stage 2, the focus shifted to Designing a Solution, which involved developing a Metaverse Prototype Application tailored to the needs of the TVET students. This stage included close collaboration with educators and developers to ensure the design of the virtual campus addressed the specific learning requirements of vocational training.
- Stage 3 centered on implementing the Metaverse Intervention, where the developed prototype was introduced into the learning environment. This phase involved systematic Data Collection through the administration of surveys and achievement tests to measure the impact of the metaverse intervention on student engagement and learning outcomes.
- Finally, in Stage 4, the collected data were subjected to Data Analysis using various statistical techniques to determine the effectiveness of the intervention. This included Statistical Analysis to compare pre- and post-intervention results and draw conclusions on the benefits of immersive learning in metaverse environments for TVET students.

By integrating qualitative and quantitative research methodologies, this systematic approach provided a comprehensive, multi-faceted exploration of the metaverse's impact on vocational education. Combining data from surveys, interviews, focus groups, and virtual campus analytics allowed for an in-depth understanding of how immersive environments influence student engagement, motivation, collaboration, and learning outcomes. This holistic approach captured the statistical significance of changes in learning metrics. It delved into students' experiences and perceptions, offering rich, nuanced insights into the benefits and challenges of using metaverse technologies in education. By addressing objective data and subjective experiences, the study delivered a well-rounded analysis of how the metaverse can transform traditional educational models, making them more engaging, flexible, and accessible, particularly in vocational training. This comprehensive methodology sets a solid foundation for future research on the role of immersive technologies in enhancing educational environments across diverse learning settings.

Methodology

This study employed a mixed-method approach, integrating quantitative and qualitative data collection methods to comprehensively understand the metaverse's impact on enhancing learning outcomes in TVET programs. The study involved 100 TVET students as participants, with this sample size chosen to balance statistical power and qualitative depth. The sample provides sufficient statistical power for reliable quantitative analysis, allowing for meaningful detection of changes in engagement, motivation, and learning outcomes. Additionally, this number facilitates subgroup analyses and captures the diversity typical within TVET cohorts, where students often have varied backgrounds and digital proficiency. This sample size also supports rich, individual qualitative insights without overwhelming data complexity, ensuring the findings are generalizable and deeply descriptive.

Data were collected through pre- and post-intervention surveys, focus group discussions, in-depth interviews, and virtual campus analytics, each contributing unique insights into student engagement and learning experiences. The pre-and post-intervention surveys, completed by all 100 participants, were designed to capture changes in engagement, motivation, and learning outcomes before and after the metaverse-based intervention. The pre-intervention survey gathered baseline data on students' initial levels of engagement, motivation, and prior exposure to virtual learning platforms. The post-intervention survey, administered after the metaverse experience, focused on students' experiences with the platform, including ease of use, perceived benefits, satisfaction, and impact on learning. The study measured the metaverse's effect on key learning metrics by directly comparing pre- and post-intervention data from the same participants.

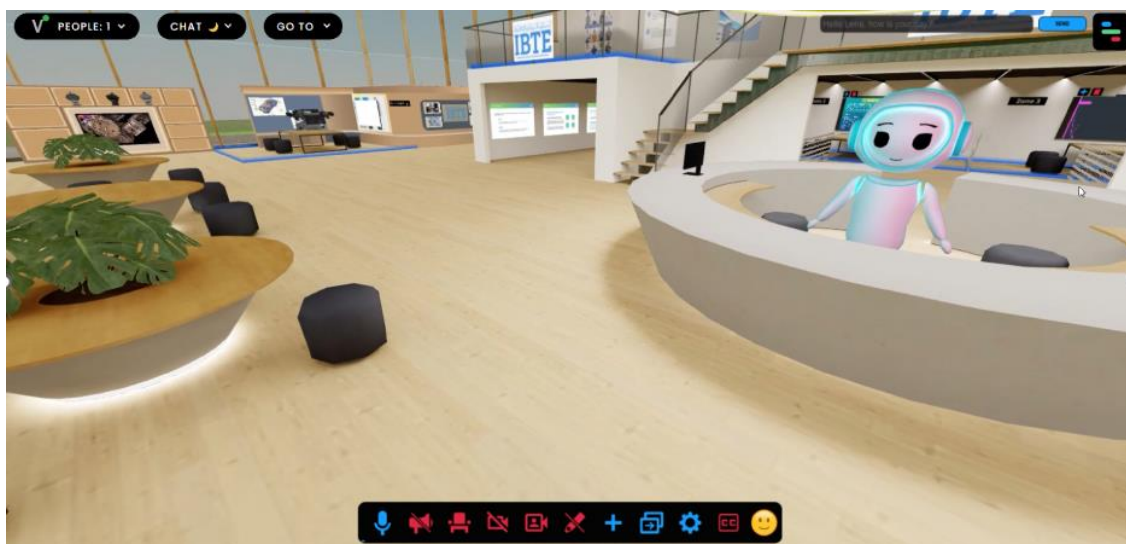
To explore the metaverse experience in more depth, focus group discussions were conducted with a subset of 30 students, arranged into small groups of five to six participants. These sessions were structured around open-ended questions to examine the immersive nature of the virtual environment, its effects on learning and collaboration, and any challenges students face. Conducting discussions in a group setting encouraged participants to reflect collectively on their experiences, providing more affluent, more nuanced data that might not be captured through surveys alone.

In-depth interviews with 15 selected participants from the original sample were held for further detailed individual insights. These interviews allowed for a deeper exploration of specific aspects of the metaverse experience, such as the usability of the virtual campus, the quality of learning materials, and the level of instructor support. Participants shared personal stories and specific feedback about their journey within the metaverse, adding valuable qualitative data that provided a human-centered perspective on the study's findings.

Additionally, virtual campus analytics were gathered to provide objective data on the engagement and participation of all participants within the metaverse. These analytics tracked key metrics such as login frequency, session duration, involvement in virtual classes and discussions, and interactions within the virtual campus. This objective data served as a complementary perspective, validating self-reported and qualitative findings by offering a concrete view of how students interacted with and benefited from the metaverse-based learning environment.

Figure 1

Screenshot of the Metaverse Virtual Campus Environment used in the study. This figure illustrates the interface and features available to students, such as interactive chat functions, navigation tools, and the overall virtual campus layout.



Note. The virtual campus provided students with interactive elements that facilitated engagement and collaboration, including real-time chat, navigation within the virtual environment, and designated spaces for collaborative learning.

Quantitative data from the surveys were analyzed using SPSS software, which applied descriptive statistics, paired t-tests, and regression analysis to assess engagement and changes in learning outcomes. The qualitative data from focus groups and interviews were transcribed and analyzed thematically using Nvivo software, identifying recurring themes and insights into students' experiences. This mixed-methods approach allowed for the triangulation of data sources, enhancing the validity of the findings and providing a holistic understanding of the metaverse's effectiveness in vocational education and training.

Results

How Does the Metaverse Affect Student Engagement and Motivation in TVET Programs?

The pre-and post-intervention surveys revealed a notable increase in student engagement and motivation. The mean engagement score rose significantly from 3.2 (pre-intervention) to 4.5 (post-intervention) on a 5-point scale. This 40.6% increase in the engagement score was statistically significant, as indicated by a paired t-test ($t(99) = 9.47, p < 0.001$). Additionally, the calculated effect size (Cohen's $d = 0.95$) suggests a significant effect, meaning the metaverse intervention substantially impacted student engagement. This outcome aligns with feedback gathered from focus group discussions and individual interviews, where students consistently described the interactive and immersive qualities of the metaverse as making learning more engaging and enjoyable.

Observational data from virtual campus analytics supported these findings, showing increased student participation, with students spending more time actively engaged in virtual classes and collaborative activities. Regarding group work, 66.7% of students reported learning more effectively in groups. Most participants indicated enjoyment in the collaborative aspects of the virtual campus, enhancing their understanding of the subject matter. Additionally, 58.3% disagreed with the notion that cooperative activities were a waste of time, demonstrating openness to collaborative learning methods. Analytics data further showed that students involved in group work had higher interaction levels, with 41.7% reporting active peer engagement during group activities.

Evaluations of team processes revealed that 41.7% of students felt they could solve problems more effectively as a group than individually, though 50% remained neutral. Notably, 25% of students strongly agreed, and another 25% agreed that they knew their responsibilities within their group. This suggests that clear role assignments facilitated effective teamwork. Regarding skill development, 75% of students reported actively contributing ideas to their groups. Furthermore, 41.7% of students agreed that the metaverse environment helped them develop critical thinking skills, particularly decision-making. Half of

the participants reported improved communication skills, though some students continued to feel shy and passive.

Table 1 below summarizes the pre-and post-intervention survey results, providing an overview of the statistical analysis of student engagement, motivation, and learning outcomes.

Table 1

Pre- and Post-Intervention Survey Results on Student Engagement, Motivation, and Learning Outcomes

Category	Pre- Intervention	Post- Intervention	Percentage Increase	t-test (p-value)	Effect Size (Cohen's d)
Mean Engagement Score	3.2	4.5	40.6%	< 0.001	0.95
Students Reporting Effective Group Work (%)	66.7%	75%	12.5%	N/A	N/A
Students Reporting Improved Communication Skills (%)	25%	50%	100%	N/A	N/A
Mean Pre- and Post-Test Score	29.4	62.2	111.4%	< 0.001	1.27
Students Showing Improvement in Post-Test Scores (%)	60%	92%	53.3%	N/A	N/A

Note. Survey results illustrate shifts in student engagement, motivation, and learning outcomes following the metaverse intervention. Statistically significant p-values and effect sizes demonstrate the intervention's impact.

The qualitative results from focus groups and interviews revealed vital insights. Themes of immersion and interactivity emerged, with students expressing that the metaverse allowed them to engage more hands-on, enhancing their understanding and retention. Another central theme was collaboration and teamwork, as many students found the virtual campus fostered effective communication and problem-solving. Adaptability and personalization also emerged, with students appreciating the metaverse's flexibility in catering to individual learning styles and supporting independent and group learning. Finally, skill development emerged, with students noting that the metaverse allowed for practical skill application in a risk-free environment.

What Impact Does the Metaverse Have on Students' Learning Outcomes?

The impact on learning outcomes was marked by a significant improvement, as indicated by test scores. The mean pre-test score was 29.4, while the post-test score increased dramatically to 62.2, reflecting a 111.4% improvement. The results of a paired t-test confirmed the statistical significance of this increase ($t(99) = 11.23$, $p < 0.001$), and the effect size (Cohen's $d = 1.27$) indicated a substantial effect, signifying a significant impact of the metaverse-based learning environment on student learning effectiveness. Additionally, 92% of students improved post-test results compared to pre-test scores, underscoring the platform's effectiveness in facilitating learning.

Student performance was further evaluated using a rubric that assessed behaviors in group activities based on five cooperative learning elements: positive interdependence, individual accountability, face-to-face interaction, interpersonal group skills, and group processing. Group C scored best overall with the highest engagement and cooperation, particularly in positive interdependence and group processing. In contrast, Group A struggled with collaboration and was affected by absences, which impacted their scores on positive interdependence and interaction. Group B performed well but exhibited some over-reliance on individual members, while a lack of preparation and overconfidence hindered Group D's performance.

The group achievement test further highlighted these performance differences. Group C had the highest rubric scores and achieved the top mean score of 83.6% on the group achievement test, while Group A performed the lowest due to weaker collaboration. These results reinforce the importance of cooperative learning elements in maximizing the benefits of metaverse-based group work.

What Challenges and Limitations Do Students Face When Using the Metaverse In TVET Education?

While the metaverse offers substantial opportunities for enhancing vocational education, students encountered some challenges that, when addressed, could further improve the learning experience. One common hurdle was the technical learning curve, as students initially needed help with the virtual tools and interfaces. However, this challenge also prompted growth in digital literacy, a valuable skill in today's digital landscape. Over time, as students adapted, they reported increased confidence in navigating digital environments, suggesting that these initial challenges ultimately benefited their digital competency.

Another significant challenge was access to resources, specifically hardware and reliable internet connectivity. Some students from underserved areas faced difficulties accessing the necessary devices or stable internet connections, highlighting the importance of institutional support. Efforts such as loaner equipment and campus-based resources have been explored to provide more equitable access, underscoring the need for continued investment in infrastructure to bridge the digital divide and foster a more inclusive learning environment.

The transition to immersive learning also required some adjustment for students accustomed to traditional, passive learning models. Initially, some students struggled with the platform's interactive demands but eventually recognized its benefits. Many found the metaverse's hands-on, practical nature facilitated more profound engagement with course material and skill retention. Over time, students adapted to this new learning style, gaining autonomy and becoming more self-directed learners, crucial skills in education and the workforce.

Occasional technical glitches and platform instability posed challenges in the early implementation stages. However, institutions provided ongoing technical support and updates, ensuring a smoother learning experience as the platform evolved. As the metaverse stabilized, students increasingly appreciated its interactive features, demonstrating the importance of continuous improvement for successful technology integration.

Finally, the need for instructor support and training emerged. While some students desired more guidance, many instructors embraced the opportunity to learn alongside their students. As educators become more familiar with the metaverse's capabilities, they can more effectively integrate it into their teaching. This professional development is essential to maximizing the metaverse's educational potential, ensuring that students and instructors benefit from the platform.

In conclusion, the challenges students face while using the metaverse in TVET education represent growth opportunities. As familiarity with immersive learning technology increases, so does student and educator confidence. Addressing these challenges through targeted support and investment can further optimize the metaverse, making it an even more powerful tool for vocational education that fosters digital literacy and practical skills.

Discussion

The results of this study highlight the metaverse's potential to enhance learning experiences in TVET programs. Quantitative and qualitative data show that metaverse-based learning significantly boosts student engagement and motivation. Students cited the interactive, gamified elements of the virtual campus as key factors in making learning enjoyable, which aligns with previous research on immersive education (Dede, 2009; De Freitas, 2008).

One notable finding was the metaverse's impact on collaboration. The virtual environment encouraged teamwork and improved communication skills, which are critical in vocational training. However, not all students found group work easy, particularly those preferring independent study. To address this, educators could assign specific roles in group projects to ensure clear responsibilities or offer individual and collaborative learning pathways to suit different preferences.

The positive shift in post-test scores demonstrates that the metaverse aids knowledge retention. Practical strategies for educators could include simulation-based assessments, like virtual safety drills, to test skills in realistic settings. Gamified modules, such as badges or points, can also boost motivation, helping students feel a sense of achievement for mastering skills. Customizable pathways, where students complete solo tasks before joining group simulations, offer flexibility for varied learning styles.

Initial technical challenges underscore the need for onboarding and ongoing support. Tutorials and guides can help students adapt to the platform, gradually building their digital confidence. Overall, the metaverse addresses key challenges in TVET, from flexible access to critical skill-building. Educators can leverage the metaverse by implementing structured group tasks, gamified modules, and simulation-based learning to create more engaging, practical, and inclusive educational experiences. This study lays the groundwork for future research on the metaverse as a valuable tool in vocational education.

Another key benefit observed was the metaverse's role in fostering digital literacy and adaptability, essential skills in today's technology-driven world. As students navigated the virtual campus, they practiced vocational skills. They built familiarity with digital tools and interfaces, preparing them for modern workplaces where virtual collaboration and digital proficiency are increasingly required. This immersive technology exposure helped students become more comfortable with digital environments, potentially easing future transitions to emerging tech-driven platforms. Educators can capitalize on this by incorporating tasks that simulate real-world digital workflows, such as virtual project management and remote teamwork exercises, which prepare students for tech-integrated roles in their fields.

Social Implications

This study comprehensively explores the metaverse's impact on vocational education by integrating qualitative and quantitative research methodologies. Combining data from surveys, interviews, focus groups, and virtual campus analytics provided a multi-dimensional view of how immersive environments affect student engagement, motivation, collaboration, and learning outcomes. This holistic approach captured the statistical significance of changes in learning metrics and revealed nuanced insights into student experiences, illustrating the benefits and challenges of metaverse technologies in education (Dede, 2009; De Freitas, 2008).

Additionally, this study highlights the metaverse's social implications. The collaborative and immersive nature of the platform significantly enhanced social interaction and teamwork, essential skills in the modern workforce (Johnson & Johnson, 1999). By bridging geographical barriers, the metaverse enabled more inclusive participation for students in remote or underserved areas, fostering digital equity (Fowler, 2015). Providing access to resource-rich virtual environments helps level the playing field for students from diverse backgrounds, addressing disparities in access to educational tools and facilities (Slavin, 1988).

Educators can leverage these benefits through intervention strategies for implementing metaverse-based learning. One approach is to structure simulation-based group projects that replicate real-world scenarios. For example, students in a virtual mechanical workshop could collaboratively assemble or troubleshoot parts, allowing for hands-on experience in a risk-free setting. Educators can also utilize gamified learning elements within the metaverse, such as badges or rewards for task completion, to motivate and engage students. Another strategy is to assign role-based responsibilities within virtual teams, such as designating one student as the “project lead” and others as “technicians” or “researchers” to foster accountability and teamwork skills.

The study further illustrates how immersive technologies like the metaverse can prepare students for a future where digital collaboration and innovation are vital (Metz, 2011). As vocational education plays a crucial role in workforce development, these technologies help produce digitally literate, socially responsible professionals (Ghaith & Yaghi, 1998). Such applications of the metaverse in education serve not only to enhance learning but also to promote digital citizenship, social inclusion, and equity—qualities increasingly crucial in our interconnected world (Calderon et al., 1998).

This research sets a foundation for future studies on the role of immersive technologies in education and societal development. By providing educators with actionable strategies for metaverse-based learning, this study opens new possibilities for transforming learning environments, enhancing workforce readiness, and promoting social good (Fong, 2010).

Recommendations

Based on the findings of this study, several recommendations are proposed to enhance the use of metaverse technologies in vocational education and training (TVET) programs. First, improving the technical support and training provided to students and instructors is essential. Some participants encountered challenges navigating the metaverse environment, underscoring the need for thorough onboarding sessions and ongoing technical assistance. By ensuring that users are comfortable with the platform, institutions can maximize the benefits of immersive learning. Training should focus on building digital literacy, especially for those less familiar with virtual technologies, to bridge gaps and enhance the learning experience.

Another key recommendation is to provide more tailored learning approaches within the metaverse. While the platform fosters collaboration, some students prefer working independently. Institutions should design flexible learning environments for group work and individual tasks to accommodate diverse learning preferences. Hybrid models, which blend independent study with collaborative projects, can ensure that all students engage meaningfully with the content in ways that suit their learning styles.

Additionally, the pedagogical strategies must support the successful integration of metaverse technologies. Educators should incorporate proven educational models, such as cooperative learning, project-based learning, and experiential learning, into the metaverse environment. This will ensure that the platform is not just a technological tool but a transformative educational space that aligns with teaching objectives and enhances practical skills development. Collaboration between educators and developers is crucial in designing metaverse environments that are pedagogically sound and aligned with learning goals.

To address the issue of digital equity, institutions should expand access to the metaverse by offering solutions that support students in remote or underserved areas. The platform's potential to bridge geographical barriers makes it a powerful tool for inclusivity. However, ensuring stable internet access, providing affordable or subsidized technology, and offering alternatives for low-spec devices are necessary to make this technology accessible to all students, regardless of socioeconomic background.

Furthermore, future research and development should continue to explore the long-term impact of metaverse-based learning on student outcomes, including skill retention, employability, and workforce readiness. Studies should also investigate how metaverse technologies can be adapted for different vocational disciplines beyond the initial fields tested. Partnerships between educational institutions, industry stakeholders, and technology developers are essential to refine and expand the metaverse's educational role. The metaverse should be used for vocational training and to promote digital citizenship. This includes educating students on online safety, privacy, responsible digital behavior, and ethical issues in the digital world. By incorporating these elements into the curriculum, institutions can effectively prepare students to navigate virtual and real-world environments, ensuring they are digitally competent and responsible in their professional and personal lives.

The metaverse offers tremendous potential for transforming vocational education, but its success depends on thoughtful implementation, continuous support, and adaptability to various learning needs. By addressing these factors, educational institutions can unlock the full potential of immersive technologies to enhance learning experiences and prepare a more digitally literate and inclusive workforce.

Conclusion

This study has demonstrated the metaverse's significant potential as a transformative tool for vocational education and training (TVET). The metaverse has been shown to enhance student engagement, improve learning outcomes, and foster critical skills such as communication, problem-solving, and teamwork by offering immersive, interactive, and collaborative learning environments. The positive impact on student motivation and practical skill retention highlights the value of integrating immersive technologies into vocational education.

While technical difficulties, access to resources, and adapting to new learning methods were encountered, these issues provided valuable growth opportunities. Students who initially struggled with the technology

developed essential digital literacy skills, which will serve them well in the increasingly digital future. Furthermore, institutions have begun addressing access and resource disparities by exploring solutions to provide more equitable opportunities for all students.

The metaverse has also shown promise in fostering digital equity, bridging geographical gaps, and offering scalable, flexible learning environments tailored to various vocational disciplines. As educational institutions continue to invest in the necessary infrastructure and provide ongoing support for students and instructors, the barriers to full adoption will diminish.

In conclusion, the metaverse is a powerful tool for reimagining vocational education, equipping students with the technical and soft skills needed to succeed in the modern workforce. As technology continues to evolve, so will the opportunities for immersive learning, allowing TVET programs to provide more dynamic, engaging, and inclusive educational experiences. Future research and development will be essential in refining and expanding the metaverse's capabilities, ensuring its long-term success as a vital component of modern education.

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Exploring The Use of The Creative Movement Approach to Introduce Vocabulary to Preschool Children

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Abstract

The concept of learning through play has long been a favourable approach to use in teaching young learners as they are active and energetic. 1. Purpose. The purpose of the study is to examine the use of the creative movement approach to help make learning vocabulary for preschool children more fun and effective. 2. Methodology. The study applied a qualitative approach and to collect the data needed to meet the study's objectives, the following tools were used: video recordings, semi-structured interview, reflective journal, students' work from the eight preschool who were the study participants. To gauge students' active participation level in this research, the Leuven Scale Rubric was adopted. 3. Findings. The findings suggested that using the creative movement approach to teach vocabulary had a positive impact on young learners' participation level and ability to remember the meaning and spelling of the vocabulary. In addition, the challenges of implementing the creative movement approach were addressed and the children's reactions to and opinions of the approach were examined. 4. Originality. The vocabulary was introduced by means of music, singing and creative movements designed to mimic the vocabulary item taught. The children carried out the movements which also involved the spelling of the words, an approach which to my knowledge has never been used before. Overall, the research has provided insight into the use of the creative movement approach in learning vocabulary among Bruneian preschool children.

Keywords: Creative Movement Approach, Learning Through Play, Preschool, Kindergarten, Vocabulary, Science, Brunei

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Introduction

Lessons designed with developmentally appropriate practice (DAP) in a child-centred way are seen as a productive teaching approach (Akin, 2013). Helm and Katz (2011) stated that it is a delicate matter to introduce DAP into the classroom setting as the teacher's attitude and point of view towards their children affects the implementation of DAP and the development of the child. As DAP encourages a child-centred approach, the idea of letting children explore their physical movement outside physical education or play time sessions and implementing it into classroom sessions supports the concept.

This paper discusses implementing the creative movement approach in teaching vocabulary to young learners in the classroom setting. The significance of the study lies in its deepening of my understanding of the effectiveness of using the creative movement approach in teaching vocabulary to young children in a preschool setting. The aim of this study was to see to what extent the creative movement approach can help children learn vocabulary and whether children enjoy the integration of the creative movement approach in learning vocabulary. It was also to investigate the challenges and the outcomes of implementing the creative movement approach in the lessons.

This study is intended to share with Brunei's preschool teachers how to use creative movement and the effectiveness of using this approach in the classroom setting. It also helps promote the idea of learning through play to preschool teachers and acts as an assurance as to how they can explore the usage of creative movement and perhaps adapt it to their lessons. This research is a qualitative design because the investigation only involves eight children. The approach taken suggests a new way of teaching vocabulary in preschool classes which may be of wider interest in similar classrooms elsewhere.

Literature Review

Movement is considered important in the education field because it not only helps to develop young children's motor skills but it offers beneficial intellectual development. Several research reports demonstrate that the development of motor skills is largely dependent on the amount of active movement a child has shown since birth (Magill & Anderson, 2014; Zarotis, 2020).

Gardner's (1983) Multiple Intelligences (MI) theory saw intelligence not as one unitary concept but involving seven types of intelligence, the most interesting of which from the point of view of the approach taken in this thesis is bodily-kinaesthetic. The core components of this type of intelligence according to Gardner and Hatch (1989, p.6) are "abilities to control one's body movements and to handle objects skilfully". Gardner (2011) further pointed out that children possess the potential to be creative between the age of three to eight as it is the crucial point on creativity development. Movement is meant to bring discovery and expressing one's feelings and therefore it can be seen as a form of self-expression tool for young children. Furthermore, Gardner (2011) also stated that creative movement can enhance children's imagination and foster their creativity.

When the creative movement approach is applied, it does more than just move our bodies because it stimulates our brain's left and right hemispheres. When both hemispheres are activated and process information together, it builds connections between them, heightens critical thinking skills and increases the probability of the information being retained (Sousa, 2016). Therefore, physical movement is not just simply moving around, as the brain needs to process the instruction given by the teacher, which means young learners need to understand the description given by the teacher and act by using the body to follow the instruction. In addition to the movement of the body, it enriches their understanding and cognitive and emotional reactions.

One of the reasons that children tend to have a high bodily-kinaesthetic intelligence is that such intelligence is closely related to play. It may involve imaginary creations and centres around different kinds of movement. This movement may involve objects but very often is concerned with the movement of the child's body in some way. The child's bodily-kinaesthetic movement involves play and certain aspects of learning that will contribute to their construction of reality. Therefore, the combination of body movement, play and thinking process will help young children to learn more effectively.

One of the most influential theories of play in education is that by Vygotsky. According to Bodrova and Leong (2015), Vygotsky thought that preschool children learn to develop the type of behaviour that is necessary for more advanced thinking by means of play. Play has long been considered an essential component of preschool education and in fact play is the fundamental basis of early childhood education (Arnott, 2023).

Learning through play is an approach where children are at the centre of the learning scope where play dictates the flow of the class and learning is perhaps not immediately apparent. Zosh, Hopkins, Jenson, Kiu, Neale, Hirsh-Pasek, Solis and Whitebread (2017) stated that learning through play gives an effective learning outcome and it contributes to young children's development as it drives engagement by encouraging children's active natures and relates to their desire for fun and interaction with others.

Bateson (2014) pointed out that play can be seen in a new light, where play can be used as a tool and combined with another tool to create a new perspective. With this perception, this new aspect displays creativity. Therefore, linking play with a tool such as creative movement will bring out a different and fresh teaching approach. Creative movement can be fun and engaging by employing drama or movement techniques which will impact young learner's learning domain. Braund (1999) reiterated that when children engage in re-enacting events, it will be easier for them to recall and comprehend information more effectively. Bringing in these two concepts into the creative movement approach enhances children's ability to learn, linking their socio-emotional area with their cognitive development. If children see and feel during the learning process, they will be able to understand the topic better and the retention in the memory will be stronger.

Creative movement has also been used to teach languages to very young children (Sila & Lenard, 2020). However, this study is a very specialised aspect of language learning, since it was used to teach pronunciation and phonological awareness. Although the creative movement has been used to teach English language, it has not yet been used anywhere to teach vocabulary to young children as described in this research.

Methodology

As this research is based on the qualitative research concept, the participants involved are usually small and do not meet the thresholds necessary for running tests of significance. In addition, since the research is only with one class, there are both practical and ethical problems in running control and experimental groups in such an environment. Qualitative research allows much greater in-depth analysis of small groups and is more suitable when the researcher is, in this case, an insider.

The participants that were involved in this study were the children taught by me who was the researcher and also acting as their teacher from a private preschool. The children's age ranged from five to six years old. There were twenty-four children in the classroom and eight lessons were conducted. Due to the time frame limitations and the qualitative approach which requires a detailed in-depth analysis, eight children were randomly chosen as the focus of this data collection. The children are referred to as Child A-H.

This research used a qualitative approach to gain valuable data and understanding on the intervention of the creative movement approach in learning vocabulary in one Brunei preschool class. On that account, to obtain suitable data that were required to address the research questions, I chose reflective journals, children's work, observation logs and semi-structured interviews as my research instruments. The research questions that were formed for this purpose of this study are listed in Table 1 below.

The instrument and sample used in this research for each research question are summarised in Table 1 below.

No.	Research Questions	Instruments	Participants
1	How does using the creative movement approach improve the teaching of vocabulary to preschool children?	• Observation Logs • Reflective journals	1 KG3 class (8 children) Teacher Researcher
2	What are the challenges and outcomes of using the creative movement approach when teaching preschool children vocabulary?	• Observation Logs • Reflective journals • Children's work	1 KG3 class (8 children) Teacher Researcher
3	What are the children's reactions to, and opinions about, using the creative movement approach in their lessons?	• Observation Logs • Semi-structured interviews	1 KG3 class (8 children) Teacher Researcher

Table 1: *Research Questions and Instruments Used*

The basic measurement of the children's engagement in the creative movement involves the concept of how intensely they were involved in the lesson (MacRae & Jones, 2023). This intensity of involvement can be operationalised by using the well-known Leuven Scale (Laevers, 1994) which measures classroom engagement and wellbeing via five scales. I slightly modified the Leuven Scale because it provides clearly observable activities as indicators of the scale. Table 2 below further describes each level of the Leuven Scale, adapted from MacRae and Jones (2023) following Ferre Laevers (1994), used in this study.

Table 2: *Adaptation of the Leuven Scale (MacRae & Jones, 2023)*

Leuven Scale	Adapted Description
Level 1: Low activity	The child is absent-minded and shows minimal participation and attention level.
Level 2: A frequently interrupted activity	The child is participating with frequent interruptions so that half of the session is not taking part.
Level 3: Mainly continuous activity	The child is mainly participating but at the routine level and is easily distracted.
Level 4: Continuous Activity with intense moments	The child is participating with high involvement for considerable periods of time. Involvement is demonstrated by a considerable amount of concentration, creativity, energy and persistence.
Level 5: Sustained intense activity	The child is participating with very high engagement for almost all the observation periods. Engagement is demonstrated by consistent high levels of concentration, creativity, energy and persistence.

The data analysis approach that is used to analyse the qualitative data collected in this research is the thematic approach. Braun and Clarke (2006) identified six steps to conduct thematic analysis; (a) familiarising yourself with the data, (b) generating initial codes, (c) search for themes, (d) reviewing themes, (e) defining and naming themes, and (f) producing the report. As one type of data collected is in video format, the thematic analysis was useful to find the codes and themes based on the data collected. The thematic analysis also helped in analysing children's perceptions on the research questions with a set of themes.

The movements that were involved in the eight sessions were designed to cater to the vocabulary that was included in the science topic on a 'plant'. The vocabulary was 'air', 'soil', 'water', 'sunlight', 'roots', 'leaf', 'stem', 'flower', 'fruit' and 'seed'. There was also a set of movements designed to explain the stages of a plant's growth through singing and dancing. The movements were designed to the best of my capability to fit the image of the vocabulary.

Findings

The findings were analysed to discover the answers to the three research questions mentioned earlier on the use of the creative movement approach in preschool. Using thematic analysis, there are a total of four main themes and sub-themes identified, shown in Table 3 below.

Themes Number	Themes	Sub-themes
1	Positive learning outcomes (RQ1)	• High focus and participation level. • Movement as an additional aid.
2	Easy to remember (RQ 2)	• Relationship between movement and object words. • Self-correction. • Able to do the spelling and movements with minimal assistance.
3	Importance of Practice Sessions (RQ 2)	
4	Enjoyment of Learning (RQ 3)	

Table 3: *Themes and Sub-themes*

Main Theme 1: Positive Learning Outcomes

The data collected showed that implementing movement into teaching vocabulary made it easier for children to learn. To answer research question 1, the first main theme identified was positive learning outcomes. Two sub-themes were identified from this main theme: (a) high focus and participation level, and, (b) movement as an additional aid.

(a)The data taken showed that during the lessons, children were sitting and listening attentively. Little distractive movements or behaviours were displayed. The children's focus level is determined by the Leuven Scale explained earlier. Six out of eight children exhibited level five in the focus level, while two children exhibited level four. Seven children exhibited level five for the participation level and one child exhibited level four. They were seen concentrating and being willing to participate in making those movements while learning and spelling the vocabulary. Although Child D and E were somewhat holding

back during the first two lessons, they overcame their shyness and joined their classmates eagerly afterwards.

(b) The movements were designed as a teaching aid with the aim to capture children's attention and boost their confidence. Child D and E were struggling in the beginning of the sessions. Significant results were found in the data where Child D and E's growth were displayed through their ability to identify the mistakes they made by themselves as shown by the quotes below.

"...they were able to remember what they learned and identify the mistakes they made by themselves. This showed that children are learning and remembered what they learned".

(Reflective Journal 6, 16/08/2023)

"They were able to remember the movement and the spelling".

(Observation Log Lesson 8, 07/09/2023)

To implement movements to explain the stages of a plant's growth, I designed the movements and accompanied it with a song created by me. I taught the stages of a plant's growth in four stages: seed, sprout, seedling and plant. All eight children were showing keen interest in learning a plant's life cycle and were more inclined to learn it through singing and dancing as supported by the data below:

"... were attentive and participated in glee."

(Reflective Journal 6, 16/08/2023)

"...shouted "Yes!" when the teacher asked if they wanted to do the singing and movements again."

(Observation Log Lesson 6, 16/08/2023)

Therefore, movement helped me to teach the lesson content with more ease by supporting the learning content and provided children more proficiency to comprehend the lesson.

It is evident that the creative movement approach to teaching vocabulary does indeed improve learning outcomes. The two sub-themes show that the participation and engagement of children is high and how movement contributes to this outcome. The first sub-theme shows that improvement in learning does take place as the children are almost all continually in a state of very high involvement. The second sub-theme explains this improvement by relating it to how creative movement works to enhance learning and how children acted during the activities.

Main Theme 2: Easy to Remember

The data gathered also demonstrates a second main theme, 'easy to remember' and this answers research question two. Three sub-themes are identified to explain how children are able to remember the vocabulary easily through movements and they are; (a) the relationship between movement and object words, (b) self-correction, and, (c) being able to do the spelling and movements unassisted.

(a) The relationship between movement and object words is essential as the movements were designed to the best of my capabilities to fit the image of the vocabulary. Data was gathered to show that there is a necessary connection between the movements and the words and how this plays a role in heightening children's retention skills, leading to a result where the children remembered the words based on remembering the movements associated with those words.

One example of the movement designed is the word 'soil'. It was spelled with the movement where the hands are shaped into claws and with a pretend digging action. I related it to a Chinese song and explained the action 'dig' is to dig soil. The second example, 'sunlight', began with hands shaped into a circle ('sun'), and hands flickered with an arch shape movement ('light'). The shapes are then combined to say the word 'sunlight'. Another movement designed for 'flower' was derived from a current Korean song trend that the children were familiar with. With the above examples, it showed that movements were designed for children to mimic the structure of the words which will boost their memory retention skills by relating the spelling with movement and the image of the words.

(b) Self-correction in this context means the ability to recognize a mistake one has made and/or make correction with limited assistance. This means that children were able to identify the mistake that was made and make corrections by themselves. The data below support the statement.

"Child D pointed out [to the teacher] that his friends did the wrong movement for 'air' instead of for 'water' [and he] gave the correct movement for the word 'water'".

(Observation Log Lesson 7, 05/09/2023)

"[Child A and F] realised the mistake [for the movement word 'stem'] and changed it [by themselves]".

(Observation Log Lesson 8, 07/09/2023)

With consistency of revision on the movements and vocabulary, seven out of the eight children showed substantial growth from their self-correction ability.

(c) Minimal assistance in this context means that children do not require much help during the practice. The eight children showed that they needed minimal assistance when they were doing the movement and the spelling of the vocabulary. They were exhibiting their capabilities in lesson five after three sessions of revision by doing the movements and spelling the vocabulary with minimal assistance. This is supported by the data below:

"They were able to do the movements and spellings very well. I only needed to assist them a few times".

(Reflective journal lesson 5, 10/08/2023)

"...[children] do most of the movements and spellings with little errors".

(Reflective journal lesson 5, 10/08/2023)

To top it off, I saw how one of the children responded to my statement for the vocabulary 'sunlight'.

Teacher: "because this is a very long word, some of you still cannot remember"

Child D: "I know"

(Observation Log Lesson 5, 10/08/2023)

In the total eight sessions, all the children did six revision sessions altogether. In the final session number eight, all eight children displayed full confidence. Throughout the data, Child E needed a little more assistance while the other seven participants needed minimal assistance for the word 'sunlight', as shown below.

"The teacher only gave 'a hint' about the movement action [and] children [did]...the rest of the movement action by themselves".

(Observation Log Lesson 8, 07/09/2023)

This sub-theme c reinforced sub-theme b where children were able to do self-correction and bridged with sub-theme a where the connection between movements and vocabulary objects helped strengthen the main theme 2 'Easy to remember'. The sub-themes focus on how this ease of remembering took place and give evidence that, although there were challenges, these could be surmounted. This is because the movement was closely connected with the meaning of the word, with seven children out of eight being able to self-correct or correct with minimal assistance from the teacher. Furthermore, the above data suggested a leading possibility that the integration of the creative movement approach will lead to children's agency.

Main Theme 3: Importance of Practice Sessions

A third main theme transpired for research question 2. This theme means practising is important to bring positive learning outcomes. I found out that implementing the creative movement approach into teaching vocabulary requires consistent and regular practice.

This theme arose when I reflected on my first three lessons from the data. There was an unexpected circumstance that caused children to struggle to remember the movements and vocabulary as shown below.

“This lesson [2] was conducted a week later than planned because of the need to prepare for a spelling test”.

(Reflective journal lesson 2, 26/07/2023)

From the above quote gathered from the data, there was a shift in the planned timetable arrangement for the first three lessons. This resulted in Child D and Child E struggling to remember the two vocabulary items, ‘sunlight’ and ‘soil’ and the movements taught in the previous lesson as shown below.

“Child D said “I don’t remember [soil]” and Child E nodded his head in agreement with Child D’s statement”.

(Observation log lesson 4, 09/08/2023)

As I reflected on the timetable shift and implemented more practice time, Child D exhibited more confidence and he showed big improvements through his work. Without consistent practice, children will experience it as challenging to remember the movements and vocabulary. The quote below is shown to support this statement.

“...children will get more familiar with the vocabulary and movements if more practice is done”.

(Reflective journal lesson 4, 09/08/2023)

To see children’s learning development, I gave out two worksheets. The first worksheet consisted of four-word labels, ‘roots’, ‘leaf’, ‘stem’ and ‘flower’ and their tasks were to read and stick the labels to the correct parts of a printed plant drawing. The second worksheet required them to draw and write down the parts of the plant by themselves without displaying the words, ‘stem’, ‘roots’, ‘leaf’, ‘flower’.

Two out of eight children made one spelling error for the word ‘flower’ and the word ‘stem’. Child A, B, C, D and G did not make any spelling mistakes on worksheet two. However, Child E had a different outcome. He was able to recognise the words ‘roots’, ‘leaf’, ‘stem’ and ‘flower’ and stick the labels correctly in

worksheet one but in worksheet two, he was unable to spell the four vocabulary items, 'roots', 'leaf', 'stem' and 'flower' correctly.

Therefore, it can be seen that implementing the creative movement approach into teaching vocabulary does give positive returns. Only one out of eight children displayed ongoing difficulties with remembering the vocabulary spelling when writing.

Main Theme 4: Enjoyment of Learning

The fourth main theme, 'Enjoyment of Learning' answered research question three. From the eight interviews, there was strong feedback where all eight children said they enjoyed doing the movements while learning the vocabulary: "Good." "Reading the words were good." They gave positive responses on liking to have more movements or activities like this in the future. They exhibited positive attitude towards learning vocabulary with movements. I ended the interview by asking the children if they enjoy learning while moving. All eight children gave positive responses that they enjoyed the process of learning vocabulary through movement, e.g, "Yes, I enjoy moving because it's so much fun.", "Yes, because it is fun and I can exercise with it."

Affirming their positive opinions on learning vocabulary using the creative movement approach, I gathered more data to note the children's reactions during the lessons. There is evidence of children experiencing enjoyment of learning throughout all eight observation logs. The data below support this statement.

"[Children are] *laughing and smiling a lot*".

(Observation log lesson 1, 13/07/2023)

"[Child F and G were] *smiling happily and clapped*".

(Observation log lesson 3, 27/07/2023)

The children in this study exhibited cheerful reactions and gave positive opinions towards learning vocabulary using the creative movement approach. Therefore, the above data gathered strongly supported the third main theme, enjoyment of learning.

Discussion

In this section, I analyse the findings and highlight the most significant aspects. The level of involvement exhibited by the children demonstrated that this approach does in fact improve the teaching of vocabulary since young children have a low level of concentration. High participation is an important indicator of successful teaching and learning.

The movements used here in this version of creative movement are not because they are totally original, but because the movements express the children's imagination and are a way of showing their understanding. Nevertheless, the children can at times themselves suggest a particular movement, which did happen, as noted above. This is one area that could be looked at further in future research undertaking. When the creative movement approach is applied, it does more than just move our bodies because it stimulates our brain's left and right hemispheres. When both hemispheres are activated and process information together, it builds connections between them, heightens critical thinking skills and increases the probability of the information being retained (Sousa, 2016). Movement, therefore, as well as being a form of play, helps to bring into operation parts of the brain which are quite separate from the conceptual centres involved in most science learning, or the language centres used in learning new vocabulary. In my research, the development of creative movement in learning helps children to not only strengthen their motor skills but also to learn vocabulary and express their creativity.

In my version of creative movement, the bridge between play and reality is created systematically by finding a movement which is symbolically related to the word being learnt but which is still creative and not literal. Fler argues that "[c]onceptual play illustrates the dialectical nature of imagination and cognition (doubled experience), and shows that they must act in unity" (Fler, 2011, p.236). In creative movement as developed in these lessons imagination and cognition do work in unity, since they are necessarily related by the movement.

Creative movement as used in these lessons acts to knit together the scientific concept taught, the word itself expressing that concept and the imagination linking together the concept and the word by means of play. This play is specifically in the form of movement and the movement itself enables the link between the shape and the word. Movement, therefore, is an integral part of the approach, instantiating as it does the child's play, the meaning of the word, the sound and spelling of the word, while at the same time the movement illustrating the word is given. So, the creative movement provides the way in which the play world of the child can be connected with the conceptual world of the school, as described by Fler (2011). However, it does so in a systematic and consistent way which can be learnt by teachers. The fact that the children found the lessons fun showed that the lessons were not just perceived as lessons to be learned, but activities to be enjoyed as play.

There is a necessary relationship between the movement and the object words taught. There is an element at least of visual mimicry in the movement so that the movement itself suggests the concept taught. Putri (2016) described the use of Total Physical Response (TPR) as a good method which also uses movement in learning vocabulary. Thus the idea to relate the movements as closely as possible to the meaning of the words was challenging but at the same time innovative. It was designed this way to create a better connection between the vocabulary items and enable them to recognise the word and remember the meaning. It is intended for very young children who may not even be able to read or write. Another difficulty was that not all movements can mimic the shape or meaning of the vocabulary item. To merge the spelling with the movements was a challenge as some of the words are long and not consistent as some of the spellings are split unevenly.

The subthemes of 'self-correction' and 'able to do spelling and movement with minimal assistance' are self-explanatory and their importance lies mainly in showing that children did not have too many problems with the approach, but, if they did, these problems could be overcome. If children could self-correct this shows that they understood the concept or movement and there is not a lack of understanding or failure to remember the concept or word.

There will always be some challenges that could potentially or did in fact arise. The main problem that arose was in connection with timetable changes due to an unexpected school event. This resulted in an extra gap between lessons and thus a greater likelihood of the material learned earlier not being so well recalled during the next revision. This is not a feature of the approach but would have happened with any approach.

Children adored the creative movement approach and they described their experience as "fun", "happy" and "great". This is important because it is always good when children enjoy a lesson and the whole approach is predicated on learning through play. If the children did not consider they were playing and having fun, the learning would not have taken place as it did. Thus, that the final research question had a positive answer is vital to the success of the approach.

Clearly, part of the success and the fun in the lesson were because it was a different approach and something new and exciting. Like any approach it might lose some of its appeal if overdone, but the approach will use different movements for each new word, so there is an element of novelty built into the approach. As children grow comfortable, they can tap into their creativity and design the movements. Looking at the research questions as a whole, therefore, it is clear that the creative movement approach is practical, results in increased learning and that the children find it fun. Since this is a new approach in teaching science vocabulary to young learners, it needs further work and testing and so future implications will be covered in the section below. Furthermore, as this approach is used for the teaching of science

vocabulary, it could also be used more generally in ESL classes for the teaching of other types of vocabulary to young learners.

IMPLICATIONS

This study suggests that incorporating the creative movement approach into teaching vocabulary to young children bears positive outcomes in their studies. It creates enjoyment for learning and has a leading potential to foster children's independence in learning. There are several factors found in this study that supported the above statements.

Bearing in mind the limitations of the study, which were built into it and recognised from the start, there are nevertheless some implications which can be drawn from the study. These are merely tentative at the moment but they suggest that the approach put forward does have positive aspects which can be applied in future. More generally, the approach shows that a more disciplined and specific use of creative movement can be utilised to teach specific concepts rather than a somewhat amorphous concept of 'creativity'. Thus, it opens the door to the greater use of movement in the preschool classroom.

In relation to the use of play as a way of developing learning, it suggests a more structured way of bridging the imagination and cognition by means of the conceptual play put forward by Fler (2011). What is described in this approach is a way that the teacher can allow play and fun in the classroom and which uses children's imagination, but which is more structured than Fler.

What the creative movement approach provides is a way for preschool teachers to bring a play-based approach into their classroom which is at the same time rather structured. This means that it can be used to teach particular specific concepts or words that are part of the curriculum. Thus, it has the potential to be widely used in education systems in Asia which are more defined from the Ministry of Education.

Conclusion

In conclusion, the study shows that it can certainly be claimed that the creative movement approach, as taught in my own classroom, was successful in teaching scientific English vocabulary to the eight children in this study.

This study's approach is to go beyond the simple action words and can be applied to a much greater variety of vocabulary by helping young children strengthen their spelling skills. As long as the teacher is creative and innovative enough to implement the creative movement approach into learning vocabulary, it is possible to produce positive results. As the Science subject in Brunei is taught in the English medium, a lot of science

teaching in the early years necessarily involves the introduction of new vocabulary. The creative movement approach transcends that focus where the commands and actions are more advanced and each movement that was designed for the targeted vocabulary is different.

I conclude that using the creative movement approach in teaching vocabulary can increase children's performance in learning and helps maintain their interest and that it creates simultaneous enjoyment for them. As a result of this study, early childhood educators will find some references from this study and apply it into their teaching methods that will create a fun and enjoyable learning atmosphere for young children.

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Promoting Independency Through Video Modelling Among Pre-Vocational Students in Gardening Activities

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ABSTRACT

Developing daily living abilities and employment skills among individuals with disabilities is crucial for their successful transition into adulthood, especially following the completion of secondary school. This encompasses their ability to compete in various industries as well as securing their daily needs, such as obtaining food, which can be facilitated through gardening activities. However, the acquisition of gardening-related skills may be limited by the current offerings within existing special education programmes. It is proposed that video-based learning, specifically video modelling, could serve as an effective strategy for fostering gardening skills and knowledge among students with special needs. This study employs action research to explore the use of video modelling among Pre-Vocational students in Brunei Darussalam with learning disabilities. The study aims to (i) assess students' performance in independent tasks following video modelling in gardening activities, and (ii) evaluate the effectiveness of the video modelling approach in facilitating the acquisition and retention of gardening skills among students with disabilities. The findings highlight the impact of video modelling on enhancing participants' instructional, safety, and cleanliness performance in gardening, in addition to students' preferences for short and step-by-step instructional approaches within video modelling content. Ultimately, the study seeks to provide insightful discussions on the integration of video modelling within Pre-Vocational Programmes as a potential tool for promoting self-directed learning.

INTRODUCTION

Self-directed learning pertains to an individual's capacity to initiate their own learning journey. This involves self-regulating the knowledge they choose to explore (Garcia Botero, Questier, & Zhu, 2018), leading to the eventual development of independent learning (Dahal & Bhat, 2024). Fostering these abilities among students is crucial, as it encourages a continuous interest in knowledge-seeking outside of the school setting (Marsevani, Slikker, Pratiwi, & Nugraha, 2024). In particular, promoting this development among students with special needs is essential, as it provides them with additional support to cultivate a diverse set of life and employment skills for successful adulthood, such as communication and critical thinking (Izam, Halim, & Wan, 2019). Therefore, the integration of such strategy is crucial, as it opens up additional pathways that can complement the existing curriculum (Gerard, Bradford, & Linn, 2022), including those within special educational needs or transition programmes.

Agriculture stands as a prime example of a curriculum subject that can greatly benefit from self-directed learning. This subject, commonly taught in Pre-Vocational Programmes, focuses on cultivating skills that support students in various roles within the agriculture industry, such as self-entrepreneurs and farmers or gardeners. Recent studies have highlighted the many benefits derived from gardening activities especially among individual with disabilities. This includes improvements in emotional well-being (Theodorou et al., 2021), motor skill development (Sommerfeld, McFarland, Waliczek, & Zajicek, 2021), financial stability (Santos et al., 2022), and physical fitness (Skelton, Herbert, & Benjamin, 2019). In seeking additional enhancements within gardening learning experiences, an innovative strategy worthy of exploration is the implementation of video-based learning.

In recent years, there has been an increase of educational video content produced across multiple sharing platforms (Shoufan & Mohamed, 2022; Dilon, 2020), providing a multitude of learning resources, including those related to agricultural subjects. Many new and novice gardeners use video-sharing websites such as YouTube, TikTok, and Instagram to independently learn about gardening practices, such as basic plant care, propagation methods, and seed germination techniques. Therefore, this study aims to explore the potential of using video-based learning, particularly video modelling, to enhance students' self-efficacy in gardening activities and improve their gardening skills. By examining the effectiveness of video modelling in this context, the study seeks to understand how technology-mediated learning can empower individuals with disabilities or special needs to develop both their practical knowledge and skills related to gardening.

Research Objectives

This study was conducted to address the aforementioned issues by investigating the effectiveness of the video modelling strategy within the Pre-Vocational Programme. Specifically, the research aimed to explore the impacts of the video modelling intervention on skill acquisition and self-independence among students with disabilities during gardening classes.

Thus, the objectives of the study were:

- (i) to evaluate students' performance in independent tasks following the video modelling intervention in gardening activities, and
- (ii) to examine the effect of video modelling on gardening skill acquisition and retention among students with disabilities.

Research Questions

This paper developed two research questions: (i) To what extent does video modelling influence student self-independence in performing gardening tasks? and (ii) How does video modelling promote the acquisition of gardening skills in the gardening subject?

METHODOLOGY

Research Design

This study employed action research to explore the application of a video modelling intervention with prompting support among Pre-Vocational students engaged in gardening activities. Manfra (2019) identified action research as a systematic investigation of educational inquiry through the collaboration of involved stakeholders to facilitate social change. The study's research design involved multiple cycles within the agricultural lessons, including initial observations of students' performance, reflection on their current abilities, planning of intervention strategies, and implementation of these strategies.

A baseline session was conducted to assess the current state of students' gardening skills as well as their pre-intervention task independence. The next stage involved intervention sessions, carried out to gain insights into students' gardening skills and independence with the presence of the video modelling intervention. Subsequently, post-test and maintenance sessions were implemented to identify both the immediate and prolonged impacts of the intervention among students. A survey was also administered to assess participants' perspectives on video modelling and its impact on their self-directed learning.

Overall findings and data collection were then analysed to relate them back to the research questions, discussing their impacts on participants as well as the intervention implications for Brunei Darussalam's Pre-Vocational Programme.

Study Overview

This study was conducted over six weeks in a secondary school in Brunei Darussalam, comprising five sessions: a baseline session, two intervention sessions, a post-test session, and a maintenance session, each with a distinct purpose. The baseline session established participants' gardening skills and independence levels as a reference point for measuring progress. During the two intervention sessions, participants received video modelling intervention with prompting support aimed at enhancing gardening skills and promoting task independence. A post-test session, which took place three weeks after the baseline session, evaluated the immediate impact of the intervention, while a maintenance session, conducted three weeks after the post-test, assessed skill retention over time. Meanwhile, the previously mentioned survey was given to conduct a thematic analysis of students' views on the video modelling approach. Sessions were held weekly for one hour in the Pre-Vocational Programme classroom.

Participants

The participants in this study comprised four students enrolled in the local Pre-Vocational Programme. To maintain confidentiality, each student was assigned a code name and referred to as P1, P2, P3, or P4. These students were selected by their Pre-Vocational teachers or homeroom teachers, based on specific criteria. This selection included (i) consistent school attendance, (ii) difficulty in following instructions, (iii) moderate computer literacy skills, and (iv) below-average performance in independent learning tasks. All participants were diagnosed with diverse types of disabilities or learning difficulties.

Instruments

Data collection involved the observation of four key aspects within gardening activities: instructional adherence, safety measures, cleanliness standards, and final product evaluation. This analysis aimed to determine whether students could imitate the desired gardening practices shown in the video content while ensuring the creation of quality plant products and prioritising safety and cleanliness throughout the activities. These dependent variables directly measure the impact of video modelling on students' acquisition of gardening skills.

Table 1. Gardening Skills Rubric for The Pre-Vocational Class

	Method of evaluation
INSTRUCTIONAL SKILL: Students are expected to follow the provided instructional steps.	$\frac{\text{Total number of cleanliness steps accurately followed}}{\text{Total number of instructional steps}} \times 100$
SAFETY AWARENESS: Students are required to properly prepare for and utilise gardening tools correctly.	$\frac{\text{Total number of safety steps accurately followed}}{\text{Total number of safety steps}} \times 100$
CLEANLINESS: Students must ensure cleanliness both before and after engaging in gardening activities.	$\frac{\text{Total number of cleanliness steps accurately followed}}{\text{Total number of cleanliness steps}} \times 100$
PRODUCTS EVALUATION: Student needs to produce a presentable final product	<i>Yes or No</i>

Survey

A survey was distributed following the conclusion of the maintenance phase, aimed at gathering additional insights into the efficacy of video modelling as a supportive tool among participants. The primary objective was to understand students' views on the intervention's impacts on their learning experiences and to identify potential applications beyond the classroom setting. The survey included questions about students' perceived independence in performing gardening tasks post-intervention as well as on students' perceptions of skill acquisition and the effectiveness of video modelling in learning gardening tasks. To gather responses, a Likert scale ranging from 'Agree', represented by a smiley emoji 😊, 'Disagree', represented by a sad emoji 😞, to 'Neutral', represented by a neutral emoji 😐, was utilised. The use of emojis was intended to make the survey more engaging and accessible to students, especially those who may have difficulty expressing themselves through traditional written responses.

Video Modelling

The video modelling used in the study featured recorded task demonstrations by the teacher, accompanied by straightforward instructions and examples of specific gardening skills. Video recording was conducted using a mobile phone outside the school compound to ensure optimal recording conditions. The recorded demonstrations utilised tools similar to those used in subsequent gardening classes, albeit in different colours, to help students recognise tools based solely on their appearance and functionality. Moreover, a voiceover was used for clear instructional explanations, with an additional safety and cleanliness section added at the beginning of the video to ensure students were aware of potential risks during the activity. All editing was done by the teacher using iMovie software from Apple Inc., and the videos were uploaded to a privately created YouTube channel.

Prompting Strategy

A prompt fading approach was implemented during the two intervention sessions to further support students' self-independence and familiarity with the video modelling approach. Prompting assistance may include requests for re-explanations or demonstrations of the strategy, such as how to replay, pause, or adjust the volume of the video content. Any student who appeared unsure was prompted to either replay the video content or guided to look for a specific timeframe within the video. All prompts given were related back to the video content with the aim of developing students' positive perceptions of video modelling as a learning and referencing tool during the acquisition of gardening skills.

During the first intervention, any assistance requested by students was met with detailed prompting; the teacher provided full explanations and demonstrations of the gardening activity using video modelling as a reference. This approach ensured that students were able to grasp the concept of video modelling during its initial introduction. The prompts were later reduced during the second intervention session, in which no demonstration assistance was provided. Any requests for prompts were met with a verbal reminder to replay the video only. Moreover, prompting requests were counted among participants during the two sessions to determine whether students were able to familiarise themselves with video modelling within just two classes.

Lessons Overview

The lessons conducted throughout this study were developed by the researcher and supervised by the school's agriculture and Pre-Vocational teachers. In addition to the video modelling approach, each session also incorporated collaborative learning to enhance students' communication skills while promoting their responsibility and critical thinking during gardening classes (Holloway et al., 2023).

Baseline Session

The learning objectives during the baseline session were to perform water propagation of dill (*Anethum graveolens*), prepare its soil medium, and replant rooted plants. Gardening tools such as clippers, trowels, gloves, soil, and pots were prepared by the teacher and placed in a designated area. The session began with a live demonstration of the three task objectives performed by the teacher. All four students then collaboratively discussed the preparation of tools by selecting pictures of the gardening tools needed for the activities. A poster of safety procedures was also provided to assist students with safety awareness discussions during gardening.

The lesson proceeded with independent tasks, beginning with water propagation, followed by the preparation of the soil medium, and lastly, the replanting of an already rooted plant. The teacher did not provide any prompts throughout the activities to assess the level of students' initial gardening performance prior to any intervention. At the end of the lesson, a preliminary discussion was held to review the lesson objectives and discuss the main activities.

Intervention Sessions

In the second lesson, the focus shifted to spearmint (*Mentha spicata*), with objectives centered on preparing the plant's soil mixture and executing both water propagation and replantation processes. Similar to the previous session, students were tasked with discussing safety procedures collaboratively by referring to the previously used safety poster. They were then assigned to four different tables labeled as 'Water Propagation,' 'Soil Mixing,' 'Replantation,' and 'Fun Facts.' Each table was provided with a laptop for student access to video modelling content based on the table's name. For the 'Fun Facts' table, students were instructed to watch video learning content on spearmint, including its reproductive process and usage in food or medicine, while also engaging in a mini coloring activity related to spearmint. Each participant would spend 10 minutes at each table before moving to the next, thus employing a station rotation learning approach.

This strategy was implemented to ensure full engagement of students in the gardening activity without disruption from peers, thus allowing for ideal conditions for individual task performance and independence. Furthermore, the teacher provided extensive verbal and physical prompting during this session to ensure students were familiar with the concepts surrounding gardening activities. A discussion session was conducted at the end of the lesson to promote sharing among participants. The next intervention session focused on performing water propagation, replantation, and soil mixing with purple basil (*Ocimum basilicum* L.). The overview of the session and its intervention approaches were similar to those of the previous intervention class, with the exception of reduced prompting assistance from teachers. This prompt-fading strategy was implemented to further promote independence during gardening activities while utilising the video modelling strategy.

Post Intervention and Maintenance Session

Participants underwent a post-test assessment a week after the last intervention session, during which the same learning objectives from the baseline were used: preparation of the dill's soil mixture and performing its water propagation and replantation. This session was designed based on the two intervention sessions, with the only difference being the use of a different plant type and the absence of prompting. A maintenance assessment was conducted three weeks after the post-test session. The objective during this session was to examine participants' familiarity with the video modelling strategy and the maintenance of gardening skills acquired in previous lessons. The plant studied was Thai basil (*Ocimum basilicum* var. *thrysiflora*), for which the same skills assessment was administered to further analyse students' performance.

RESULTS

Research Question 1: To what extent do video modelling influence student self-independency in performing gardening task?

Summarised findings for both overall performance and individual participants are presented in Figures 1 to 3 below. The results of the first research question indicate that all participants were able to produce high-quality plant products, demonstrating improvements in their instructional, safety, and cleanliness scores following the intervention that utilised video modelling integrated with a prompting-fading approach. After the 3-week maintenance phase, participants further enhanced their safety and cleanliness skills, although there was a slight decrease in their overall instructional scores.

Overall Findings on Plant Products Evaluation

The evaluation of students' final products was mostly satisfactory, with the exception of the replantation activity for P2 during the pre-test and P1 during the first intervention phase. P1 encountered difficulties in properly replanting the propagated dill, resulting in the plant being positioned flat instead of standing upright. Conversely, P2 failed to press the soil firmly during replantation, which caused his Thai basil plant to topple over when watered. Nevertheless, subsequent activities following the video modelling interventions demonstrated that all students were able to produce excellent and marketable final products, as assessed by the teacher.

Prompting Request during Intervention Sessions

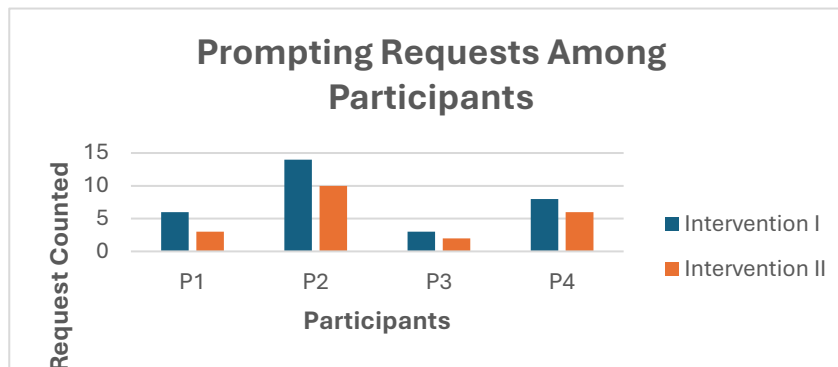


Figure 1. Count of Participant Assistance Requests

During the two intervention sessions, it was observed that every participant successfully reduced their need for teacher assistance from the first to the subsequent video modelling sessions, with a decrease ranging from 25% to 50%. Furthermore, despite the reduced prompting, participants' gardening performance improved throughout both sessions. Most assistance requests involved seeking confirmation and reassurance about the correctness of the next steps, with only a few instances of requests for physical modelling, which occurred during the initial intervention session.

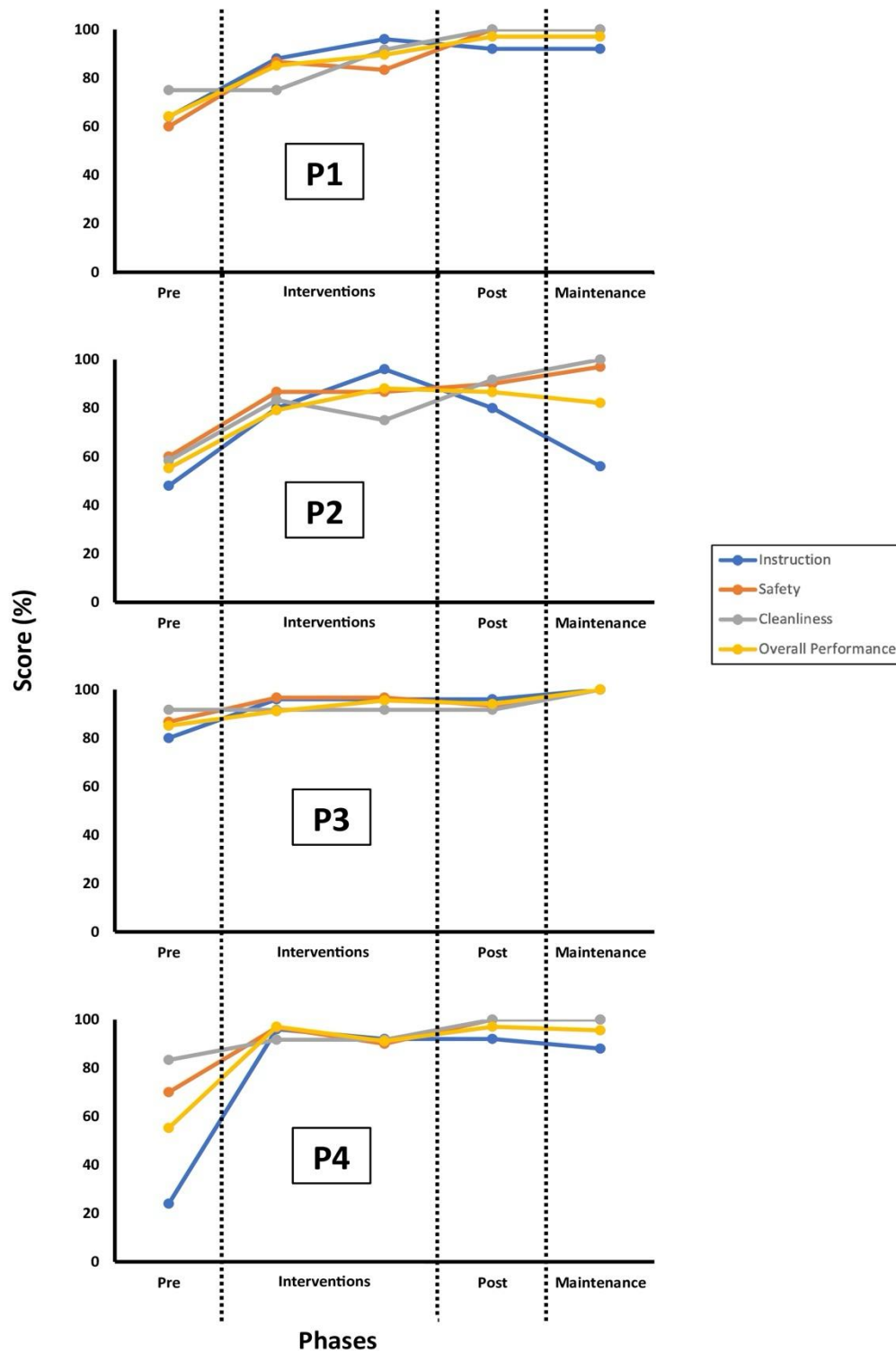


Figure 2. Individual Scores for Instructional, Safety and Cleanliness Throughout The Study Phases.

Overall Findings on Instructional, Safety and Cleanliness Gardening Assessment

The group's overall results during the pre-test indicated that participants faced the most challenges in the instructional assessment (ranging from 24% to 80%), followed by safety (ranging from 60% to 87%) and cleanliness (ranging from 58% to 92%). However, the scores for the three assessments significantly increased following the interventions, with instructional evaluation still showing the lowest scores (ranging from 80% to 96%), followed by safety (ranging from 90% to 100%) and cleanliness (ranging from 92% to 100%). Additionally, the average score for the instructional assessment decreased during the maintenance phase (ranging from 56% to 100%), while scores for safety (ranging from 97% to 100%) and cleanliness (overall 100%) increased. The evident rise in post-test scores for instructional, cleanliness, and safety components highlights the effectiveness of video modelling. A subsequent investigation into the maintenance of gardening skills three weeks after the post-test also revealed distinctly positive results when compared to pre-test performance.

These findings respond to the first research question, demonstrating that video modelling can effectively promote instructional, cleanliness, and safety gardening skills, even in the absence of teacher prompting.

Research Question 2: How does video modelling promote gardening skills acquisition in gardening subject?

Thematic analysis was conducted to examine the survey responses, aiming to identify patterns in participants' feedback, particularly regarding the second research question. The assessment concluded with findings that highlighted three primary themes, outlined below.

1. Impacts towards Gardening

All participants noted an improvement in their plant care abilities as a result of the video modelling intervention. P1, P3, and P4 specifically mentioned that the step-by-step instructions in the videos enhanced their skills in plant care. Furthermore, self-assurance among participants varied; P1 and P4 felt more confident in gardening exercises following the video modelling intervention, while P2 and P3 maintained a neutral perspective. P3 and P4 also acknowledged an increased interest in gardening after the intervention, whereas P2 expressed neutrality, and P1 stated that no interest had developed.

2. Exposure to Video Modelling

Participants' prior exposure to video modelling varied. P1 stated that he had experience with video modelling for various skills, but not for gardening, whereas P2 had no prior experience with the approach. P3 and P4 had some exposure to video modelling content, with P3 having unknowingly watched the video learning format while browsing YouTube. P4 indicated that she had previously watched video modelling

related to gardening, as well as in other genres. Only P1 and P4 expressed confidence in their ability to independently search for video modelling resources on platforms like YouTube, TikTok, and Instagram. However, P3 reported feeling uncertain about finding such resources independently, while P2 expressed neutrality. Nonetheless, all participants showed interest in using video modelling to learn other skills, particularly musical skills. Other skills mentioned by participants included cooking, crafting, language learning, and dancing.

3. Suggestions and Elements of Successful Video Modelling

The majority of participants indicated a willingness to recommend video modelling to friends and family for learning new skills, except for P2, who expressed neutrality. P1 suggested that video modelling with background music and shorter durations was preferable, based on his familiarity with the concept from TikTok shorts. Participants also highlighted various components necessary for a successful video modelling intervention, including visual recordings, step-by-step instructions, and video replay reinforcement. While participants generally favored the video modelling approach, some remained neutral or suggested that traditional teaching methods might still be preferable. P1 and P2 maintained a neutral stance on this comparison, while P4 believed that video modelling was superior to traditional teaching methods, and P3 stated that he preferred the traditional approach.

The findings outlined participants' perspectives on the video modelling approach, particularly in terms of independent learning and skill acquisition. All respondents recognised the potential of video modelling not only within agricultural classes but also across various educational domains. They emphasised several aspects of video modelling—such as interactive visual learning, step-by-step instructions, and the ability to rewatch videos—as particularly advantageous. These insights directly address the second research question regarding how video modelling can enhance the acquisition of gardening skills in gardening subjects.

DISCUSSIONS

Video Modelling to Promote Skill Development

All participants demonstrated improvement in instructional, cleanliness, and safety performance from the pre-test to the post-test, and either maintained or further improved their cleanliness and safety abilities from the post-test to the maintenance phase. It should be noted, however, that P3 maintained a cleanliness score of 93% throughout the initial four phases, suggesting that the intervention did not immediately affect his housekeeping ability. This sustained behaviour could be attributed to P3's reluctance to change his habitual practices, as noted in the homeroom teacher's report, which highlights his strong conscientiousness regarding cleanliness.

Nevertheless, during the maintenance phase, P3's cleanliness skills score improved to 100%, indicating that video modelling still has the potential to promote adaptability in revising existing skills, albeit not immediately. Kwasnicka, Dombrowski, White, & Sniehotta (2016) suggested that changing ingrained behaviors involves managing 'opportunity costs,' achieved through consistent encouragement and positive social influence during learning. This manipulation of opportunity is also evident in the study's video intervention, particularly with the inclusion of safety and cleanliness sections serving as visual prompts. Repeated exposure to these video reminders acts as reinforcement, gradually leading to changes in ingrained behaviours over time. This development of adaptability is particularly important for fostering independence among learners (She, Liang, Jiang, & Xing, 2023).

Video Modelling Application in Agriculture Class

Only P3 and P4 expressed a preference for the intervention in agricultural classes, while the others remained neutral. Moreover, only P4 stated that video modelling is better than traditional books or physical teaching in school, while P3 disagreed. These aspects may reflect individual preferences in learning styles, either toward a general learning setting or based on specific subjects. Some students may lean toward the traditional approach in most subjects, as it has been the prevalent learning method since their primary education. However, this preference might not extend to specific subjects such as gardening. Long et al. (2016) suggest that student preference may be influenced by the topic content rather than the learning format; students will be more interested in video modelling if the content is on a topic they like. This statement supports the survey responses indicating that those who remained neutral still held a positive view of the video modelling strategy, expressing a desire to use it for other topics. However, further studies should be conducted to explore the relationship between video learning preferences and topic content to draw stronger conclusions.

Task Independency through Video Modelling Interventions

The roles of teachers within video modelling interventions are particularly crucial during the development of gardening skills and the evaluation of final products. This underscores the need for evaluators to provide valuable feedback to assess learners' current developmental or performance status while ensuring that the skills learned are thoroughly grasped by the students. Moreover, verbal prompts or reminders from teachers during video modelling interventions can aid in fostering new normative behaviors within any learning strategy, as educators are the most influential individuals in knowledge acquisition within the school setting (Zheng, 2022). However, one could argue that these elements also highlight the necessity of teacher presence within video modelling strategies for effective interventions (Gadai, Caron, Ayoub, Karelis, and Nadeau, 2020), which may potentially impact the components of learner independence targeted in this study. To address this concern, Shin and Park (2024) suggest integrating a teacher-prompting approach to

foster effective learning, which can lead to greater confidence in independent learning among students. In other words, while video modelling may initially require high teacher involvement, the intervention still holds potential for fostering learning independence, particularly as teacher intervention becomes less necessary, as demonstrated through prompt-fading strategies.

Consistency and Video Modelling Effectiveness

The frequency of prompting requests decreased for all participants during the subsequent two intervention sessions, indicating a positive trend in the efficacy of the intervention in fostering short-term task independence. However, there is a concern that task dependency on teachers might increase in the future, as students are more likely to seek reassurance regarding their task performance when the task has not been practiced for an extended period (Aljumaili & Al-Obeidi, 2022). To address this issue, consistent use of the intervention may be necessary to avoid the need for its repeated implementation during future skill acquisition processes (Shin & Park, 2024) while also ensuring the long-term retention of learned skills (Cerino, 2023).

Furthermore, additional problems arise when gardening activities, coupled with video modelling, are practiced only during school hours, thereby limiting their incorporation into students' everyday lives. This restriction on practice opportunities may be compounded by limitations in accessing gardening resources or tools at home, despite the potential for sharing video modelling content with parents through social platforms. For example, during observations of participants' performance in the maintenance phase, instructional performance decreased for P2 and P3, while safety and cleanliness aspects showed improvement or maintenance of scores, respectively. This scenario highlights the importance of consistent practice beyond the school environment and underscores the necessity of accessibility to gardening resources at home. Additionally, similar concerns regarding the reduction of skill performance over time have been noted; lack of practice can lead to a lack of retention of the desired actions (Haith & Krakauer, 2018). These circumstances emphasise the importance of sustained practice and the need for resources to support skill development both inside and outside the classroom.

Fostering Confidence and Learners' Engagement through Video Modelling

Results from the survey indicated that all students agreed that the video modelling approach had enhanced their gardening skills. P3 and P4 further highlighted that the intervention sparked a greater interest in gardening. This suggests that the video modelling strategy has the potential to deepen students' appreciation for the subject while also improving their confidence in gardening tasks, as noted by P4. As stated in the introduction, self-confidence is an integral component of personal independence; a strong

sense of certainty in one's abilities is linked with a positive independence attitude (Karea, Asrial, Sabil & Arsil, 2020).

In this regard, Nandiana, Jaelani, and Afiyattena (2021) noted that confidence within the video learning approach can be enhanced through students' reflections, allowing them to identify their own progress and compare it with what is shown in the video. Thus, it can be argued that students who did not develop their confidence during the interventions were merely following the gardening instructions without assessing their own performance afterward. This is evident from the observations of P3 and P2, who did not provide any feedback during class discussions or the end-of-class reflections. This underscores the need for teachers to foster students' communication and critical evaluation abilities regarding their self-performance to maximise the impact of the video modelling intervention. However, further investigation is necessary to explore the relationship between confidence in tasks and students' reflections during class for stronger conclusions.

Moreover, students' full attention to video modelling content is essential, as distraction can lead to reduced task performance (Pillana, 2020). This was observed in P1 and P2 during the post-test sessions and in their unsuccessful product completions during the pre-test and the first intervention session. Therefore, educators should monitor students' engagement during video interventions to maximise their comprehension of the presented information and prevent them from merely mimicking the steps without understanding.

Video Modelling towards Independent Learning

Moreover, half of the participants reported that they had independently searched for video modelling content on TikTok, YouTube, and Instagram, covering topics such as cooking and musical tutorials. P3 mentioned that he had no prior experience searching for video modelling content but had unknowingly watched this genre on YouTube. These findings indicate that P1, P3, and P4 were able to differentiate video modelling from other video genres. Additionally, P1 emphasised the format used in TikTok, such as the inclusion of background music, as preferable. This preference aligns with Dillon's (2020) study, which stated that young adults find media, including educational videos on TikTok, entertaining due to the creative elements integrated into the videos, such as cut-outs, filters, and stickers.

Sun and Ruokamo (2018) emphasised aspects of video learning, such as scaffolding, that can enhance interest in knowledge-seeking. This was echoed by participants P1 and P4, who agreed that "step-by-step instructions," an example of scaffolded learning, were particularly useful in video modelling. Therefore, incorporating such elements into video modelling should be considered to engage students while providing them with valuable knowledge content. Furthermore, the same students suggested limiting video resources to short formats, which aligns with Slemmons et al. (2018), where students expressed a preference for shorter videos to maintain focus. Both suggestions regarding video modelling imply that educators need to

acquire video editing skills and identify the types of edits students prefer, whether for a general audience or tailored to individual preferences.

CONCLUSIONS

The discussion highlights the potential of video modelling as an effective educational tool for improving gardening skills and fostering task independence among students enrolled in the Pre-Vocational Programme, particularly those with varying abilities. It underscores the intervention's capability to address learning challenges, such as fostering learning adaptability, enhancing student interest in learning content, and developing skills retention approaches. Emphasis is placed on aspects of student engagement during learning to maximise focus and confidence in task performance. The results also provide insights into the multifaceted benefits and challenges associated with video modelling outside the school setting, as perceived by students, including its potential for promoting self-directed learning.

These findings are particularly relevant to the educational landscape of Brunei Darussalam, as the country seeks to enhance its educational system in line with its long-term national development plan, *Wawasan 2035* (Pawiro, 2021). Goal number two of this plan focuses on enhancing social development and the well-being of Bruneian citizens, which includes improving the education system. The potential of video modelling as an effective teaching intervention for skills development and fostering task independence is invaluable in preparing Bruneian students for future challenges, especially in the dynamic context of the 21st century (Malik, 2018). Furthermore, implementing such strategies within the Pre-Vocational Programme could provide students with additional tools for learning, aligning with the nation's efforts to offer diverse educational options that cater to the needs of special education learners (Ministry of Education, 2024).

The findings also emphasise the importance of teacher involvement in the implementation of any intervention, including video modelling, to facilitate effective learning experiences. This aspect resonates with Brunei Darussalam's focus on promoting teacher professionalism and ensuring teaching quality in schools, as highlighted in His Majesty the Sultan and Yang Di-Pertuan of Brunei Darussalam's *Titah* during the Teacher's Day Celebration in 2013 (The Scoop, 2018). However, constraints on practicing gardening outside of school may hinder long-term skill retention, despite the benefits of video modelling interventions. Therefore, further research is needed to explore the optimisation of video modelling strategies outside the school setting. Nevertheless, the potential of video modelling to foster independence and skill acquisition among students in the Pre-Vocational Programme remains promising.

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Implementasi Nilai Melayu Islam Beraja Negara Zikir Dalam Program Jati Diri Negara Brunei Darussalam

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ABSTRAK

Dalam merealisasikan Matlamat Dasar Belia Negara iaitu "Mewujudkan Belia Brunei Cemerlang", adalah dengan menanam dan mengukuhkan pada belia nilai-nilai dan kepercayaan-kepercayaan yang terkandung dalam Perlembagaan Negara dan Falsafah Negara Melayu Islam Beraja di mana nilai dan prinsip menjadi teras Dasar Belia Negara. Juga sebagai harapan Wawasan Negara 2035, Brunei Darussalam yang dihasratkan akan dikenali di seluruh dunia dengan rakyatnya yang berpendidikan, berkemahiran tinggi dan berjaya, kehidupan rakyat yang berkualiti tinggi, dan ekonomi yang dinamik dan berdaya tahan beracuan Melayu Islam Beraja. Untuk mencapai wawasan itu, nilai-nilai Islam, bersatu dalam kesetiaan kepada Raja dan tradisi bangsa Melayu Brunei, ke arah memelihara keharmonian sosial dan mengamalkan tradisi terbaik-baik dalam kehidupan bermasyarakat. Kajian ini bertujuan untuk mengkaji implementasi amalan nilai-nilai Melayu Islam Beraja Negara Zikir dalam kalangan belia. Kajian ini menggunakan pendekatan kaedah kuantitatif dalam mendapatkan data yang dikehendaki. Kaedah kuantitatif yang digunakan adalah tinjauan soal selidik. Responden yang terlibat dalam kajian ini adalah merupakan belia yang berumur dalam lingkungan 15 – 30 yang merupakan pelatih dalam Program Jati Diri seramai 60 orang. Hasil kajian mendapati, terdapat empat penilaian yang dibentuk dan dimantapkan dalam usaha melahirkan belia cemerlang iaitu (1) nilai murni yang perlu ada; (2) amalan nilai murni; (3) pandangan terhadap tingkah laku serta; (4) kesedaran sivik. Manakala, dari sudut implementasi nilai dalam kalangan pelatih, hasil kajian mendapati terdapat sembilan belas (19) nilai terbaik yang perlu ada dalam kalangan belia (pelatih). Selain itu, hasil kajian juga menunjukkan, terdapat lima (5) kesedaran sivik terbaik diimplementasikan dalam memastikan nilai Melayu Islam Beraja dapat diterapkan.

Kata Kunci: *Melayu Islam Beraja, Negara Zikir, Nilai, Belia dan Implementasi.*

ABSTRACT

In realizing the National Youth Policy Goal of "Creating Brilliant Bruneian Youth", is to instill and strengthen in the youth the values and beliefs contained in the National Constitution and the Royal Malay Islamic State Philosophy where values and principles form the core of the National Youth Policy. Also, as a hope of National Vision 2035, Brunei Darussalam is expected to be known throughout the world for its educated, highly skilled and successful people, high quality people's lives, and a dynamic and resilient economy based on the Malay Islamic Monarchy. To achieve that vision, Islamic values, united in loyalty to the King and the tradition of the Brunei Malay nation, towards maintaining social harmony and practicing the tradition of getting along in community life. This study aims to examine the implementation of the Malay Islamic values of the State of Zikir among the youth. This study uses a quantitative method approach in obtaining the desired data. The quantitative method used is a questionnaire survey. The respondents involved in this study are youths aged between 15-30 who are trainees in the Self-Identity Program totaling 60 people. The results of the study found that there are four evaluations that are formed and strengthened in the effort to produce outstanding youth, namely (1) pure values that must be present; (2) the practice of pure values; (3) views on behavior as well as; (4) civic awareness. Meanwhile, from the point of view of the implementation of values among the trainees, the results of the study found that there are nineteen (19) best values that must be present among the youth (trainees). In addition, the results of the study also show that there are five (5) best civic awareness implemented in ensuring that Malay Islamic Monarchy values can be applied.

Keywords: Malay Islamic Monarchy, Negara Zikir, Values, Youth and Implementation.

1.0 PENGENALAN

Jati diri adalah kesedaran individu tentang siapa dirinya, termasuk nilai-nilai, keyakinan, pandangan hidup, dan prinsip-prinsip yang dianut. Secara umumnya, jati diri mencakupi keseluruhan aspek yang membuat seseorang unik dan berbeza dari orang lain. Jati diri terbentuk melalui pengalaman hidup, interaksi sosial, persekitaran, budaya, serta pendidikan yang diterima seseorang sejak kecil hingga dewasa.

Dalam konteks Negara Brunei Darussalam, menurut pendefinisian daripada Kementerian Belia dan Sukan Negara Brunei Darussalam, belia di Negara Brunei Darussalam adalah lelaki dan perempuan yang berumur 15 - 40 tahun, manakala Pemimpin Belia adalah tidak dihadkan umur. Lingkungan umur tersebut adalah merupakan jumlah terbesar daripada penduduk keseluruhannya. Justeru itu pelaburan dalam perkembangan belia adalah sangat penting, kerana masa depan negara terletak pada mereka.

Apa yang paling penting lagi, Negara Brunei Darussalam yang telah sekian lama menikmati keamanan dan kemakmuran berusaha mempertahankan anugerah ini. Namun negara pastinya akan berhadapan dengan pelbagai cabaran dunia global masa kini. Ini bermakna jati diri belia perlu disiapkan siagakan untuk berhadapan dengan cabaran-cabaran seperti keruntuhan akhlak, pengangguran, penyalahgunaan dadah, pengaruh media sosial dan banyak lagi.

Oleh yang demikian, negara perlu memberikan lebih banyak galakan dan peluang bagi penglibatan belia dalam kehidupan sosial, ekonomi dan kebudayaan. Dasar Belia Negara yang digubal adalah bertujuan menyediakan rangka kerja bagi membimbing ke arah usaha-usaha tersebut (Kementerian Belia dan Sukan Brunei Darussalam (2020). *Dasar Belia Negara dan Strategi 2020-2035*).

2.0 TUJUAN KAJIAN

Matlamat Dasar Belia di Negara Brunei Darussalam adalah untuk mewujudkan Belia Brunei cemerlang. Matlamat ini direalisasikan dengan menanam dan mengukuhkan pada belia nilai-nilai dan kepercayaan-kepercayaan yang terkandung dalam Perlembagaan Negara dan Falsafah Negara Melayu Islam Beraja; memupuk rasa kepunyaan, patriotisme, beriltizam, berazam dan berhaluan yang jelas; memperkembangkan di kalangan belia pengetahuan dan kemahiran yang diperlukan serta menanam dalam diri mereka sikap dan kualiti bertanggungjawab, berdisiplin, dinamik, dapat menyesuaikan diri dan berdikari bagi pembangunan negara di samping mengukuhkan kepaduan negara dan menggalakkan penglibatan belia dalam perkembangan ekonomi yang kukuh dan berlanjutan dengan mengamalkan nilai dan prinsip yang menjadi Teras Dasar Belia Negara (Kementerian Belia dan Sukan Brunei Darussalam (2020). *Dasar Belia Negara dan Strategi 2020-2035*).

Ini bertepatan dengan harapan Wawasan Negara 2035, iaitu Brunei Darussalam dihasratkan akan dikenali di seluruh dunia dengan rakyatnya yang berpendidikan, berkemahiran tinggi dan berjaya, kehidupan rakyat yang berkualiti tinggi, dan ekonomi yang dinamik dan berdaya tahan beracuan Melayu Islam Beraja. Untuk mencapai wawasan itu, nilai-nilai Islam, bersatu dalam kesetiaan kepada Raja dan tradisi bangsa Melayu Brunei, ke arah memelihara keharmonian sosial dan mengamalkan tradisi berbaik-baik dalam kehidupan bermasyarakat (Wawasan2035. 2024, <https://www.wawasanbrunei.gov.bn>, dilayari Ogos 2024). Kajian ini bertujuan untuk mengkaji tahap implementasi amalan nilai-nilai Melayu Islam Beraja Negara Zikir dalam kalangan belia.

Kajian ini juga akan membincangkan isu bagaimana mewujudkan belia-belia yang mempunyai jati diri yang mantap terutama Negara Zikir Melayu Islam Beraja. Salah satu usaha yang dititik beratkan ialah cara implementasi pengukuhan jati diri. Pengetahuan dan penerangan yang komprehensif berkenaan Negara Zikir Melayu Islam Beraja juga dikongsikan. Kajian ini juga akan memperlihatkan hasil dapatan dan perbincangan serta maklum balas pelatih dalam Program Jati Diri ini. Seterusnya akan mengongsikan beberapa cadangan hasil dari kajian ini.

3.0 METODOLOGI KAJIAN

Kajian ini menggunakan pendekatan kaedah kuantitatif dalam mendapatkan data yang dikehendaki. Kaedah kuantitatif yang digunakan adalah tinjauan soal selidik. Responden yang terlibat dalam kajian ini adalah merupakan belia yang berumur dalam lingkungan 15 – 30 yang merupakan pelatih dalam Program Jati Diri seramai 60 orang.

Soalan dalam kajian soal selidik di adaptasi dari kajian terhadap penerapan dan pemerkasaan nilai murni belia di Malaysia (Jamilah Ahmad & Nur Nasliza Arina Mohamad Nasir, 2018). Tetapi telah dilakukan modifikasi sesuai dengan tujuan kajian ini.

4.0 PROGRAM JATI DIRI

Program jati diri bertujuan untuk membina dan memperkukuhkan identiti peribadi serta kesedaran diri peserta. Berikut adalah langkah-langkah umum untuk melaksanakan program jati diri secara berkesan:

4.1 Penetapan Tujuan:

Tentukan matlamat khusus program, seperti peningkatan keyakinan diri, pengembangan karakter, atau peningkatan kesedaran diri.

4.2 Penilaian Awal:

Lakukan penilaian awal untuk memahami keperluan dan potensi peserta. Ini boleh melalui soal selidik, temu bual, atau ujian psikologi.

4.3 Reka Bentuk Program: Reka bentuk kurikulum yang merangkumi pelbagai aspek pengembangan jati diri seperti:

4.3.1 Aktiviti Refleksi: Menulis jurnal, sesi meditasi, atau perbincangan kumpulan untuk merenung pengalaman peribadi dan nilai-nilai.

4.3.2 Pengembangan Kemahiran: Latihan komunikasi, kepimpinan, dan kemahiran sosial lainnya.

4.3.3 Pengembangan Karakter: Aktiviti yang menekankan nilai-nilai seperti integriti, tanggungjawab, dan etika.

4.3.4 Pembelajaran Sosial-Emosional: Sesi yang mengajar pengurusan emosi, empati, dan hubungan interpersonal.

4.4 Pelaksanaan Program:

4.4.1 Laksanakan program melalui pelbagai kaedah, seperti: Kelas dan Bengkel: Sesi bersemuka atau dalam talian yang interaktif .

4.4.2 Aktiviti Kokurikulum: Aktiviti di luar waktu pembelajaran seperti sukan, seni, atau organisasi yang menyokong pengembangan jati diri.

4.4.3 Mentoring dan Coaching: Bimbingan dari mentor atau jurulatih yang berpengalaman.

4.5 Pemantauan dan Penilaian:

4.5.1 Pantau kemajuan peserta secara berkala melalui penilaian formatif dan sumatif.

Gunakan maklum balas untuk menyesuaikan dan memperbaiki program.

4.5.2 Adakan sesi refleksi bersama peserta untuk memahami impak program dan mendapatkan input langsung.

4.6 Penutup dan Tindak Lanjut:

4.6.1 Lakukan penilaian akhir untuk menilai pencapaian matlamat program.

4.6.2 Rancang tindak lanjut atau program lanjutan untuk menyokong perkembangan jati diri yang berterusan.

4.7 Penyediaan Sumber:

4.7.1 Pastikan peserta mempunyai akses kepada sumber yang mereka perlukan seperti bahan bacaan, platform dalam talian, dan sokongan daripada fasilitator.

4.8 Penglibatan Komuniti:

4.8.1 Libatkan keluarga, rakan, dan komuniti dalam program untuk memperkukuhkan sokongan sosial dan persekitaran yang menyokong pengembangan jati diri.

Dengan pendekatan yang sistematik dan menyeluruh, program jati diri dapat memberikan impak positif yang signifikan bagi peserta, membantu mereka mengenali dan mengembangkan potensi diri secara maksimum.

5.0 PENGENDALIAN MODUL MELAYU ISLAM BERAJA (MIB) BAGI PROGRAM JATI DIRI (PJD)

Pengendalian Modul MIB bagi para pelatih PJD ini adalah berpandukan kepada beberapa objektif yang telah ditetapkan iaitu di akhir kursus para pelatih PJD akan dapat:

1. Menerima dan memahami informasi asas berkaitan takrifan, sejarah dan pemahaman nilai-nilai MIB.
2. Membina Jati Diri MIB untuk dijadikan pegangan dalam kehidupan mereka.
3. Mengetahui adat dan kebudayaan Brunei yang perlu dijaga serta dipelihara.
4. Memahami sepenuhnya sistem pentadbiran Negara.
5. Berusaha menjadikan negara Brunei Darussalam sebagai sebuah Negara Zikir Melayu Islam Beraja.

Pelatih juga dibekalkan dengan kuliah berkaitan dengan MIB yang bertujuan mengukuhkan lagi pengetahuan mereka tentang konsep MIB. Antara tajuk-tajuk kuliah yang disampaikan adalah seperti berikut:

1. Pengenalan MIB
2. Takrif MIB
3. Sejarah Awal MIB
4. Pemahaman Nilai MIB
5. MIB dan Teknologi Maklumat (Media Sosial)
6. Negara Zikir Melayu Islam Beraja
7. Sistem Pentadbiran Negara

Selain daripada kuliah, para pelatih juga diberikan beberapa aktiviti tertentu seperti:

1. Pembentangan berkumpulan
2. Menganalisis artikel MIB
3. Pendedahan pukulan-pukulan Hadrah Tradisi Brunei
4. Pendedahan Tarian-tarian Asli Brunei
5. Permainan Tradisi Brunei
6. Pameran Adat & Budaya Masyarakat Brunei
7. 'Tresure Hunt' MIB

6.0 NILAI DAN PRINSIP BELIA

Dasar Belia Negara adalah berteraskan perkara - perkara berikut iaitu Nilai dengan mengamal dan mengukuhkan nilai-nilai dan kepercayaan-kepercayaan yang terkandung dalam Perlembagaan Negara dan Falsafah Negara Melayu Islam Beraja.

Manakala prinsip dengan mendukung kerasmian Ugama Islam dan menzahirkannya sebagai amalan dalam kehidupan seharian belia sebagai satu cara hidup yang lengkap selaras dengan Falsafah Negara Melayu Islam Beraja. Menyumbang kepada kehidupan bermasyarakat, bernegara dan perkembangan ekonomi yang kukuh dan berlanjutan di Negara Brunei Darussalam supaya negara keseluruhannya dan belia khususnya dapat mengatasi dan mendapat faedah dari perubahan sosial, ekonomi dan teknologi yang pesat tanpa menjejaskan nilai peribadi dan kebudayaan mereka. Menyumbang kepada pembinaan kesedaran diri, kepaduan, perkhidmatan kepada orang lain dan keamatan sosial dalam kalangan penduduk Negara Brunei Darussalam, terutamanya di kalangan belia. Menyumbang kepada perkembangan pengetahuan, kemahiran dan sikap peribadi yang dikehendaki di kalangan orang ramai, khususnya belia, bagi kemajuan negara, pekerjaan dan warganegara yang aktif dan produktif.

Selain itu untuk membantu belia memperkembangkan kualiti peribadi yang penting seperti berdikari, kepimpinan, inisiatif, keyakinan, iltizam, daya usaha dan kreatif dan untuk menggalakkan ekspresi kualiti ini dalam pelbagai keadaan sosial dan ekonomi. Memperluas penglibatan organisasi belia amnya dan Majlis Belia Brunei khususnya dalam pembangunan negara. Membolehkan belia memperkembangkan kesedaran dan persefahaman antarabangsa, supaya menyedari kedudukan Negara Brunei Darussalam dalam ASEAN, rantau Asia, Komanwel dan antarabangsa. Menggalakkan pihak swasta mempunyai program khas bagi belia.

7.0 KEISTIMEWAAN DAN TANGGUNGJAWAB BELIA

Selain dikukuhkan dengan nilai-nilai dan prinsip-prinsip tertentu yang telah dijelaskan, Dasar Belia Negara juga terletak pada pemahaman bahawa belia mempunyai keistimewaan-keistimewaan yang diberikan oleh negara dan tanggungjawab yang negara mengharapkan mereka melaksanakannya. Dalam perkara ini keistimewaan dan tanggungjawab tersebut membentuk asas 'kontrak sosial' di antara belia dengan Kerajaan seperti berikut

Keistimewaan Belia iaitu mendapat perlindungan dari eksploitasi, diskriminasi atau penganiayaan; melakukan amalan dan ekspresi kepercayaan beragama dan kegiatan kebudayaan dalam rangka Perlembagaan Brunei; menubuhkan persatuan mengikut kehendak undang-undang; mendapat peluang pendidikan umum dan ugama, latihan, perkhidmatan kesihatan dan perkhidmatan - perkhidmatan penting

yang lain yang bertujuan untuk memperkembangkan kemahiran dan potensi manusia; mendapat peluang untuk lebih memahami dan menghayati kebudayaan negara; mendapat perkhidmatan yang diperlukan oleh belia yang berkeperluan khas atau belia yang tidak berkeupayaan; mendapat pengiktirafan disebabkan kualiti peribadi dan perkhidmatan melalui pemberian Anugerah seperti yang diberikan oleh Negara dan Anugerah Belia di peringkat serantau dan antarabangsa; mengisytiharkan satu hari khas yang disebutkan Hari Belia Kebangsaan.

Manakala tanggungjawab Belia adalah taat kepada Allah, setia kepada Raja dan cinta kepada Negara; untuk menghormati keperluan dan hak orang lain dan warga tua; untuk hidup dan bertindak mengikut ugama dan kebudayaan selaras dengan kehendak Perlembagaan Negara; untuk bertindak jujur dan boleh dipercayai; untuk memikul tanggungjawab peribadi bagi memelihara dan memperkembangkan kesihatan, pendidikan, kemahiran dan kualiti peribadi; untuk memikul tanggungjawab peribadi kepada keluarga dan masyarakat; untuk menyumbangkan secara aktif kepada kekukuhan dan kesepaduan masyarakat serta keamanan dan kesejahteraan negara keseluruhannya; mempertahankan kesucian Ugama Islam, menghayati ajaran-ajaran dan celik Al-Quran.

8.0 HURAIAN MATLAMAT DASAR BELIA NEGARA

Matlamat Dasar Belia Negara adalah seperti yang telah dinyatakan dalam huraian di atas. Matlamat Dasar ini diterangkan secara terperinci di bawah: Objektif Dasar, dan seterusnya di bahagian Bidang Strategi Penting dan Kumpulan Sasaran Utama (Kementerian Belia dan Sukan Brunei Darussalam (2020). *Dasar Belia Negara dan Strategi 2020-2035*).

Objektif Dasar 1 iaitu mendukung Islam sebagai ugama rasmi dan menjadikannya satu cara hidup yang lengkap. Untuk menjadikan belia bertanggungjawab dengan menjadikan Al-Quran dan As-sunah sebagai panduan hidup; memelihara dan mempertahankan kesucian Ugama Islam; memperelajari dan mengamalkan tuntutan Fardhu Ain dengan sempurna dan celik Al-Quran; dan menjadi warga yang taat beragama dan mempunyai akhlak mulia dan terpuji.

Objektif Dasar 2 iaitu menyumbang kepada ekonomi, kebudayaan dan masyarakat yang kukuh dan berlanjutan untuk membolehkan belia menghargai: keperluan untuk menyumbang kepada pencapaian ekonomi yang kukuh dan berlanjutan; keperluan untuk mendukung satu kebudayaan dan masyarakat yang kukuh dan bertenaga; dan penubuhan sebuah Yayasan Belia.

Objektif Dasar 3 iaitu pemahaman dan kesedaran untuk membolehkan belia memupuk dengan kesedaran diri dan rasa kepunyaan serta mempunyai hala tuju kehidupan yang sempurna; kefahaman tentang keperluan untuk bekerja dengan semangat perpaduan dengan orang lain; menghargai dan mengamalkan

sikap pemedulian dan khidmat kepada orang lain dalam masyarakat; kebolehan untuk menyumbang bagi kesepaduan masyarakat dan negara; dan persefahaman antarabangsa.

Objektif Dasar 4 iaitu pengetahuan dan kemahiran untuk membantu belia mendapatkan pengetahuan dan kemahiran yang diperlukan untuk menyumbangkan secara positif kepada pembangunan negara; bersikap positif kepada pekerjaan; menjadi warganegara yang aktif dan penuh azam.

Objektif Dasar 5 iaitu sikap dan kualiti peribadi untuk membantu belia memperkembangkan sikap dan kualiti peribadi yang penting dalam semua aspek kehidupan harian dan untuk mengekalkan pernyataan sikap dan kualiti ini dalam pelbagai keadaan sosial dan ekonomi. Sikap dan kualiti ini antara lain termasuklah beriman dan bertakwa, taat dan setia kepada Raja, patriotik, patuh kepada undang-undang, berdaya saing, berdikari, kepimpinan, inisiatif, keyakinan, iltizam, keusahawanan dan kreatif.

9.0 DAPATAN KAJIAN DAN PERBINCANGAN

Dapatan kajian yang dibincangkan adalah meliputi tujuh perkara, iaitu (1) demografi responden; (2) nilai murni yang ada pada diri pelatih pada masa kini; (3) amalan nilai-nilai murni; (4) pandangan pelatih terhadap tingkah laku; (5) kesedaran sivik diri pelatih.

Demografi Responden Berdasarkan jantina, 59.8% daripada responden yang terlibat adalah perempuan dan hanya 40.2% responden lelaki yang terlibat dalam kajian ini. Hal ini adalah kerana, faktor kelapangan waktu yang dimiliki oleh banyak responden perempuan berbanding dengan responden lelaki yang ditemui oleh pengkaji ketika kajian ini dijalankan (sila rujuk Jadual 1).

JADUAL 1 JANTINA RESPONDEN

Jantina Bilangan (%)

Lelaki 83%

Perempuan 17%.

Dari segi umur, majoriti daripada responden yang terlibat adalah merupakan belia yang berumur dalam lingkungan 18 tahun hingga 20 tahun iaitu sebanyak 65%. Selebihnya iaitu sebanyak 35% pula adalah responden yang berumur dalam lingkungan 21 tahun hingga 25 tahun (sila rujuk Jadual 2).

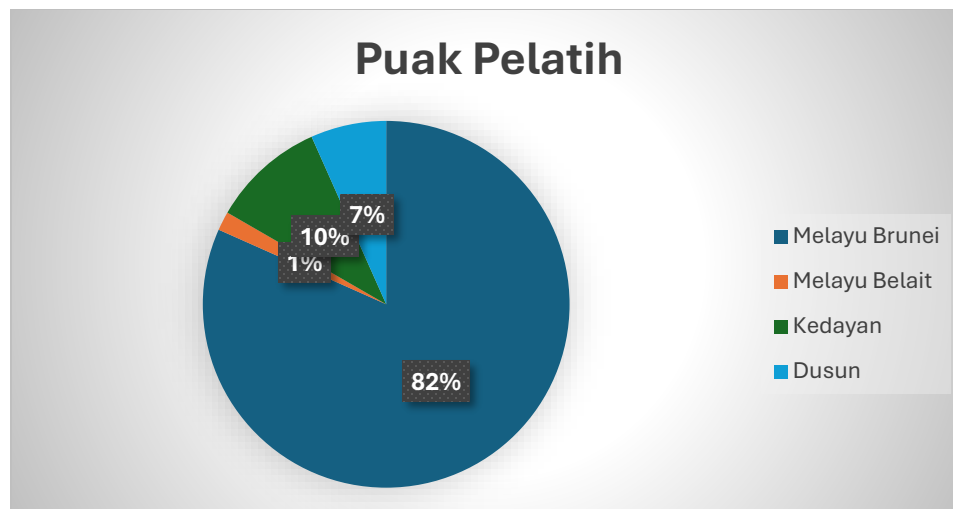
JADUAL 2 UMUR PELATIH

<i>Umur Pelatih</i>	<i>✓ Sila tandakan</i>
<i>15 - 17 tahun</i>	-
<i>18 - 20 tahun</i>	39
<i>21 – 25 tahun</i>	21

Dari segi puak, majoriti responden adalah daripada puak Melayu Brunei iaitu sebanyak 82%. Selebihnya iaitu sebanyak 10% responden adalah daripada puak Kedayan, 7% responden dari puak Dusun serta 2% responden yang lain adalah daripada puak Melayu Brunei (sila rujuk Jadual 3).

JADUAL 3 PUAH PELATIH

<i>Puak (bangsa) Pelatih</i>	<i>✓ Sila tandakan</i>
<i>Melayu Brunei</i>	49
<i>Melayu Tutong</i>	-
<i>Melayu Belait</i>	1
<i>Dusun</i>	4
<i>Kedayan</i>	6
<i>Bisayah</i>	-
<i>Murut</i>	-



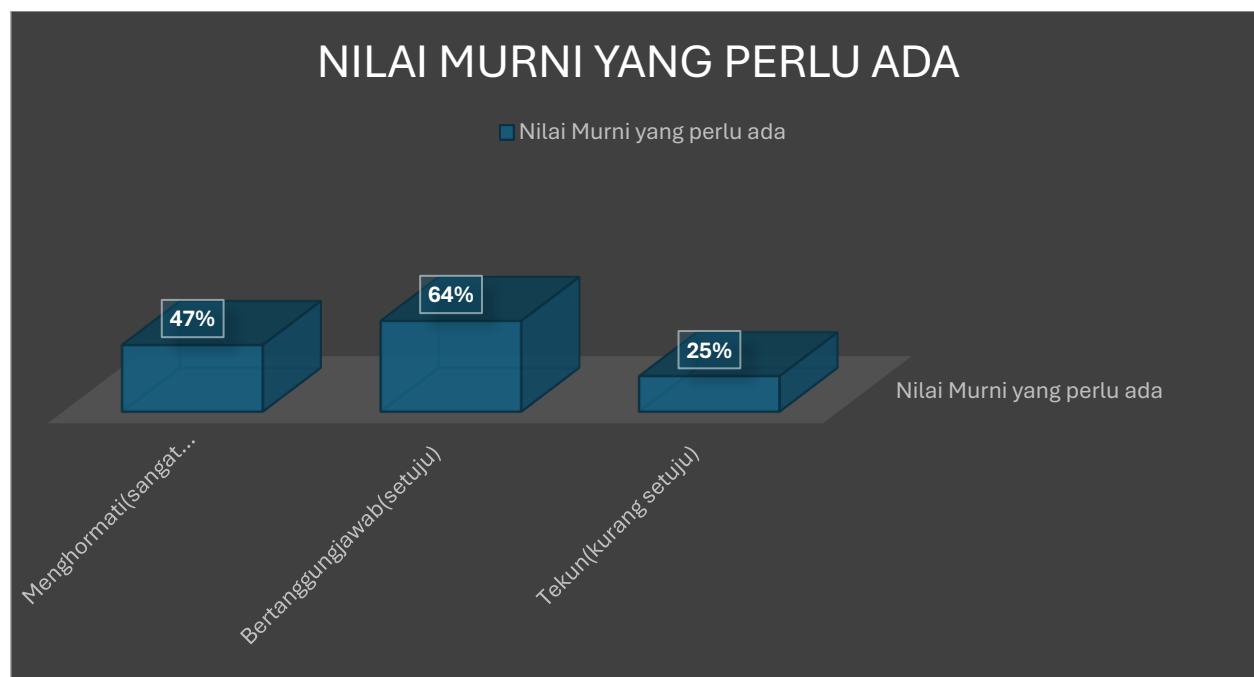
Nilai murni yang ada pada diri pelatih

Hasil kajian menunjukkan terdapat 19 nilai murni yang dimiliki oleh para pelatih. Hal ini dapat dilihat apabila majoriti daripada responden memberikan skala 4 dan 5, iaitu merujuk kepada tahap tinggi. 19 nilai-nilai murni tersebut adalah (1) bertimbang rasa; (2) bertanggungjawab; (3) bertoleransi; (4) muafakat; (5) bersih (fizikal); (6) bekerjasama; (7) berbudi bahasa; (8) hormat menghormati; (9) berintegriti; (10) bersedekah; (11) bersatu padu; (12) amanah; (13) Ikhlas; (14) benar; (15) besederhana; (16) tekun; (17) beretika; (18) bersyukur ; serta (19) bersih (rohani/jiwa). Maklum balas terperinci responden dapat dilihat di Jadual 4.

JADUAL 4 NILAI MURNI YANG ADA PADA DIRI PELATIH

Nilai murni yang ada pada diri pelatih		Keutamaan					
Skala paling tinggi (5) kepada skala paling rendah (1)		Tinggi		Rendah			JUMLAH
		5 Sangat setuju	4 setuju	3 Kurang setuju	2 Tidak setuju	1 Sangat tidak setuju	
1	Bertimbang rasa	20 (34%)	33(58%)	6(10%)			59
2	Bertanggungjawab	17(29%)	38(64%)	4(7%)			59
3	Bertoleransi	16(27%)	33 (58%)	10(17%)			59
4	Bermuafakat	13(22%)	30(51%)	16(27%)			59
5	Bersih (fizikal)	23(40%)	26(44%)	10(17%)			59
6	Bekerjasama	19(32%)	28(47%)	5(8%)			59
7	Berbudi bahasa	19(32%)	28(47%)	2(3%)			59
8	Menghormati	28(47%)	27(46%)	4(7%)			59
9	Berintegriti	19(32%)	27(46%)	13 (22%)			59
10	Bersedekah	16(27%)	31(53%)	12(20%)			59
11	Bersatu padu	20(34%)	32(54%)	7(12%)			59
12	Amanah	22(37%)	27(46%)	10(17%)			59
13	Ikhlas	26(44%)	28(47%)	5(8%)			59
14	Benar	20(34%)	27(46%)	12(20%)			59
15	Besederhana	18(31%)	32(53%)	9(15%)			59
16	Tekun	13(22%)	30(51%)	15(25%)	1(2%)		59
17	Beretika	17(29%)	28(47%)	14(24%)			59
18	Bersyukur	27(46%)	20 (34%)	11(19%)	1(2%)		59

19	Bersih (rohani/Jiwa)	25(42%)	27(46%)	7(12%)			59
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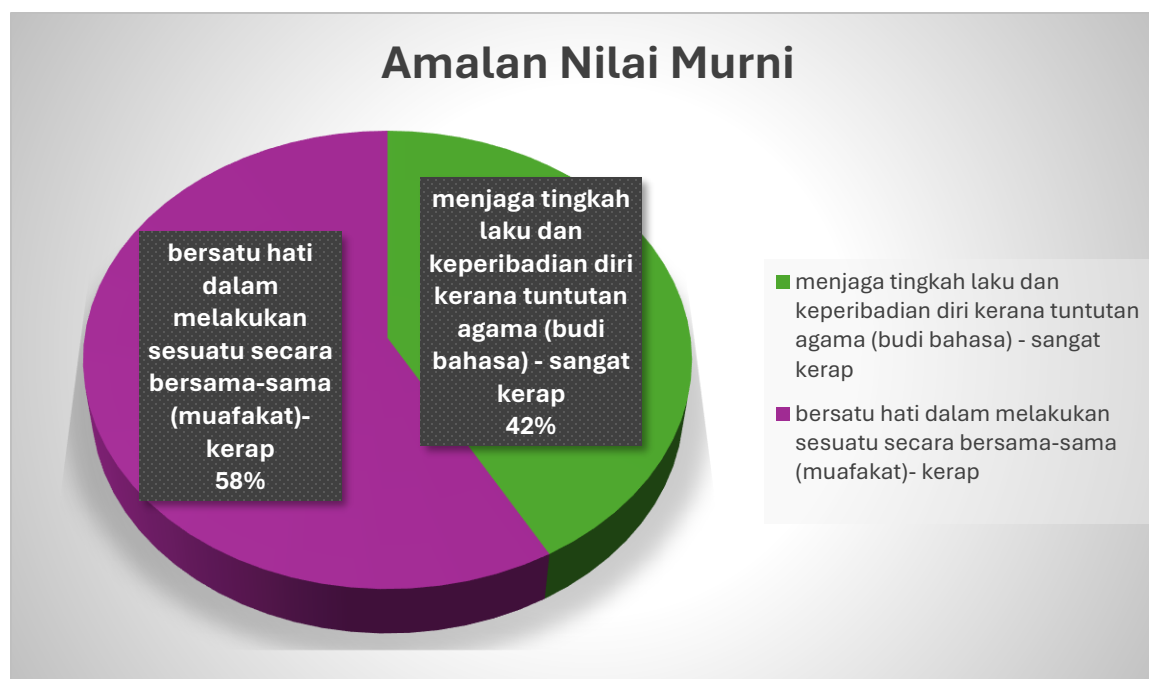
Selain itu, hasil kajian juga mendapati, 19 nilai murni yang dinyatakan tersebut sememangnya diaplikasikan oleh majoriti responden di dalam kehidupan mereka. Hal ini dapat dilihat apabila majoriti responden menyatakan kerap melakukan 12 nilai-nilai murni tersebut. Maklum balas terperinci responden dapat dilihat pada Jadual 5. Tambahan lagi, responden juga memaklumkan, nilai murni menjaga kebersihan fizikal merupakan di antara nilai murni yang paling banyak diaplikasikan oleh belia. Hal ini kerana, belia pada masa kini amat mementingkan penampilan diri yang sentiasa bersih, kemas dan terkini.

JADUAL 5 KEKERAPAN AMALAN 12 NILAI MURNI

Kekerapan amalan 12 nilai murni		Keutamaan			
Skala dari sangat kerap kepada tidak kerap		Sangat Kerap	Kerap	Tidak Kerap	JUMLAH
1	<i>menolong orang yang dalam kesusahan (bertimbang rasa)</i>	17(29%)	40(68%)	2(3%)	59
2	<i>bersatu hati dalam melakukan sesuatu secara bersama-sama (muafakat)</i>	11(19%)	44(75%)	4(7%)	59
3	<i>menerima dan menghormati pendapat orang lain (bertoleransi)</i>	22(37%)	37(63%)	1(2%)	59
4	<i>tolong menolong di antara satu sama lain (bekerjasama)</i>	27(46%)	32(54%)	1(2%)	59
5	<i>menjaga kebersihan diri (bersih fizikal)</i>	31(53%)	24(41%)	4(7%)	59
6	<i>menjaga tingkah laku dan keperibadian diri kerana tuntutan agama (budi bahasa)</i>	32(54%)	26(44%)	1(2%)	59
7	<i>menjaga tingkah laku dan keperibadian diri kerana tuntutan hidup bermasyarakat (budi bahasa)</i>	25(42%)	33(56%)	1(2%)	59
8	<i>memberikan layanan yang sopan dan berhemah terhadap individu lain (hormat)</i>	24(41%)	34(58%)	1(2%)	59
9	<i>jujur dan telus dalam melakukan sesuatu perkara (berintegriti)</i>	18(31%)	37(63%)	5(8%)	59

10	<i>memberikan sesuatu secara sukarela dan ikhlas dari segi kewangan (bersedekah)</i>	23(39%)	32(54%)	5(8%)	59
11	<i>memberikan sesuatu secara sukarela dan ikhlas dari segi tenaga/sokongan (bersedekah)</i>	21(36%)	33(56%)	5(8%)	59
12	<i>bertanggungjawab dengan setiap perkara yang dilakukan (bertanggungjawab)</i>	29(49%)	30(51%)		59

**seorang pelatih tidak menjawab bahagian ini*



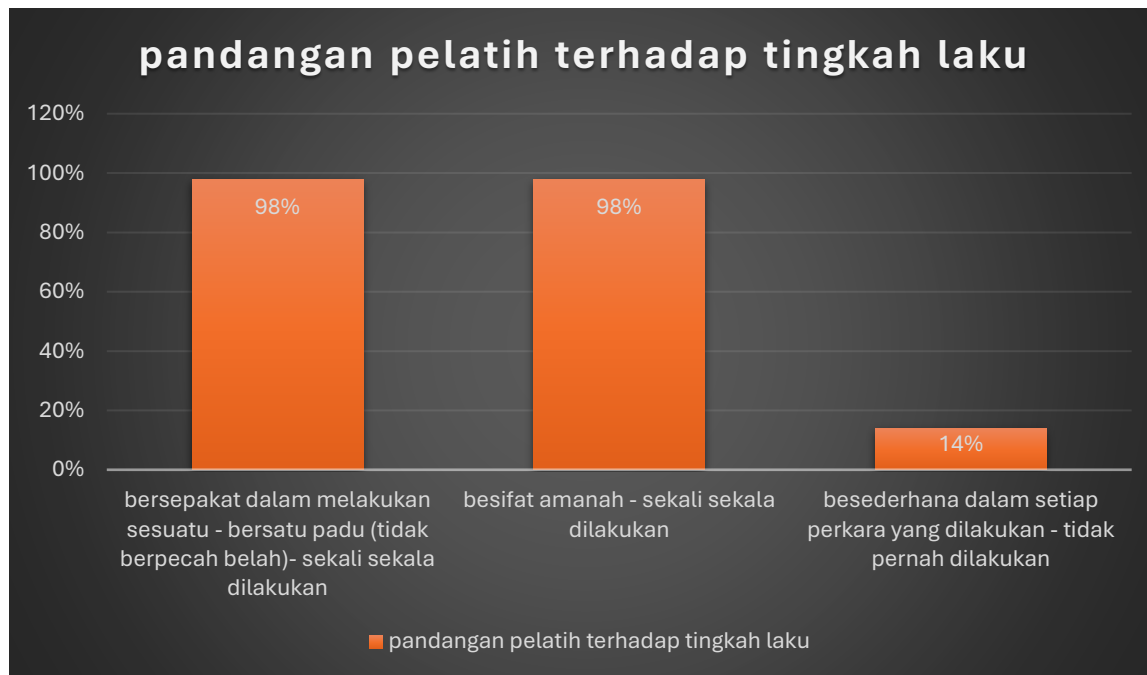
Hasil kajian juga menunjukkan terdapat 11 nilai murni yang dinyatakan sekali kala dan tidak pernah diamalkan oleh majoriti responden dalam kehidupan harian mereka. Hal ini dapat dilihat apabila majoriti responden menyatakan hanya sekali sekala dan tidak pernah dilakukan 11 nilai-nilai murni tersebut. Maklum balas terperinci responden dapat dilihat pada Jadual 6.

JADUAL 6 PANDANGAN PELATIH TERHADAP TINGKAH LAKU

Pandangan pelatih terhadap tingkah laku		Keutamaan		
Skala dari sekali kala dilakukan kepada tidak pernah melakukan		Sekali kala dilakukan	Tidak pernah dilakukan	JUMLAH
1	<i>bersepakat dalam melakukan sesuatu (tidak berpecah belah) bersatu padu)</i>	58(98%)	1(2%)	59
2	<i>bersifat amanah</i>	58(98%)	1(2%)	59
3	<i>melakukan sesuatu dengan rela hati tanpa mengharapkan balasan (ikhlas)</i>	56(95%)	3(5%)	59
4	<i>tidak menipu dalam percakapan dan perbuatan (benar)</i>	54(92%)	5(8%)	59
5	<i>bersederhana dalam setiap perkara yang dilakukan</i>	51(86%)	8(14%)	59
6	<i>bersungguh-sungguh dalam melakukan sesuatu</i>	53(90%)	6(10%)	59
7	<i>berkelakuan baik dan betul mengikut norma masyarakat (beretika)</i>	56(95%)	3(5%)	59
8	<i>menghargai faedah atau nikmat yang diterima (bersyukur)</i>	56(95%)	3(5%)	59
9	<i>menjaga kesucian diri (dalaman/rohani)</i>	57(97%)	2(3%)	59

10	<i>memberi tumpuan sepenuhnya ke atas tugas yang dilakukan (berdisiplin)</i>	55(93%)	4(7%)	59
11	<i>melakukan tugas dengan sempurna (berdisiplin)</i>	55(93%)	4(7%)	59

**seorang pelatih tidak menjawab bahagian ini*



Hasil kajian juga mendapati, nilai-nilai murni yang perlu ada pada belia masa kini juga adalah melibatkan kesedaran sivik. Hal ini kerana, hasil kajian memperlihatkan, kesedaran sivik dalam kalangan pelatih berada di tahap yang sederhana iaitu majoriti pada skala 4 sahaja. Kesedaran sivik yang dimaksudkan adalah melibatkan kesedaran dari segi (1) membudayakan amalan kitar semula; (2) membuang sampah dan sisa makanan di tempat yang sepatutnya; (3) beratur dengan tertib untuk menunggu giliran masing-masing; (4) menjaga dan menghargai harta benda awam; serta (5) tabiat memandu yang sopan dan berhemah. Maklum balas terperinci responden dapat dilihat di Jadual 7.

JADUAL 7 KESEDARAN SIVIK DALAM KALANGAN PELATIH

Kesedaran sivik dalam kalangan pelatih		Keutamaan					
Skala paling tinggi (5) kepada skala paling rendah (1)		Tinggi		Rendah			JUMLAH
		5 Sangat setuju	4 setuju	3 Kurang setuju	2 Tidak setuju	1 Sangat tidak setuju	
1	<i>membudayakan amalan kitar semula</i>	11(19%)	40(70%)	5(9%)		1(2%)	57
2	<i>membuang sampah dan sisa makanan di tempat yang sepatutnya</i>	28(49%)	25(44%)		2(4%)	2(4%)	57
3	<i>beratur dengan tertib untuk menunggu giliran masing-masing</i>	25(44%)	29(51%)	2(4%)		1(2%)	57
4	<i>menjaga dan menghargai harta benda awam</i>	37(65%)	18(32%)		1(2%)	1(2%)	57
5	<i>tabiat memandu yang sopan dan berhemah</i>	28(49%)	26(46%)	3(5%)		2(4%)	57

**3 orang pelatih tidak menjawab Bahagian ini*

KESIMPULAN

Kajian ini memperlihatkan kepentingan Program Jati Diri (PJD) terutama untuk para belia. Memandang kepada belia-belia itu adalah bakal pemimpin dan rakyat yang akan datang, maka perlulah mereka itu diasuh dengan bersesuaian dengan kehendak MIB. Implementasi amalan nilai MIB Negara Zikir dalam program ditinjau dari pengetahuan, pemahaman & amalan para belia. Penglibatan MTMIB selaku penyelaras MIB dengan kerjasama pihak-pihak dan institusi pendidikan adalah usaha yang sangat diperlukan.

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Penggunaan Video Dalam Pengajaran Untuk Tajuk Wuduk Darjah 1 Sekolah Ugama

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Sekolah Ugama Antarabangsa Brunei (SUISB), Kementerian Hal Ehwal Ugama

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THEME: INNOVATING EDUCATION ECOSYSTEM

ABSTRAK

Kesempurnaan wuduk adalah perkara penting dalam mengerjakan ibadat khususnya mengerjakan sembahyang. Tanpa kesempurnaan wuduk ini sembahyang yang dilakukan oleh seseorang muslim boleh menjadi tidak sah kerana tidak memenuhi syarat-syarat sah sembahyang. Melihat kepentingan ini, pengkaji memilih pendekatan penggunaan video sebagai alat bantu mengajar di sekolah ugama. Kajian ini bertujuan untuk mengenal pasti keberkesanan kaedah penggunaan video dalam pengajaran dan pembelajaran tajuk Wuduk. Kajian ini dilaksanakan menggunakan reka bentuk kuasi eksperimen, dan melibatkan sampel kajian seramai 39 orang murid dari sebuah sekolah ugama di Daerah Brunei dan Muara, kawasan Brunei IIA. Manakala instrumen kajian menggunakan ujian pra dan ujian pasca beserta soal selidik. Kaedah penganalisan data dalam kajian ini menggunakan pendekatan analisis deskriptif dan inferensi. Analisis deskriptif digunakan bagi mendapat nilai skor min dan peratusan. Sementara analisis inferensi menggunakan analisis ANCOVA dan analisis ujian-*t* sampel bebas. Dapatan kajian mendapati tidak terdapat perbezaan yang signifikan antara dua kumpulan menerusi ujian pra dan ujian pasca dalam penulisan, iaitu $F(1,27) = 3.322$, $P = 0.08$ ($P > 0.05$). Skor min bagi kumpulan kawalan ialah 33.00 ($SP = 11.551$) dan kumpulan eksperimen ialah 33.13 ($SP = 9.804$). Sementara dapatan kajian melalui analisis ujian-*t* sampel bebas menunjukkan terdapat perbezaan skor min yang signifikan antara kumpulan kawalan dan eksperimen terhadap ujian praktikal berwuduk, iaitu $t(36) = -2.877$, $P = 0.007$ ($P < 0.05$). Pada keseluruhannya, kaedah penggunaan video ini menunjukkan respon yang positif dari murid dan mampu merangsang minat murid serta dapat meningkatkan prestasi murid di samping dapat mengembangkan mutu pengajaran dan pembelajaran di dalam kelas.

Kata kunci: *Penggunaan Video, Wuduk, Sekolah Ugama.*

PENDAHULUAN

Perkembangan teknologi maklumat dan komunikasi yang meluas memberi kesan dalam kehidupan masyarakat, sehingga penggunaan alat teknologi dan komunikasi ini telah banyak membantu tugas manusia untuk melaksanakan kerja dengan mudah dan cepat. Hal ini termasuklah juga dalam bidang pendidikan, penggunaan alat media seperti penggunaan video digunakan untuk menyampaikan ilmu pengetahuan melalui proses pengajaran dan pembelajaran. Video adalah salah satu alat media bahan bantu mengajar yang popular dalam kalangan pendidik pada zaman perkembangan teknologi maklumat (*information technology - IT*).

Selain itu penggunaan video dalam pengajaran mampu untuk menyampaikan informasi dengan lebih menarik, memperkuat pesan melalui gambar dan suara kerana video mampu menyampaikan maklumat dalam keadaan yang lebih realistik atau menyamai keadaan yang sebenar, lalu murid dapat merasakan bahawa seolah-olah berada dalam situasi atau keadaan yang sebenar. Di samping itu, ia dapat meningkatkan keterlibatan dan pemahaman murid terhadap isi pelajaran (J.S. Farrant, 1981). Bahkan penggunaan video tersebut memudahkan guru untuk melaksanakan aktiviti pengajaran dengan menyampaikan maklumat dan isi pelajaran dengan jelas kepada murid. Di samping itu, murid juga boleh belajar secara perseorangan atau berkumpulan walaupun tanpa kehadiran guru (Azniwati Abdul Aziz, 2020 & Malini Kamlin, 2020).

Tujuan Kajian

Kajian ini bertujuan untuk mengenal pasti keberkesanan kaedah penggunaan video dalam pengajaran dan pembelajaran tajuk Wuduk.

Penyataan Masalah

Kesempurnaan wuduk adalah perkara penting dalam mengerjakan ibadat sembahyang. Tanpa kesempurnaan wuduk, ibadat sembahyang yang dilakukan oleh seseorang muslim menjadi tidak sah; kerana tidak memenuhi syarat-syarat sah sembahyang. Kajian ini dilaksanakan adalah kerana terdapat isu dalam kalangan murid sekolah agama di Negara Brunei Darussalam yang masih tidak memahami sepenuhnya tatacara berwuduk dengan sempurna. Hal ini terjadi adalah disebabkan murid-murid tersebut belum dapat menguasai pembelajaran wuduk sepenuhnya.

Selain itu, laporan Sijil Sekolah-Sekolah Rendah Agama (SSSRU) tahun 2022 bagi subjek Fiqh 1, berdasarkan tujuh buah sekolah terpilih telah menunjukkan skor purata bagi murid yang memperolehi markah gred A hingga C adalah sebanyak 45% (Unit Peperiksaan KHEU, 2022). Kadar skor purata ini

masih dianggap belum memuaskan kerana masih belum mencapai tahap yang dikehendaki. Dalam erti kata lain, pembelajaran Fiqh 1 (termasuk tajuk Wuduk) perlu diambil perhatian, khususnya dalam aspek keberkesanan dan kefahaman para murid.

Selain itu, permasalahan yang timbul adalah tahap prestasi murid-murid sekolah agama dalam ujian amali khususnya pelajaran wuduk adalah kurang memuaskan. Ini adalah kerana markah praktikal wuduk yang kurang memuaskan disebabkan ramai daripada mereka kurang memahami perbezaan rukun wuduk dan sunat wuduk.

Sementara dalam kajian Mariana Maidin (2013) pernah juga menjelaskan bahawa guru-guru sekolah agama dalam negara kurang mempelbagaikan teknik pengajaran. Guru-guru berkenaan hanya menggunakan kaedah penerangan secara teori dengan menggunakan buku teks dan papan tulis sebagai alat bantu mengajar; kaedah demonstrasi dan latih tubi dalam menyampaikan pengajaran dan pembelajaran wuduk. Dan ini memberikan pengajaran kurang berkesan dan kurang menarik minat murid untuk belajar serta murid kurang fokus sewaktu sesi pengajaran dan pembelajaran.

Justeru itu, pengkaji berpendapat bahawa penggunaan alat bantu mengajar seperti penggunaan video dalam pengajaran dan pembelajaran akan lebih memberikan nilai tambah kepada kualiti pengajaran, kerana ia juga dapat menjadikan pengajaran dan pembelajaran mudah diikuti dan difahami.

Berdasarkan kepada fakta-fakta yang diuraikan di atas, pengkaji memilih tajuk kajian ini bagi mengukuhkan lagi pendapat pengkaji akan pentingnya guru-guru agama untuk memiliki sikap dan inisiatif yang tinggi dalam menggunakan pelbagai pendekatan pembelajaran yang sesuai termasuk penggunaan video demi meningkatkan kualiti pengajaran di sekolah agama di Negara Brunei Darussalam. Pemilihan pendekatan ini diharapkan akan dapat menyelesaikan sedikit permasalahan yang dihadapi oleh murid-murid sekolah agama, khususnya dalam pembelajaran tajuk Wuduk.

Objektif Kajian

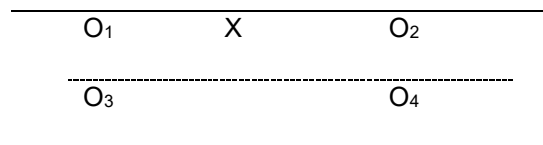
Objektif kajian ini adalah untuk:

- 1) Mengetahui pasti perbezaan skor min bagi pencapaian markah wuduk dalam ujian pra dan ujian pasca dalam penulisan antara kumpulan eksperimen dan kumpulan kawalan.
- 2) Mengetahui pasti perbezaan skor min bagi pencapaian markah wuduk dalam aspek amali antara kumpulan eksperimen dan kumpulan kawalan.
- 3) Mengetahui pasti keberkesanan penggunaan video berdasarkan minat dalam kalangan kumpulan eksperimen.
- 4) Mengetahui pasti perspektif penggunaan video terhadap aspek pembelajaran murid dalam kalangan kumpulan eksperimen.

METODOLOGI KAJIAN

Kajian ini menggunakan reka bentuk kuasi eksperimen, dengan menerapkan pendekatan penyelidikan Kuantitatif. Dalam kajian ini pengkaji menggunakan pendekatan kuasi eksperimen bagi menentukan keberkesanan penggunaan video dalam aspek pengajaran dan pembelajaran tajuk Wuduk darjah 1, di sekolah agama. Reka bentuk kajian kuasi eksperimen dipilih kerana persampelan secara rawak tidak dapat dilakukan (Abdul Shukor Shaari, 2022). Dalam kajian ini, kelas telah ditentukan berdasarkan penetapan asal, kerana di sekolah tersebut hanya terdapat dua buah kelas darjah 1 iaitu kelas 1 Alif dan kelas 1 Ba.

Kajian ini menggunakan reka bentuk kumpulan kawalan ujian pra dan ujian pasca tidak setara (*nonequivalent pretest and posttest control group design*) yang terdiri dari kumpulan kawalan dan kumpulan eksperimen. Berikut adalah rajah reka bentuk kuasi-eksperimen model *nonequivalent control group design* (Fraenkel et al., 2009; 270).



Rajah 1: *Nonequivalent Control Group Design*

O₁ merujuk kepada pemboleh ubah bersandar iaitu ujian pra kajian bagi kumpulan eksperimen. X symbolizes adalah kumpulan eksperimen yang diberi *experimental treatment* iaitu menggunakan pendekatan video. O₂ merujuk kepada pemboleh ubah bersandar iaitu ujian pasca kajian bagi kumpulan eksperimen. Manakala O₃ merujuk kepada pemboleh ubah bersandar iaitu ujian pra kajian bagi kumpulan kawalan. Petak kosong di dalam reka bentuk adalah merujuk kepada kumpulan kawalan yang tidak menerima *experimental treatment*. Dan O₄ merujuk kepada pemboleh ubah bersandar iaitu ujian pasca kajian bagi kumpulan kawalan.

Kumpulan kawalan adalah terdiri dari murid-murid darjah 1 Alif dan kumpulan eksperimen adalah terdiri dari murid-murid darjah 1 Ba. Seramai 39 murid darjah 1 dari salah sebuah sekolah agama di Kawasan Brunei IIA dilibatkan sebagai sampel kajian dalam menjalankan kuasi-eksperimen; dengan memberikan ujian pra dan ujian pasca dalam aspek penulisan dan amali.

Manakala Instrumen yang digunakan dalam kajian ini adalah untuk memperolehi data berkenaan keberkesanan pembelajaran berdasarkan penggunaan video, tajuk Wuduk darjah 1. Instrumen yang digunakan dalam kajian ini ialah ujian pra, ujian pasca dan soal selidik.

DAPATAN KAJIAN

Ada 4 Aspek yang dinilai semasa kajian iaitu:

Aspek penulisan (ujian bertulis), aspek amali (praktikal), aspek minat murid semasa pembelajaran, dan perspektif murid terhadap penggunaan video.

Dapatan kajian mendapati tidak terdapat perbezaan yang signifikan antara dua kumpulan menerusi ujian pra dan ujian pasca dalam penulisan, iaitu $F(1,27) = 3.322$, $P = 0.08$ ($P > 0.05$). Skor min bagi kumpulan kawalan ialah 33.00 ($SP = 11.551$) dan kumpulan eksperimen ialah 33.13 ($SP = 9.804$). Sementara dapatan kajian melalui analisis ujian- t sampel bebas menunjukkan terdapat perbezaan skor min yang signifikan antara kumpulan kawalan dan eksperimen terhadap ujian praktikal berwuduk, iaitu $t(36) = -2.877$, $P = 0.007$ ($P < 0.05$). Skor min bagi kumpulan kawalan ialah sebanyak 14.18 ($SP = 2.599$) dan skor min bagi kumpulan eksperimen ialah sebanyak 16.76 ($SP = 2.917$).

Dalam ujian bertulis dan amali yang dilaksanakan, terdapat peningkatan yang baik bahawa prestasi murid kumpulan eksperimen yang menggunakan video lebih baik berbanding murid dalam kalangan kumpulan kawalan. Ini dapat ditunjukkan melalui penggunaan alat analisis *Statistical Package for the Sosial Sciences (SPSS)* menunjukkan, perbezaan julat markah berdasarkan skor min bagi kedua-dua kumpulan dalam aspek ujian bertulis adalah sebanyak 0.13. Manakala perbezaan julat markah skor min bagi kedua-dua kumpulan dalam aspek amali adalah sebanyak 2.58. sebagaimana yang ditunjukkan dalam jadual berikut.

Jadual 1: *Skor Min bagi Kumpulan Kawalan dan Kumpulan Eksperimen (Penulisan dan Praktikal Berwuduk)*

Kumpulan	Skor Min (Penulisan)	Skor Min Amali
Kawalan	33.00	14.18
Eksperimen	33.13	16.76
Perbezaan Markah	0.13	2.58

Apabila merujuk daripada dapatan skor min, skor min bagi kumpulan kawalan ialah sebanyak 33.00 ($SP = 11.551$) dan kumpulan eksperimen ialah sebanyak 33.13 ($SP = 9.804$). Terdapat perbezaan skor min yang signifikan pada peringkat ujian pasca bagi kumpulan eksperimen berbanding kumpulan kawalan yang menunjukkan adanya peningkatan pencapaian yang baik bagi kumpulan eksperimen berbanding kumpulan kawalan iaitu sebanyak 0.13.

Manakala Hasil dapatan kajian di atas mendapati prestasi pembelajaran murid berdasarkan ujian praktikal menunjukkan hasil yang positif setelah intervensi dijalankan. Hal ini dapat dibuktikan berdasarkan hasil ujian pasca bagi kedua-dua kumpulan; berdasarkan analisis ujian- t iaitu $t(36) = -2.877$, $P < 0.05$. Perbezaan julat markah berdasarkan skor min bagi kedua-dua kumpulan adalah sebanyak 2.58. Skor min bagi kumpulan kawalan ialah sebanyak 14.18 (SP= 2.599) dan skor min bagi kumpulan eksperimen ialah sebanyak 16.76 (SP= 2.917). Ini menunjukkan bahawa, prestasi murid kumpulan eksperimen lebih baik berbanding murid dalam kalangan kumpulan kawalan.

Hal ini menunjukkan bahawa penggunaan video dapat membantu untuk meningkatkan pencapaian aspek penulisan murid, pada masa yang sama dapat memberangsangkan dalam pengajaran praktikal wuduk.

Sementara itu, dapatan soal selidik yang telah diedarkan kepada murid-murid telah menunjukkan hasil yang positif, iaitu ramai responden dalam kalangan kumpulan eksperimen bersetuju penggunaan video telah menarik minat murid dan mereka berasa seronok untuk belajar dalam pembelajaran tajuk Wuduk. Sebagaimana yang ditunjukkan menerusi skor secara purata sebanyak 98.5% dari kalangan murid eksperimen bersetuju terhadap aspek minat pembelajaran menggunakan video. Berikut hasil dapatan data analisis berbentuk deskriptif sebagaimana dalam jadual berikut.

Jadual 2: Analisis Aspek Minat Terhadap Penggunaan Video Dalam Pengajaran Tajuk Wuduk.

Bil	Keterangan	Ya%	Tidak %
B1	Saya suka belajar sambil menggunakan video cikgu.	100% (17)	0% (0)
B2	Saya tidak sabar menunggu video cikgu.	100% (17)	0% (0)
B3	Saya tidak pernah mengantuk melihat video cikgu.	94.1% (16)	5.9% (1)
B4	Saya gembira belajar sambil melihat video cikgu.	100% (17)	0% (0)

Berdasarkan dapatan kajian di atas, penggunaan video dalam pengajaran terbukti berkesan terhadap aspek pembelajaran murid, khususnya terhadap aspek minat murid.

Sementara sebanyak 89.7% perspektif murid yang positif terhadap kesan penggunaan video semasa pembelajaran mereka. Daripada analisis dapatan soal selidik yang telah diedarkan kepada murid, menunjukkan respon yang positif, khususnya terhadap kesan penggunaan video terhadap aspek pembelajaran murid. Antara manfaat yang mereka perolehi melalui penggunaan video ialah membantu mereka agar lebih mudah memahami dan mengingat isi pelajaran. Dengan penerangan yang jelas, murid dapat menguasai isi pelajaran yang disampaikan. Berikut hasil dapatan data analisis berbentuk deskriptif sebagaimana dalam jadual berikut.

Jadual 3: Analisis Perspektif Penggunaan Video Terhadap Pembelajaran Murid.

Bil	Keterangan	Ya%	Tidak%
C1	Tajuk Wuduk menjadi senang selepas saya belajar menggunakan video cikgu	100% (17)	0% (0)
C2	Saya pandai membaca niat wuduk selepas melihat video cikgu	100% (17)	0% (0)
C3	Saya pandai membezakan rukun wuduk dan sunat wuduk selepas melihat video cikgu	76.5% (13)	23.5% (4)
C4	Saya pandai membaca doa selepas wuduk selepas melihat video cikgu.	82.4% (14)	17.6% (3)

Sebagaimana yang ditunjukkan menerusi kedua-dua skor ini secara purata murid bersetuju bahawa penggunaan video sewaktu pembelajaran, telah dapat merangsang minat murid serta mereka berasa seronok untuk belajar dalam pembelajaran tajuk Wuduk, di samping dapat membantu meningkatkan prestasi pembelajaran murid di dalam kelas.

Justeru itu, asas kesediaan guru yang perlu ada pada diri seorang guru ke arah keberkesanan pengajaran dan pembelajaran pendidikan Islam itu ialah kemahiran dalam pengajaran dan pembelajaran, penguasaan ilmu pengetahuan, motivasi diri dan personaliti yang positif. Antara kemahiran yang perlu dikuasai oleh seorang guru ialah kemahiran memulakan pengajaran, kemahiran menerapkan contoh penerangan, kemahiran menyoal, kemahiran pengurusan bilik darjah dan kemahiran memotivasikan murid. Dengan adanya kemahiran tersebut, aktiviti pengajaran dapat dilaksanakan dengan teratur. Kesannya, guru akan berjaya memotivasikan murid dan dapat menarik minat murid untuk belajar. Seterusnya guru akan dapat merangsang murid untuk melibatkan diri secara aktif dalam aktiviti pengajaran dan pembelajaran serta menjadikan suasana pembelajaran kepada yang lebih menyeronokkan (Ab. Halim Tamuri & Khairul Azman Ajuhar, 2010).

Justeru itu, keberkesanan pengajaran tertakluk kepada kebolehan guru menggunakan kemahiran mengajar yang dapat memudahkan aktiviti pembelajaran murid. Semua aktiviti pengajaran adalah tertumpu untuk merangsang murid untuk belajar. Dari itu, terdapat dua fungsi utama dalam pengajaran iaitu merangsang pembelajaran dan mewujudkan situasi pembelajaran yang berkesan (Mook Soon Sang,

2009). Justeru itu, melalui kaedah penggunaan video, dapat menarik minat murid dalam pengajaran tajuk Wuduk.

Di samping itu, penggunaan video dalam pengajaran dan pembelajaran juga memberikan manfaat kepada murid dan guru bagi mewujudkan satu sistem pengajaran dan pembelajaran yang berkesan dari aspek kandungan dan penyampaian. Antara manfaatnya ialah dapat membantu dalam pembangunan asas pengetahuan dan mengukuhkan kefahaman murid (Syamsulaini Sidek & Mashitoh Hashim, 2016; Malini Kamlin & Tan, 2020). Justeru, boleh merangsang murid untuk terus belajar dengan aktif.

Dalam hal ini guru perlu lebih kreatif dalam pembinaan video mengikut kesesuaian isi pelajaran agar isi pelajaran dapat disampaikan dengan jelas dan mudah difahami oleh murid. Selain itu, guru seharusnya mengetahui dan memahami setiap muridnya memiliki tahap kebolehan, tahap latar belakang, sosioekonomi, budaya, bahasa, tahap kognitif dan kemahiran yang pelbagai (Zamri Mahamod, 2011 & Akhiar Shamsuddin, 2012). Tujuannya adalah untuk membantu pemahaman murid khususnya dalam kalangan murid yang lemah, agar dapat memahami isi pelajaran yang disampaikan dan dapat menguasai isi pelajaran dengan baik.

CADANGAN KAJIAN

Berikut adalah cadangan kajian yang harus dilaksanakan.

1. Guru yang mempunyai pengetahuan dan kemahiran teknologi maklumat akan dapat berkongsi sama bersama guru-guru agama yang lain mengenai penggunaan teknologi maklumat khususnya dalam menghasilkan video yang berkualiti dan dapat mengaplikasikannya dalam sesi pengajaran dan pembelajaran di dalam bilik darjah.
2. Guru agama perlulah bersikap kreatif dalam penyediaan pengajaran khususnya sebelum memulakan sesi pengajaran. Contohnya dengan memberikan pendahuluan tentang tajuk pelajaran wuduk (tatacara mengambil air sembahyang dengan betul) yang boleh ditayangkan menggunakan video. Kemudian barulah guru menerangkan cara praktikal mengambil air sembahyang yang betul berpandukan video yang ditunjukkan. Tujuannya adalah untuk memudahkan pemahaman murid ketika guru menerangkan isi pelajaran. Di samping itu, guru agama perlulah terus berusaha untuk meningkat dan mempelbagaikan teknik dan kaedah pengajaran mereka seperti menggunakan video dalam pengajaran dan pembelajaran agar suasana pembelajaran lebih menyeronokkan dan berkesan.
3. Pihak pentadbir sekolah agama perlulah lebih produktif serta kreatif dalam membudayakan penggunaan *information technology (IT)* kepada para gurunya. Perkara ini juga memerlukan sokongan dari pihak Kementerian Hal Ehwal Agama dan Jabatan Pengajian Islam khususnya. Tahap kompetensi para guru agama dalam penggunaan *information*

technology (IT) perlu ditingkatkan dengan menghantar para guru agama bagi menghadiri kursus-kursus atau bengkel yang bersangkutan paut dengan penggunaan *information technology (IT)*. Apa yang diharapkan melalui pembudayaan ini, guru-guru agama celik teknologi maklumat akan dapat memberikan motivasi dan semangat kepada para guru agama yang lain untuk menyampaikan pelajaran dengan menggunakan alat media *information technology (IT)*. Dengan membekalkan para guru agama dengan asas pendidikan alat *information technology (IT)* akan dapat memberikan nilai tambah kepada keberkesanan penyampaian pelajaran para guru agama yang dipercayai akan dapat meningkatkan pemahaman pembelajaran di seluruh warga sekolah agama di negara ini. Pada masa yang sama, ia juga akan dapat mencapai sistem pendidikan kelas pertama yang akan memberikan impak serta mendukung Wawasan Negara 2035.

4. Pihak Jabatan Pengajian Islam boleh mengadakan pertandingan dalam kalangan para guru agama bagi penyediaan video mengikut tajuk yang sesuai dengan isi pelajaran yang diajarkan. Bagi para guru yang menyertai pertandingan tersebut pula perlulah diberi penghargaan. Tujuannya adalah untuk menggalakkan para guru agama untuk menggunakan video dalam pengajaran dan pembelajaran mereka di samping dapat meningkatkan kemahiran para guru agama dalam menghasilkan video bagi kegunaan dalam sesi pengajaran dan pembelajaran.

Kesimpulan

Secara keseluruhannya dapatan kajian dan penyelidikan yang telah dilaksanakan mendapati bahawa penggunaan video sebagai alat bantu mengajar khususnya untuk sekolah agama dalam pelajaran tajuk Wuduk telah memberikan impak yang positif terhadap peningkatan pencapaian markah murid. Perkara ini dapat dibuktikan melalui hasil data pengkaji dan telah dikuatkan lagi hasil kajian-kajian lepas. Apa yang diharap, dengan dapatan kajian ini akan memberikan ruang kepada pihak-pihak yang berkaitan untuk menekankan lagi penggunaan alat bantu mengajar seperti video untuk diaplikasikan oleh semua guru di peringkat Sekolah Rendah Agama, Negara Brunei Darussalam. Selain itu, bagi menyahut cabaran pendidikan di Abad ke-21 dalam sama-sama berusaha untuk mencapai sistem pendidikan kelas pertama yang akan memberikan impak serta mendukung kepada Wawasan Brunei 2035.

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Self-Leadership and Life Satisfaction Among Politeknik Brunei Students: A Mixed Method Case Study on The Moderating Role of Emotional Intelligence

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ABSTRACT

Purpose:

This study aims to examine the relationship between self-leadership and life satisfaction among higher education students, specifically Politeknik Brunei students (N= 155), with emotional intelligence as a moderating factor.

Design/Methodology/Approach:

A mixed-method case study was employed. Quantitative data were collected through a survey using the Revised Self-Leadership Questionnaire (RSLQ) and Satisfaction with Life Scale (SWLS), followed by regression analysis using SPSS. Qualitative data were gathered from semi-structured interviews and analyzed using NVivo to explore how emotional intelligence moderates the self-leadership and life satisfaction relationship.

Findings:

Phase One findings revealed a statistically significant, though weak, positive relationship between self-leadership and life satisfaction ($r = 0.229$, $p = 0.004$), with self-leadership accounting for 5.2% of the variation in life satisfaction. Phase Two findings identified six themes: self-awareness, self-regulation, self-acceptance, help-seeking, holistic approaches, and achieving control. The findings suggest that emotional intelligence moderates the relationship between self-leadership and life satisfaction by enhancing students' stress management and emotional control.

Originality:

This study is novel in its focus on Politeknik Brunei students, a demographic not previously explored in the context of self-leadership and life satisfaction. It also uniquely integrates quantitative and qualitative methods to assess the moderating role of emotional intelligence, providing new insights into how self-leadership and emotional intelligence contribute to student well-being and life satisfaction.

KEYWORDS:

Mixed-Method, Self-Leadership, Life Satisfaction, Emotional Intelligence, Politeknik Brunei.

1. INTRODUCTION

The transition from adolescence to adulthood is often stressful for higher education students, potentially leading to unhealthy behaviours and psychological issues if not managed properly (Maykrantz & Houghton, 2020). Self-leadership plays a crucial role in effective stress management, motivating individuals through natural rewards, constructive thoughts, and behavior-focused strategies (Festa & Knotts, 2021). Numerous studies have established self-leadership as a significant tool for helping students navigate personal, social, and academic life, improving self-esteem and life satisfaction (Uzman & Maya, 2019; Bozygit, 2019). Self-leadership is also key to preparing students for academic success and career readiness, highlighting its importance in higher education (Goldsby et al., 2021). However, limited research has explored the direct relationship between self-leadership and life satisfaction among students, particularly when considering emotional intelligence as a moderating factor. This study addresses this gap by investigating how self-leadership impacts life satisfaction among Politeknik Brunei students, moderated by emotional intelligence.

2. PROBLEM STATEMENT

Many studies emphasize the importance of self-leadership and emotional intelligence among students. While emotional intelligence has been linked to better stress management and life satisfaction (Saddki et al., 2017; Gavin-Chocano et al., 2020), research exploring the moderating role of emotional intelligence in the relationship between self-leadership and student outcomes is limited. Although studies such as Turi et al. (2020) highlight the impact of emotional intelligence on academic performance, its moderating effect on self-leadership's influence on life satisfaction is unknown, particularly among Politeknik Brunei students. Thus, this study addresses this gap by examining whether self-leadership significantly predicts life satisfaction, moderated by emotional intelligence, in Politeknik Brunei students.

3. LITERATURE REVIEW

i. Theoretical and Conceptual Framework

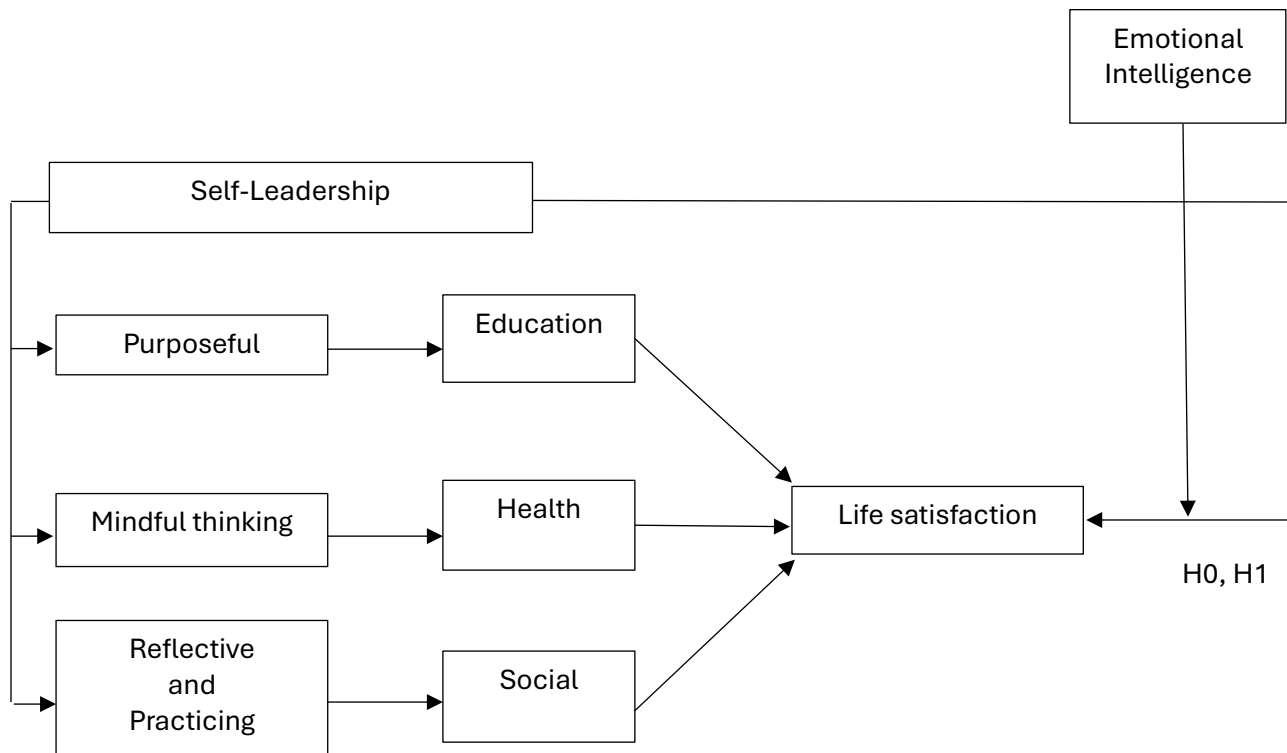
The bottom-up spillover theory suggests that events in subordinate life domains, such as education and health, influence superordinate elements like life satisfaction (Sirgy, 2021). Positive events lead to positive outcomes, while negative events have the opposite effect. This theory, which emphasizes the impact of life events on subjective well-being, was applied in this study (Andrews & Withey, 1976; Sirgy, 2021). Figure 1 shows the conceptual framework of the research model investigated in this study. Self-leadership involves influencing a student's life satisfaction through purpose, mindful thinking, as well as reflection and practices. Similarly, emotional intelligence affects communication, stress management, conflict resolution, and overcoming challenges associated with well-being, education, and social interactions (Gilar-Corbi *et al.*, 2019).

ii. Self-leadership, Life Satisfaction and Emotional Intelligence among Students

Life satisfaction in higher education students is associated with health, accommodation, academic year, and other factors (Hoh et al., 2018). Self-leadership helps students achieve life satisfaction by controlling their thoughts, behaviors, and feelings (Qudsyi et al., 2020). Emotional intelligence, on the other hand, is essential for enhancing self-observation, goal-setting, and stress management among students (Vann et al., 2017; Amzat et al., 2018). Further, emotional intelligence has been linked to self-leadership competencies, particularly behavioral-focused approaches. However, no studies have assessed the relationship between self-leadership and life satisfaction, particularly when moderated by emotional intelligence among Politeknik Brunei students, making this study necessary.

Figure 1

Conceptual Framework



3. PURPOSE

This study aims to assess the impact of self-leadership on life satisfaction among Politeknik Brunei students, moderated by emotional intelligence. The specific objectives are:

- To examine the impact of self-leadership on predicting the life satisfaction of Politeknik Brunei students when moderated by emotional intelligence.

- ii. To explore how emotional intelligence explains the relationship between self-leadership and life satisfaction based on Politeknik Brunei students' responses.

4. RESEARCH QUESTIONS

This study is guided by two main research questions as follows:

Research Question 1: Does self-leadership among Politeknik Brunei students predict their life satisfaction, moderating emotional intelligence?

Research question 2: How do themes emerge in Politeknik Brunei students' responses on their emotional intelligence help explain the positive or negative relationship between self-leadership on life satisfaction?

5. RESEARCH HYPOTHESES

The hypotheses tested in Phase One are:

H0: No statistically significant relationship exists between self-leadership and life satisfaction among Politeknik Brunei students, even when considering the moderating effects of emotional intelligence.

H1: A statistically significant relationship exists between self-leadership and life satisfaction among Politeknik Brunei students, moderated by emotional intelligence.

6. METHODOLOGY

i. Research Design

An explanatory sequential mixed methods design was used. Quantitative data was collected first, followed by qualitative data to explain the findings. This approach combines the strengths of both methods (Dawadi et al., 2021; Schoonenboom & Johnson, 2017).

ii. Participants

a. Phase One

Responses were obtained from PB students ($N = 155$) who were pursuing a Level 5 Diploma across all schools (SBS = 40%, SICT = 14.8%, SSE = 15.5%, SHS = 24.5 and SPC = 3.9%). The majority of the respondents were female (63.9%). Further, the respondents were mostly single (96.8%). The mean age of the respondents was $M = 21.26$ ($SD = 3.13$) (see Table 1).

Table 1

Phase One Demographics Summary

Variable		<i>n</i>	%
Gender	Male	56	36.1
	Female	99	63.9
Marital status	Married	5	3.2
	Single	150	96.8
School	SBS	62	40
	SICT	23	14.8
	SSE	24	15.5
	SHS	38	24.5
	SPC	6	3.9
	Others	2	1.3
Age [<i>M (SD)</i>]	21.26 (3.13)		

b. Phase Two

From one hundred and fifty-five respondents who participated in Phase One, twenty-four of them initially expressed their interest to participate in Phase Two. However, eight were lost to follow up and consequently, only sixteen responded to the semi-structured interview via email. All participants were assigned a pseudonym “OP”. Note that participants coded in red were eliminated (OP3 was eliminated because the respondent responded in *Bahasa Melayu*; OP11 and OP15 were eliminated because saturation was achieved at thirteen). The collected participants’ data on age and gender were also reported in aggregate so that no individual could deidentify the respondents based on the demographic information; hence, promoting confidentiality (see Table 2).

Table 2 Demographic data

Participants	Gender	Age (Years)
OP2	F	25
OP3	F	25
OP5	F	20
OP6	F	21
OP7	M	25
OP9	M	23
OP10	F	25
OP11	F	19
OP12	M	22
OP13	M	19
OP15	M	20
OP16	F	22
OP17	F	21
OP18	M	17
OP19	M	21
OP20	F	19

iii. Measures

Self-leadership was measured using the Revised Self Leadership Questionnaire (RSLQ), which has three main components; (a) behavior-focused, (b) constructive thought, and (c) natural reward (Houghton & Neck, 2002). Life satisfaction was measured using a five-item Satisfaction with Life Scale (SWLS) on a seven-point Likert scale (Riuz et al., 2019). On the other hand, a self-developed semi-structured interview protocol was used to assess respondents' emotional intelligence (see Appendix section).

iv. Procedures

This study was conducted in two phases. In Phase One, a cross-sectional survey was administered online using random sampling to collect quantitative data from one hundred and fifty-five students. After analyzing the quantitative data, Phase Two was initiated, involving semi-structured interviews with sixteen participants who were recruited through convenience sampling. The data from both phases were integrated for interpretation and reporting, allowing for a comprehensive understanding of the relationship between self-leadership, life satisfaction and emotional intelligence.

v. Data Analysis

Quantitative data was analyzed using SPSS (version 26), with significance set at 0.05; Qualitative data was analyzed through content and thematic analysis using NVivo.

7. FINDINGS & DISCUSSION

8.1 Phase One: Regression Analysis Findings

The following tables highlight the regression analysis findings, summarizing the significance levels, model fit, and coefficients for the relationship between self-leadership and life satisfaction, moderated by emotional intelligence:

Table 3

Analysis of Variance (ANOVA) summary

Model	Sum of Squares	df	Mean square	F	Sig.
Regression	333.775	1	333.775	8.495	.004 ^b
Residual	6050.584	154	39.290		
Total	6384.359	155			

a. Dependent variable: Satisfaction with life

b. Predictors: (Constant), self-leadership

Table 4

Model summary

Model	R	R square	Adjusted R square	St. Error of the estimate
1	.229 ^a	.052	.046	6.268

a. Predictors: (Constant), self-leadership

Table 5

Coefficients Summary

Model	Unstandardised B	Coefficients St. Error	Standardised Coefficients Beta	t	Sig.
Constant	9.375	4.168		2.249	.026
RSLS (Self-Leadership)	.089	.031	.229	2.915	.004

At the 0.05 significance level, regression analysis revealed a statistically significant relationship between the independent variable (self-leadership) and the dependent variable (life satisfaction), moderated by emotional intelligence ($p = 0.004$) (see Table 3). The correlation coefficient ($r = 0.229$) indicated a weak positive relationship, with self-leadership explaining 5.2% of the variance in life satisfaction (see Table 4). This suggests that higher levels of self-leadership are associated with higher life satisfaction among Politeknik Brunei students.

As the p-value was less than 0.05, the null hypothesis (H_0) was rejected, confirming a statistically significant relationship between self-leadership and life satisfaction. Therefore, the alternative hypothesis (H_1), which posits a significant relationship between self-leadership and life satisfaction, moderated by emotional intelligence was supported. Despite the weak correlation, this finding aligns with previous studies on the influence of self-leadership on students' well-being (Sampl et al., 2017; Durnali, 2020). Thus, the findings in this study add to the literature on the influence of self-leadership on Politeknik Brunei students' life satisfaction in higher learning institutions such as Politeknik Brunei, particularly in a Muslim faith-based community. Future research should explore additional factors contributing to the remaining 94.8% of life satisfaction variance (see Table 5).

8.2 Phase Two: Content and Thematic Analysis Findings

Qualitative analysis in Phase Two identified six key themes: self-awareness, self-regulation, self-acceptance, help-seeking, holistic approaches, and achieving control. These themes highlighted how students' emotional intelligence contributes to their ability to manage stress, make decisions, and cope with academic and personal challenges. Emotional intelligence emerged as a significant moderator in the relationship between self-leadership and life satisfaction, enhancing students' ability to control emotions and maintain a sense of well-being. The findings underscore the importance of emotional intelligence in helping students apply self-leadership to improve their life satisfaction as follows:

a. Theme 1: Self-Awareness

Self-awareness refers to participants' understanding of their traits, behaviors, and feelings. They were generally aware of their overthinking tendencies, the likelihood of tone varying based on the situation, and experiencing different emotions and feelings that have a positive or negative impact. For example, OP2 expressed, *"My emotions significantly affect my ability to communicate, especially when I'm having a rough day... Sometimes, even a simple 'how are you?' could lead me to tears."* Similarly, OP6 mentioned, *"I try to calm myself down by talking aloud to myself about how I'm feeling, which helps me vent my emotions."*

Other participants, such as OP12, noted how fluctuating emotions led to challenges in maintaining effective communication.

This heightened self-awareness allowed participants to reflect on their emotional responses and their influence on interpersonal interactions. While self-awareness is a popular term in management, its significance was evident in the participants' experiences. Carden et al. (2022) emphasize that self-awareness is crucial for making sound decisions, a notion supported by the participants' ability to recognize and analyze their emotions. This aligns with the idea that emotional intelligence enhances self-awareness, which in turn fosters better decision-making and personal growth.

b. Theme 2: Self-Regulation

Self-regulation emerged to refer to the participants' ability to manage disruptive emotions and respond effectively to stress and conflict. Participants demonstrated various strategies for self-regulation, ranging from positive thinking to self-soothing techniques. For instance, OP17 shared, *"I remind myself that every difficult situation will pass, as long as I keep trying."* Similarly, OP20 explained, *"When I'm calm, I can manage my stress optimistically. But when I'm angry, I tend to shut down and avoid people."* The participants' strategies for regulating emotions often involved techniques such as journaling, logical approaches, and expressing feelings. OP6 mentioned, *"I talk loudly to myself about my emotions, which helps me vent and calm down."* OP7 reflected, *"When I'm calmer, I think of better solutions to the problems I'm facing."* These responses highlight the importance of self-regulation in maintaining composure and managing stress effectively.

As Turi et al. (2020) suggest, self-awareness enhances decision-making abilities, which directly influences self-regulation. The participants' ability to manage their thoughts and actions allowed them to remain composed, confident, and motivated in challenging situations. This aligns with existing literature, which shows that reflective activities give students opportunities to analyze strategies for achieving their goals and improving their well-being (Grimard, 2017).

c. Theme 3: Self-Acceptance

Self-acceptance refers to how participants embrace both their positive and negative attributes to help them overcome life and learning challenges. For example, OP10 shared, *"As I age, I practice being more mindful of my feelings. I validate and acknowledge my emotions, which has honestly made me a better person."* This awareness of emotional responses was echoed by OP13, who described overcoming social anxiety: *"I used to feel trapped by my negative thoughts, but I started making new friends and volunteering. I realized that mistakes are just part of becoming the best version of myself."* Several participants also noted the role of faith in achieving self-acceptance. OP19 stated, *"I use my negative emotions to fuel my motivation during*

workouts, giving 200% every time,” while OP10 explained, *“We just live life and try to find solutions slowly, knowing that God would not burden a soul beyond its capacity.”* This spiritual connection added depth to their understanding of self-acceptance as a tool for managing life's challenges.

As Sogolitappeh et al. (2018) suggest, self-acceptance and emotional intelligence are closely related, both involving the regulation of emotions and thoughts to foster personal growth. The participants' ability to accept their flaws and use their strengths to cope with stress mirrors the findings of Qiu-Qiang et al. (2021), who argue that self-acceptance is a critical factor in promoting psychological well-being and effective social interactions.

d. Theme 4: Help-Seeking

Help-seeking refers to how participants look for assistance from individuals close to them and within their reach as a strategy for overcoming the stress and problems related to life and learning. Many participants relied on friends, family, and lecturers for support. OP18 stated, *“I study with friends, and hanging out with them helps me keep stress at bay.”* OP19 echoed this sentiment, saying, *“When I face challenges that I can't handle alone, I ask my close friends or lecturers for help. I'm not afraid to ask questions.”* Similarly, OP20 mentioned seeking help from lecturers as a last resort, only after attempting to solve problems independently. Participants acknowledged the importance of a support system in difficult times, with OP13 expressing, *“I spend time talking on the phone with my friends. It helps me de-stress and feel better.”* This reliance on interpersonal support reflects the strong emotional connections participants felt with those around them, reinforcing the importance of help-seeking in maintaining emotional balance and managing academic pressures.

As Sogolitappeh et al. (2018) note, emotional intelligence enhances students' awareness of their emotions, enabling them to make effective decisions, such as seeking help. Additionally, help-seeking promotes resilience and the ability to cope with psychological challenges, contributing to greater life satisfaction. This aligns with previous research, highlighting the role of emotional intelligence in fostering interpersonal relationships and emotional support systems that help students overcome stress.

e. Theme 5: Holistic Approaches

Holistic approaches refer to the different strategies that the participants use (other than help-seeking) to overcome personal and learning challenges. Participants focused on their physical, emotional, spiritual, and psychological well-being. Activities such as sports, journaling, music, and social media were common coping mechanisms. OP13 shared, *“The most powerful method for me to relieve stress is reciting dhikr, because it makes me feel calm and peaceful.”* OP2 similarly mentioned, *“I recite surahs and practice deep breathing exercises to manage stress.”* Participants also engaged in creative and physical activities. OP17

noted, *“I release stress by doing activities like coloring, painting, and reading.”* OP16 shared, *“Listening to music and scrolling through TikTok helps me unwind when I’m stressed.”* These varied approaches reflect the individual preferences for managing stress and maintaining emotional balance.

These findings align with Rogowska et al. (2021), who argue that enhancing emotional intelligence helps students better understand their goals and, in turn, improves life satisfaction. The holistic strategies employed by participants, such as spiritual practices and creative outlets, emphasize the importance of emotional intelligence in fostering well-being and resilience. These approaches not only support students’ psychological health but also contribute to their overall life satisfaction.

f. Theme 6: Achieving Control

Achieving control was used to mean the students’ ability to apply their emotional intelligence to manage life-related factors effectively. This helps the participants in navigating life’s challenges, while maintaining a sense of well-being. OP16 explained, *“If you think positively about life, it eases the worries and doubts, even when you’re just doing mundane daily tasks.”* OP5 shared a similar perspective, stating, *“Meeting challenges helps me progress in life, and I become more prepared for future obstacles because of the experiences and knowledge I gain.”* These reflections highlight how emotional intelligence plays a crucial role in helping students maintain control and develop resilience. However, not all participants felt they had fully achieved control. OP7 noted, *“I wish I had the confidence and will to change my attitude. Now, I’m just reaping what I’ve sown, living a subpar life knowing I could do better if I tried.”* This shows the ongoing struggle some students face in balancing their emotional responses with life’s demands.

As suggested by Kujawa & Kamiński (2019) and Neck et al. (2019), self-leadership leads to a sense of control through natural rewards and positive behavior reinforcement. Participants with high emotional intelligence reported feeling more in control of their lives, highlighting the moderating effect of emotional intelligence between self-leadership and life satisfaction. Overall, achieving control, supported by emotional intelligence, fosters a greater sense of life satisfaction and emotional balance.

7. CONCLUSION

This study explored the relationship between self-leadership and life satisfaction, with emotional intelligence as a moderating factor among Politeknik Brunei students. Findings from the quantitative analysis in Phase One supported the alternative hypothesis (H1), revealing a statistically significant yet weak positive relationship between self-leadership and life satisfaction, moderated by emotional intelligence. This suggests that as students develop self-leadership skills, their life satisfaction increases, underscoring the importance of fostering both self-leadership and emotional intelligence in student development.

The qualitative findings in Phase Two highlighted six themes (self-awareness, self-regulation, self-acceptance, help-seeking, holistic approaches, and achieving control), demonstrating the complex ways students apply emotional intelligence and self-leadership to enhance life satisfaction. These insights underscore the practical significance of emotional intelligence as a moderating factor that can enable students to better manage stress, navigate academic challenges, and develop resilience, ultimately contributing to improved life satisfaction.

Future research could investigate other factors that influence the relationship between self-leadership and life satisfaction, such as cultural background or personal values, to provide a more holistic understanding of this relationship. Additionally, longitudinal studies tracking self-leadership and emotional intelligence development over time could offer deeper insights into their long-term effects on life satisfaction. Expanding this research to a broader demographic, including students from various educational institutions and countries, may enhance the generalisability of the findings and contribute to a more comprehensive model of student well-being.

As for implications for educational practice, incorporating self-leadership and emotional intelligence training into educational curricula may provide students with valuable tools for personal and academic growth. By embedding these concepts within core programmes or as standalone modules, institutions can equip students with skills to manage emotions, improve self-regulation, and make positive decisions, leading to enhanced life satisfaction and academic performance. As students develop these competencies, they may also contribute more effectively to their communities, building a supportive, emotionally resilient academic environment. Thus, promoting self-leadership and emotional intelligence in higher education holds promise for shaping a generation of students who are well-rounded and successful academically and professionally.

In conclusion, this study highlights the potential of self-leadership and emotional intelligence as foundational elements of student well-being. Educational institutions that foster these skills can better support students' holistic development, empowering them to thrive academically and personally. By addressing students' psychological and emotional needs, educational practices can evolve to nurture a more fulfilling and balanced student experience, with lasting impacts on both individual well-being and broader societal contributions.

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Appendix A

The Revised Self-Leadership Questionnaire (RSLQ)

INSTRUCTIONS: Read each of the following items carefully and try to decide how true the statement is in describing you.

<i>Not at all</i>	<i>Somewhat</i>	<i>A little</i>	<i>Mostly</i>	<i>Completely</i>
<i>Accurate</i>	<i>Accurate</i>	<i>Accurate</i>	<i>Accurate</i>	<i>Accurate</i>

1	2	3	4	5
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1. I use my imagination to picture myself performing well on important tasks.
2. I establish specific goals for my own performance.
3. Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face.
4. When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy.
5. I think about my own beliefs and assumptions whenever I encounter a difficult situation.
6. I tend to get down on myself in my mind when I have performed poorly.
7. I make a point to keep track of how well I'm doing at work (school).
8. I focus my thinking on the pleasant rather than the unpleasant aspects of my job (school) activities.
9. I use written notes to remind myself of what I need to accomplish.
10. I visualize myself successfully performing a task before I do it.
11. I consciously have goals in mind for my work efforts.

12. Sometimes I talk to myself (out loud or in my head) to work through difficult situations.
13. When I do something well, I reward myself with a special event such as a good dinner, movie, shopping trip, etc.
14. I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.
15. I tend to be tough on myself in my thinking when I have not done well on a task.
16. I usually am aware of how well I'm doing as I perform an activity.
17. I try to surround myself with objects and people that bring out my desirable behaviors.
18. I use concrete reminders (e.g., notes and lists) to help me focus on things I need to accomplish.
19. Sometimes I picture in my mind a successful performance before I actually do a task.
20. I work toward specific goals I have set for myself.
21. When I'm in difficult situations I will sometimes talk to myself (out loud or in my head) to help me get through it.
22. When I have successfully completed a task, I often reward myself with something I like.
23. I openly articulate and evaluate my own assumptions when I have a disagreement with someone else.
24. I feel guilt when I perform a task poorly.
25. I pay attention to how well I'm doing in my work.
26. When I have a choice, I try to do my work in ways that I enjoy rather than just trying to get it over with.
27. I purposefully visualize myself overcoming the challenges I face.

- 28. I think about the goals I that intend to achieve in the future.
- 29. I think about and evaluate the beliefs and assumptions I hold.
- 30. I sometimes openly express displeasure with myself when I have not done well.
- 31. I keep track of my progress on projects I'm working on.
- 32. I seek out activities in my work that I enjoy doing.
- 33. I often mentally rehearse the way I plan to deal with a challenge before I actually face the challenge.
- 34. I write specific goals for my own performance.
- 35. I find my own favorite ways to get things done.

Appendix B

Satisfaction With Life Scale (SWLS)

Instructions: Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

___ In most ways my life is close to my ideal.

___ The conditions of my life are excellent.

___ I am satisfied with my life.

___ So far I have gotten the important things I want in life.

___ If I could live my life over, I would change almost nothing.

Appendix C

SEMI-STRUCTURED INTERVIEW PROTOCOL

Demographic Questions

1. How old are you?
2. What is your gender?

Interview Questions

1. How do you view your ability in terms of using your emotions to communicate with others?
2. Can you comment on your emotional capability to manage stress?
3. Please describe your ability to use your emotions in preventing conflict.
4. Please describe how you view your ability to use your emotions in overcoming learning-related challenges.
5. Can you comment on how your ability to communicate effectively and overcome challenges impacts your life satisfaction?

ChatGPT in the English Language Classroom: Function and Reception

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ABSTRACT

The integration of ChatGPT into education has sparked both enthusiasm and apprehension, with most existing research focusing on external viewpoints. This study examines ChatGPT's practical applications within a secondary school in Brunei, centring on 34 Year 9 students alongside the broader student population. Using a mixed-methods approach, data were collected through school-wide questionnaires, qualitative interviews with Year 9 participants, and analysis of ChatGPT interactions during English lessons. Findings indicate that students use ChatGPT effectively for text generation, vocabulary development, term definition, and response refinement, with beneficial uses outweighing less effective ones. The study also explores ChatGPT's social impact, noting its influence on student autonomy, collaborative learning, and the evolving teacher role within AI-integrated education. Implications for policymakers underscore the importance of cultural and religious guidance in responsible AI use, aligning with community values. Additionally, feedback for ChatGPT developers highlights areas to enhance support for language learners in diverse educational contexts.

Keywords: ChatGPT, second language learners, AI in Education, perceptions of AI

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Originality Statement

This research is an original work that investigates the utilisation and perceptions of ChatGPT among secondary students in the English language classroom. It builds upon existing literature on AI integration in education but specifically addresses a gap regarding how younger students independently use ChatGPT and how they perceive its role in their learning environment. The data, analysis, and findings presented are unique to this study and were derived through a mixed-methods approach involving direct student interactions with ChatGPT, as well as surveys and interviews conducted specifically for this research. Any sources consulted during the study are appropriately cited, and all interpretations, conclusions, and recommendations are based on the study's primary data collection. This research has not been previously published, nor is it under consideration elsewhere.

1. INTRODUCTION

The development of AI, from early systems like the Logic Theorist to advanced models like ChatGPT, has had profound implications on teaching and learning. Initially, AI was used in education for tasks like automated grading or tutoring systems, but the capabilities of AI have dramatically expanded with advances in machine learning and natural language processing.

ChatGPT and similar AI models are now reshaping education by providing on-demand assistance, personalised learning experiences, and adaptive tutoring. Students can interact with AI to receive explanations, ask questions, and practice problem-solving in real-time, without needing a human tutor. This enables learners to study at their own pace, receive instant feedback, and engage in deeper inquiry. Moreover, teachers can leverage AI tools to offload administrative tasks, analyse student performance, and focus on more creative, personalised instruction.

However, the rise of AI in education also raises concerns. Issues like over-reliance on AI for information, the accuracy of AI-generated content, and ethical questions regarding data privacy are critical areas to address. In classrooms, educators must balance the use of AI to enhance learning while ensuring students develop critical thinking and creativity, which AI tools alone cannot teach.

2. PROBLEM STATEMENT

The integration of ChatGPT in the classroom presents both opportunities and challenges for modern education. While it offers students real-time assistance, personalised learning experiences, and instant feedback, it raises concerns about over-reliance on AI, academic integrity, and the potential decline in critical thinking and problem-solving skills. Teachers may struggle to ensure that students are using ChatGPT as a supportive tool rather than a shortcut for completing assignments. Additionally, the accuracy and bias of AI-generated content, along with data privacy concerns, further complicate its widespread adoption. How can educators effectively integrate ChatGPT into the classroom to enhance learning outcomes while mitigating risks associated with its use? Without a structured approach, the use of ChatGPT in English language education could lead to mixed educational outcomes, rather than fostering deeper linguistic competence and literacy. All this boils down to one question, what are students actually using AI tools like ChatGPT for in performing their educational tasks?

3. LITERATURE REVIEW

The advent of sophisticated AI systems, particularly conversational agents like ChatGPT, has generated considerable interest in educational contexts. AI tools powered by Natural Language Processing (NLP) and machine learning promise to enhance both teaching and learning practices by offering adaptive, interactive

learning experiences. However, the rapidly growing body of literature presents a dual perspective, highlighting both the transformative potential and the nuanced challenges of using ChatGPT in educational environments.

3.1 Potential Benefits of ChatGPT in Education

AI-driven tools such as ChatGPT have demonstrated substantial potential to support personalized learning. Luckin et al. (2018) suggest that AI can customize instructional approaches based on student needs, offering immediate feedback and enabling self-paced learning that encourages independent exploration. In secondary education, this real-time adaptability of ChatGPT is valued for aiding students in language acquisition, vocabulary development, and sentence structuring (Holmes et al., 2019). Additionally, Okonkwo & Ade-Ibijola (2021) emphasize the role of AI as a 24/7 virtual tutor, particularly advantageous for students who may lack access to additional academic support.

Beyond direct educational assistance, ChatGPT has proven useful for teachers, alleviating routine tasks and facilitating a focus on more complex instructional strategies. Zawacki-Richter et al. (2019) highlight that by automating administrative tasks, grading, and student monitoring, AI can complement rather than replace traditional teaching practices, allowing educators to engage more deeply with students in creative, higher-order teaching activities.

3.2 Challenges and Risks in Educational Applications

Despite these potential benefits, several risks accompany AI's growing presence in classrooms. Scholars such as Selwyn (2019) caution against over-reliance on AI tools like ChatGPT, noting that while they provide efficient access to information, they can inadvertently reduce students' critical thinking skills. When students bypass traditional cognitive processes by depending on AI for immediate answers, they risk undermining their problem-solving abilities and reducing engagement with educational material (Roll & Wylie, 2016).

A significant challenge lies in maintaining academic integrity as AI tools become more advanced. McArthur (2020) and others have raised concerns about the ease with which ChatGPT enables students to generate assignments with minimal original effort, thereby complicating the detection of plagiarism. Traditional plagiarism detection tools often struggle with identifying AI-generated content, further complicating educators' ability to uphold fair assessment standards (Garcia et al., 2023; Yu, 2023).

Moreover, the extensive reliance on ChatGPT for writing-related tasks could impair students' writing development and engagement. Cotton et al. (2023) and Homolak (2023) argue that by providing ready-made responses, ChatGPT might diminish students' involvement in crafting original arguments, creating an academic disparity between students who use AI extensively and those who rely on conventional study methods. This gap raises ethical concerns about equity in education, as students who abstain from using AI could be disadvantaged.

3.3 Teacher Perspectives and Integration of AI

For AI to serve as a beneficial educational resource, teachers must play an active role in its integration into the curriculum. Spector (2020) suggests that AI literacy and professional development programs are essential to equip teachers with the skills to utilize AI effectively while understanding its limitations. Schneider et al. (2020) advocate for a hybrid teaching model where AI complements human educators, with teachers guiding students through complex cognitive and critical inquiry tasks. By positioning teachers as facilitators, this balanced approach can ensure AI's benefits are maximized without sacrificing essential human interaction.

3.4 Ethical and Data Privacy Considerations

The increased use of AI in educational settings raises significant ethical questions, particularly around data privacy. Williamson and Eynon (2020) examine how AI systems collect and process substantial amounts of data from students, potentially infringing on their privacy and raising concerns about data security. Implementing ChatGPT in classrooms necessitates a cautious approach, requiring robust data protection policies and ethical frameworks to prevent misuse of student data and protect individual privacy rights.

3.5 Cultural and Religious Implications of ChatGPT

As ChatGPT and similar AI tools become increasingly integrated into education, their impact transcends academics, influencing broader cultural and ethical considerations. Recent research highlights the importance of aligning AI tools with local values and cultural beliefs to ensure respectful and ethical integration. Alhassan et al. (2023) discuss how AI adoption in educational contexts, particularly in culturally diverse settings, requires sensitivity to community values and expectations. In some regions, particularly those with strong religious foundations, ChatGPT's integration must be carefully managed to align with societal norms and educational goals.

Research focusing on Muslim-majority educational contexts underscores the importance of respecting religious sensitivities within AI applications. Aziz and Rahman (2023) argue that AI tools in these settings should reflect ethical standards endorsed by religious and community leaders, ensuring that AI complements rather than disrupts traditional educational approaches. Guidelines advocated in such studies emphasize transparent AI functionalities that support, rather than replace, the culturally significant role of teachers.

Farrokhnia et al. (2023) further emphasize the need for culturally informed guidelines that promote responsible AI use in classrooms. Their study suggests engaging local leaders to address concerns such as privacy, data handling, and AI's influence on established educational practices. These recommendations underscore the need to consider ChatGPT's social implications, integrating cultural and religious perspectives to foster a respectful educational experience.

3.6 Current Research Focus and Gaps in Literature

Recent research has concentrated heavily on AI applications in writing and higher education. Studies like AIAfnan et al. (2023) have explored ChatGPT's utility in courses involving communication, business writing, and composition, suggesting that it enhances students' theoretical understanding and helps instructors integrate technology effectively into their pedagogy. Mahapatra (2024) further examined ChatGPT's role as a formative feedback tool in ESL classrooms, noting improvements in students' academic writing. Biswas (2023) highlights ChatGPT's potential to foster self-directed learning by offering personalized feedback, thereby motivating learners.

Additionally, research by Farrokhnia et al. (2023) and Rasul et al. (2023) has analysed ChatGPT's strengths, weaknesses, and its possible impacts on institutional integrity and educational discrimination. These studies underscore the potential for AI tools to democratize information access and reduce instructional workload while also cautioning against risks to academic integrity and the reinforcement of systemic biases.

However, the primary focus of current research remains on higher education, leaving a notable gap in exploring AI's role within secondary education. Firat (2023) examined perceptions of ChatGPT among PhD students and scholars, noting evolving educational systems and ethical considerations. Little is known, however, about secondary students' experiences and independent engagement with ChatGPT, which often occurs without significant teacher guidance. Addressing these gaps is essential to understand the unique impacts of ChatGPT on younger students' academic integrity, learning outcomes, and the evolving teacher-student dynamic.

4. STUDY PURPOSE

The purpose of this study is to explore the role of ChatGPT as a teaching and learning tool in the English language classroom. Specifically, it aims to examine how ChatGPT functions in various instructional activities and settings and to assess students' perceptions of its effectiveness, usability, and impact on learning outcomes. By investigating both the practical applications and the reception of ChatGPT in language education, this study seeks to provide insights into its potential benefits, challenges, and areas for improvement within the context of English language instruction.

5. RESEARCH QUESTIONS

The research questions below were developed for the study:

R1 How do students utilise ChatGPT in the English language classroom?

R2 What are their perceptions regarding ChatGPT usage by self and peers?

6. SIGNIFICANCE OF STUDY

This study holds significance for educators, policymakers, and technology developers by addressing the complexities of incorporating AI, specifically ChatGPT, in the English language classroom. As educational institutions increasingly adopt AI-driven tools, it is essential to understand not only the pedagogical benefits of such technology but also its potential risks. By investigating the ways students utilise ChatGPT, this study aims to provide actionable insights for balanced and effective integration. The findings could inform strategies for maximising ChatGPT's educational value—such as enhancing personalised learning and fostering engagement—while simultaneously addressing concerns about academic integrity and critical thinking. Ultimately, this research aims to contribute to a more comprehensive understanding of how AI tools can support language education, thereby ensuring they serve as assets rather than detriments to students' linguistic and cognitive development.

7. METHODOLOGY

This study employed a mixed-methods approach to examine the integration and impact of ChatGPT in English language classrooms within a Bruneian co-educational secondary school setting. The research involved three components: quantitative data collection through questionnaires, qualitative data collection of ChatGPT usage transcripts via screenshots, and qualitative data collection through interviews. The study targeted the entire population of 686 students across Years 7 to 11, aiming to gather broad insights into how students utilized ChatGPT for educational tasks. Although Year 8 students were initially included for participation in the school-wide questionnaire, they were ultimately unavailable due to exam schedules, resulting in their exclusion from the data collection phase.

Quantitative data were gathered through close-ended questions in the questionnaires distributed school-wide, while open-ended questions provided initial exploratory insights into students' perceptions. Additionally, in-depth interviews were conducted with a select group of Year 9 students, who were part of a focused three-month application of ChatGPT within English classes. This cohort was provided free access to tablets during all English lessons, with each student either having individual access or sharing one tablet per pair, granting them considerable flexibility in experimenting with ChatGPT's features and integrating it into their learning.

Thematic analysis was employed to interpret the open-ended questionnaire responses, ChatGPT transcripts, and interview transcripts. Themes were derived inductively through a process of coding, where the transcripts were systematically analysed, and recurring keywords, phrases, and concepts were identified. These codes were then grouped into broader categories to form cohesive themes that represented patterns of student engagement with ChatGPT. This inductive approach allowed themes to emerge naturally from the data, facilitating an unbiased understanding of students' interactions and experiences with the tool.

Ethical considerations were addressed by anonymizing all student data to ensure privacy. For interview participants, parental consent forms were obtained to comply with ethical standards for research involving minors. This methodology provides a comprehensive view of ChatGPT's role in English language education, capturing general trends across the student body and the nuanced experiences of those directly engaged in practical applications of the tool.

8. FINDINGS

8.1 Questionnaire Findings

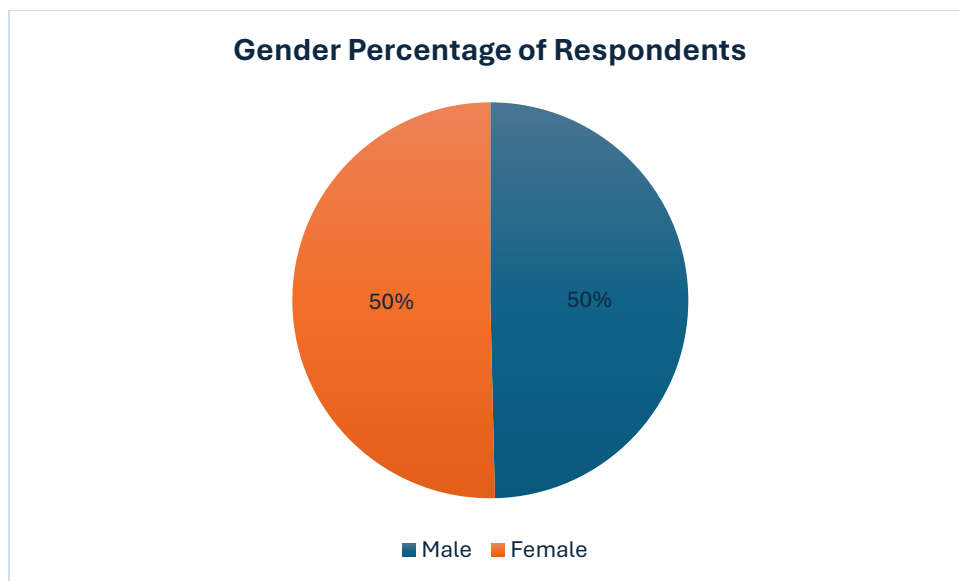


Figure 1

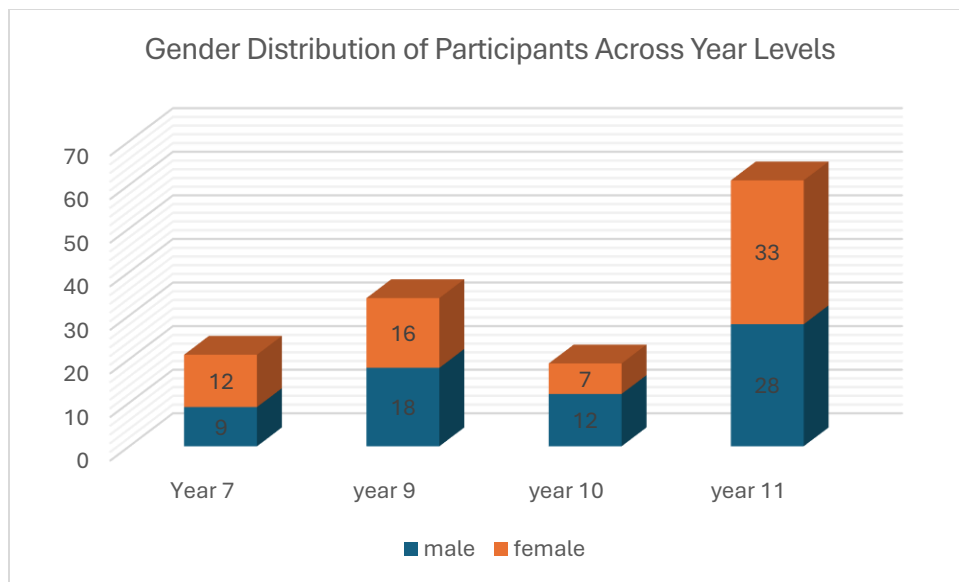


Figure 2

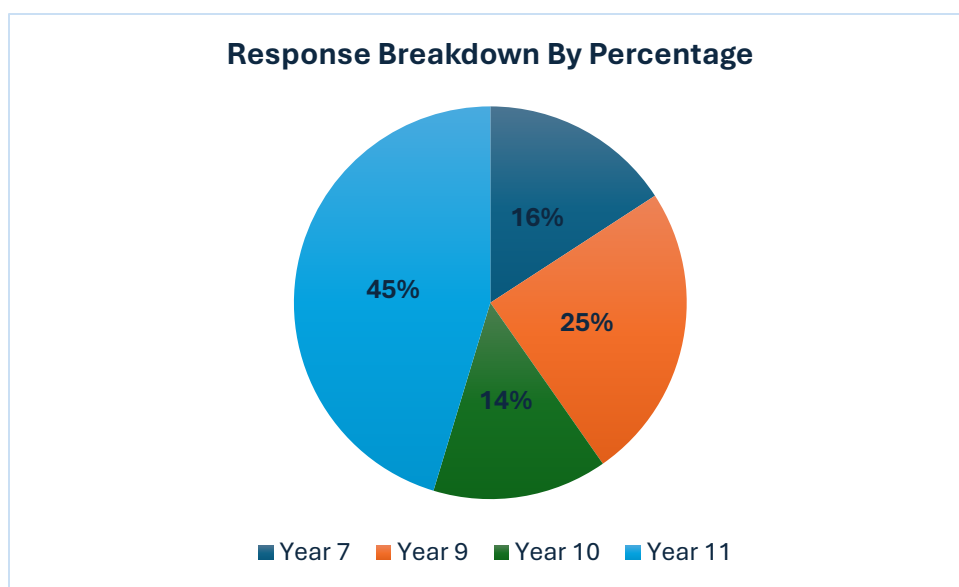


Figure 3

A total of 135 students responded to the questionnaire (67 male and 68 female), distributed as follows: Year 7 (22 respondents), Year 9 (34 respondents), Year 10 (20 respondents), and Year 11 (63 respondents).

The respondent data for this study includes 135 students out of a total school population of 686, yielding a response rate of approximately 20%. Referring to *Figure 1*, the sample is evenly distributed by gender, with 67 male and 68 female participants, ensuring balanced gender representation within the data. Referring to *Figure 2*, individual year level representation by gender also shows no significant difference with year 11 representing the biggest gap at 46% boys against 54% girls. This close split allows for an equitable comparison of perspectives across genders in the analysis.

Referring to *Figure 3*, in terms of year level distribution, Year 11 students make up the largest group of respondents, with 63 or 45% of participants, nearly half of the sample. Year 9 students represent the second-largest group with 34 or 25% of respondents, followed by Year 7 with 22 or 16% of respondents, and Year 10 with the fewest at 20 or 14% of respondents. The substantial representation of Year 11 and Year 9 students provides robust insights from these age groups but may also skew the findings towards the experiences of older students. With Year 7 and Year 10 students less represented and Year 8 students absent from the study due to exam schedules, the data may be somewhat limited in generalizability across all secondary levels.

Overall, this distribution enables an analysis of potential age-related patterns in students' use of ChatGPT, while emphasizing the perspectives of older students, particularly those in Year 11.

8.1.1 When asked where they normally used AI tools in everyday situations the trend below was observed:

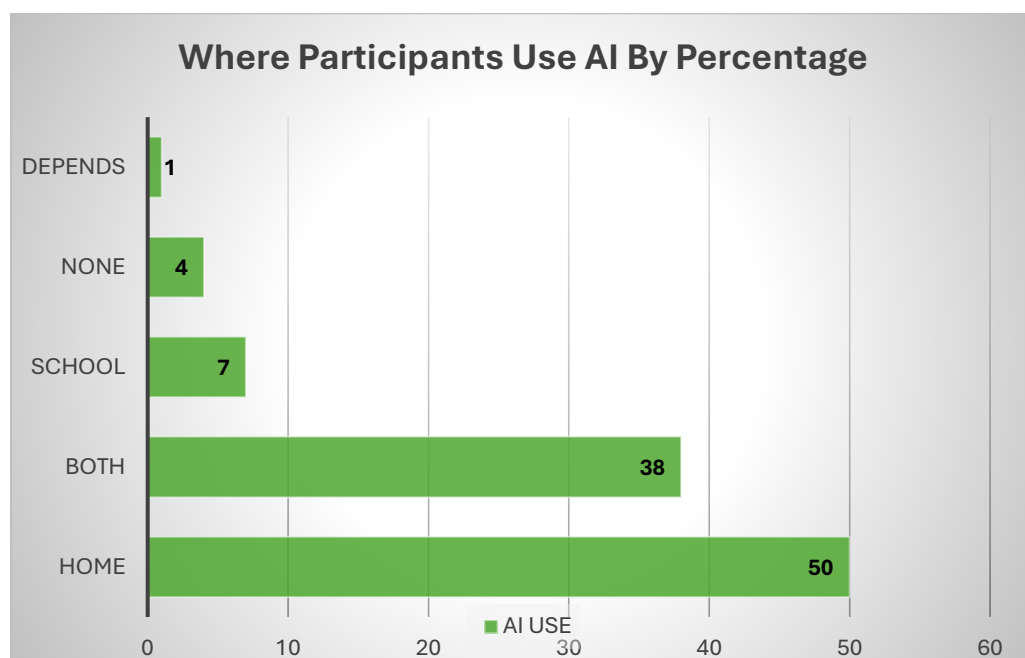


Figure 4

Figure 4, the bar chart titled "Where Participants Use AI By Percentage" displays the percentages of students' AI usage contexts, with data categorized into five groups: "Depends," "None," "School," "Both," and "Home." Here's a description of each category:

1. **Home:** The largest category, with 50% of students indicating they primarily use AI tools at home. This suggests that half of the student population relies on home environments for engaging with AI.
2. **Both:** The second-largest category, where 38% of students use AI both at school and at home. This indicates a significant number of students who utilize AI tools across both environments, possibly suggesting blended usage patterns.
3. **School:** A smaller group, comprising 7% of students, reports using AI exclusively at school. This could imply that these students either lack access to AI resources at home or prefer the school environment for AI usage.
4. **None:** Approximately 4% of students indicate they do not use AI at all, representing a small portion of the population. This may reflect either limited interest or access to AI tools.
5. **Depends:** The smallest category, with 1% of students, suggests that AI usage for a minimal number of students is conditional, depending on specific factors or circumstances.

In summary, the data shows a strong preference for AI usage at home (50%) and blended use across home and school (38%), with minimal exclusive school use (7%), non-use (4%), and conditional use (1%). This distribution highlights the importance of home access for AI engagement among students, with a sizable portion also integrating AI into both home and school settings.

8.1.2 When asked what they used AI for every day, they answered as below:

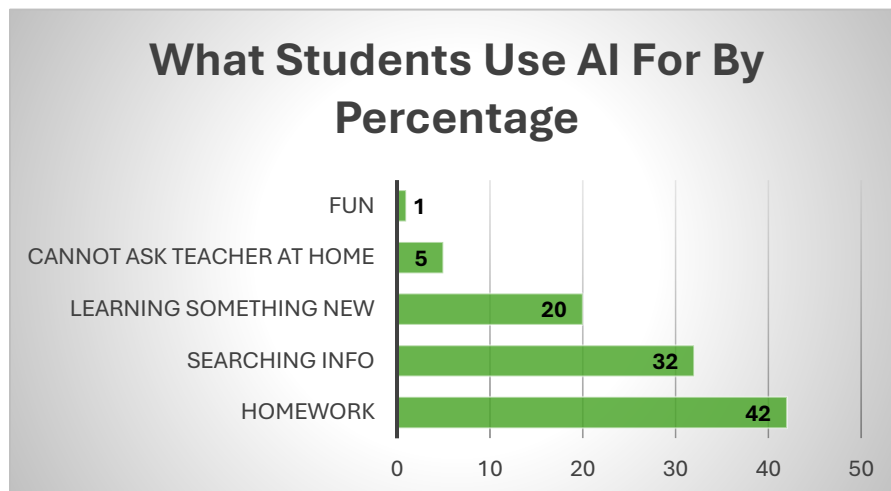


Figure 5

The bar chart titled "AI Usage" illustrates the percentage of students who use AI tools for various purposes every day. Students were allowed to pick more than one option. The data is distributed as follows:

1. **Homework:** This remains the most common use of AI, with 42% of students utilizing AI tools to assist with homework tasks. This high percentage indicates that homework support is a primary motivation for students' engagement with AI.
2. **Searching Info:** The second most common purpose, with 32% of students using AI for information searching. This suggests that many students rely on AI as a quick and accessible source of information, potentially supplementing traditional resources like textbooks or search engines.
3. **Learning Something New:** Around 20% of students use AI to learn new topics. This reflects students' interest in exploring subjects outside the regular curriculum or enhancing their knowledge in certain areas.
4. **Cannot Ask Teacher at Home:** Approximately 5% of students use AI because they cannot reach their teachers for questions at home, indicating that some students see AI as a substitute for teacher support outside of school hours.
5. **Fun:** Only 1% of students report using AI primarily for fun, indicating that entertainment is a minimal driver for AI engagement among students.

In summary, the data emphasizes that students predominantly use AI for academic purposes, particularly for completing homework and searching for information. The lower percentages for "Fun" and "Cannot Ask Teacher at Home" highlight that AI is largely viewed as a tool for educational support rather than for entertainment or casual assistance.

8.1.3 When asked what AI they preferred to use for any purpose, they answered as below:

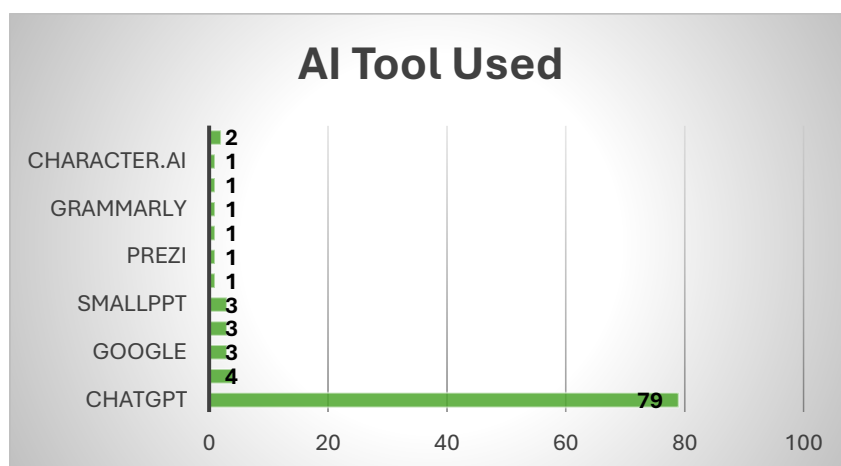


Figure 6

The bar chart titled "AI Tool Used", *Figure 6*, illustrates students' preferences for various AI tools, based on responses to a question about which AI tool they like using. Students are allowed to select multiple answers. The data reveals a strong preference for one specific tool, ChatGPT, compared to several other tools used by students. Here's a breakdown of the data:

1. **ChatGPT:** An overwhelming majority, 79% of students, indicated that ChatGPT is their preferred AI tool. This suggests that ChatGPT is widely favoured, likely due to its versatility and accessibility in supporting various tasks, such as generating text, assisting with homework, or learning new concepts.
2. **StoryboardThat:** The second most popular tool, with 4% of students favouring it. StoryboardThat may appeal to students for visual storytelling and creative assignments, providing a more interactive experience.
3. **SmallPPT, Padlet, and Google:** Each of these tools was preferred by 3% of students. SmallPPT could be useful for presentation tasks, Padlet for collaborative work or brainstorming, and Google for information searching. The equal distribution suggests a small but varied interest in these tools for specific functions.
4. **None, Character.AI, Quilbot, Grammarly, ReadTheory, Prezi, Pitch.com:** Each of these tools was selected by 1% of students, indicating minimal engagement or preference. These tools serve different purposes—such as writing assistance (Grammarly), content creation (Prezi, Pitch.com), and grammar practice (ReadTheory)—but do not appear to be widely favored among the student population.

In summary, ChatGPT dominates as the preferred AI tool, with a significantly higher preference than any other tool listed. The relatively low percentages for other tools suggest that, while students use a variety of AI tools, their engagement with them is limited compared to their strong inclination toward ChatGPT. This trend underscores the popularity and perceived utility of ChatGPT in fulfilling students' academic and personal needs.

8.1.4 When asked for their own definition of AI, students gave a range of answers summarised in *Table 1* below:

Questionnaire results: What's AI to you?		
Characteristics of AI	Function of AI	Impact of AI
• robots and software applications • helpful, time-saving, and capable of making life easier • Simplify tasks • fun learning, gamify learning • not a creation of God • fast • better resources • better explanations, step by step solutions • magic or all-knowing entity	• automation, information retrieval, and problem-solving • learning, generating content, • finding information and researching topics • providing guidance • creative writing tasks • Language related tasks • Problem-solving • understanding difficult topics • Self-study • For difficult subjects • AI generated pictures/art • Picture manipulation	• to destroy or cause harm • associating them with fictional and magical elements • AI misunderstood questions, gave wrong answers, or didn't provide the expected response. • lack the creativity • provide too much information • Inexperience with AI • AI as a subject • Student led adoption • Improving grades

Table 1

The themes were further categorised into 3; positive in green, neutral in yellow and negative in red. Overall, students' perception of AI is positive with a negative slant when it comes to the impact of AI.

1. Characteristics of AI

Perceptions of AI as “robots and software applications” indicate a foundational understanding of AI as both tangible (robots) and intangible (software), aligning with popular media depictions of AI.

Attributes like “helpful,” “time-saving,” and “simplify tasks” suggest that students see AI as a positive force that makes life easier and supports efficiency. This reflects a general societal view of AI as an aid in daily tasks.

Descriptions such as “fun learning” and “gamify learning” imply that students recognize AI’s potential to make education more engaging, possibly associating it with interactive platforms that turn learning into a game-like experience.

Conceptualizing AI as “magic or an all-knowing entity” shows an almost mythical perception among students, suggesting that some view AI as a mysterious, all-capable tool. This could stem from limited technical understanding or the novelty of AI tools like ChatGPT.

Statements like “not a creation of God” may reflect cultural or religious beliefs influencing students’ views on AI, highlighting a potential disconnect between AI and human spirituality or ethics. This could suggest that students see AI as something “unnatural,” with implications for AI acceptance within certain cultural or religious groups.

2. Function of AI

Common uses such as “automation,” “information retrieval,” and “problem-solving” show that students view AI as a multifaceted tool capable of handling a variety of practical tasks. This aligns with the way AI is positioned as a productivity tool in education.

Specific educational functions, including “learning,” “generating content,” “creative writing tasks,” and “language-related tasks,” highlight AI’s role in supporting academic activities, especially in areas where it can aid language acquisition or creative thinking.

Mentions of “self-study” and “understanding difficult topics” suggest that students value AI for independent learning, using it to clarify challenging concepts. This may indicate that AI is perceived as a supplementary tool, especially in subjects they find difficult.

Creative uses like “AI-generated pictures/art” and “picture manipulation” indicate that some students see AI as a tool for artistic expression, which is a more novel use of AI in education. This might reflect exposure to platforms that use AI for creating or enhancing visual content.

3. Impact of AI

Fears around AI's potential “to destroy or cause harm” point to apprehension about the power and potential misuse of AI. This sentiment could stem from media representations or personal concerns about the unchecked capabilities of AI.

“Associating AI with fictional and magical elements” shows a mix of intrigue and confusion, where AI is perceived as otherworldly or not fully understood. This perception might lead students to see AI as both exciting and unpredictable.

Concerns about “misunderstood questions, wrong answers, or unmet expectations” indicate some dissatisfaction with AI reliability. These concerns are valid given AI's occasional inability to fully comprehend context, especially in open-ended learning environments.

Recognition of AI's “lack of creativity” and tendency to “provide too much information” suggests an understanding of AI's limitations. Students seem aware that AI can overwhelm with data or fail to offer genuinely creative solutions, which could affect its perceived utility in certain tasks.

“Student-led adoption” and “improving grades” reflect positive outcomes associated with AI use, showing that students feel a sense of control over integrating AI into their learning. The link to “improving grades” implies that some students are already experiencing tangible academic benefits.

Summary of “Definition of AI” Analysis

The data reveals a mix of curiosity, practicality, and caution among students regarding AI. They recognize AI's role in easing tasks, supporting learning, and even making studying more enjoyable. However, they are also aware of its limitations—both in reliability and in its capacity to fully emulate human creativity or emotion. Moreover, cultural and ethical perspectives (e.g., “not a creation of God”) influence student attitudes, which may impact their willingness to adopt AI widely in educational contexts.

Students seem most confident in using AI for straightforward tasks, such as problem-solving, searching for information, and homework support, and less trusting in situations where nuanced understanding or creative insight is required. Additionally, there are hints of a student-led AI adoption trend, suggesting that students are motivated to explore and integrate AI tools independently, despite some misgivings.

This analysis suggests that while students appreciate AI as a helpful educational tool, educators and policymakers should address concerns around AI's limitations, ethical implications, and potential misuses to foster more balanced, informed use in learning environments.

8.1.5 The students were also asked to grade their perception of different AI related statements and the Likert ratings are summarised in *Table 2* below:

Statement	Mean	SD
I think every student should learn about AI in school.	3.72	0.82
AI is very important in education.	3.68	0.80
I think AI makes learning more effective.	3.53	0.80
I think that most jobs in the future will require knowledge related to AI.	3.83	0.76
It is fun to learn about AI.	3.58	0.95
I think that there should be more class time devoted to AI in school.	3.90	0.80
I am interested in the development of AI.	3.41	0.82
I think AI tools help improve my learning.	3.73	0.82
Overall	3.60	0.83

Table 2

Table 2 presents student responses to various statements about AI, showing both the mean Likert ratings and the standard deviations (SD) for each statement. Here's an analysis of the results:

1. Interest in AI Learning and Importance:

- The statement "I think that there should be more class time devoted to AI in school" received the highest mean score of 3.90, with a relatively low SD of 0.80. This indicates that many students are interested in spending more class time learning about AI and generally agree on this point.
- "I think every student should learn about AI in school" and "I think AI tools help improve my learning" follow with means of 3.72 and 3.73, respectively. The responses suggest a broad acceptance among students that AI has a role in education and can enhance learning.

2. Perceptions of AI's Role in the Future:

- "I think that most jobs in the future will require knowledge related to AI" received a mean of 3.83 and the lowest SD (0.76), indicating a strong consensus. This suggests that students view AI literacy as essential for future career opportunities and generally agree on its importance.
- The statement "AI is very important in education" also scored highly with a mean of 3.68, indicating that students acknowledge the relevance of AI in their learning environment.
-

3. Perceived Effectiveness and Enjoyment of AI:

- Statements about AI making learning more effective ("I think AI makes learning more effective," mean = 3.53) and enjoyment in learning about AI ("It is fun to learn about AI," mean = 3.58) show moderate levels of agreement. The slightly higher SD of 0.95 for "It is fun to learn about AI" suggests varied perceptions, with some students perhaps finding it less enjoyable than others.
- Interest in AI's development ("I am interested in the development of AI") had the lowest mean score of 3.41. Although students generally show interest, this lower rating indicates a comparatively lesser enthusiasm for AI development itself versus its applications or importance in education.

4. Overall Attitude:

- The overall mean score of 3.60 reflects a generally positive outlook among students toward AI's role in education. With a standard deviation of 0.83 across all statements, responses show some variability, but there is still a tendency towards agreement with the positive aspects of AI in educational contexts.

Reflection:

- **Strong Interest in AI Education:** The data indicates that students recognize the importance of learning about AI in school, with high scores for statements on devoting more class time to AI and the necessity for all students to learn about AI. This interest aligns with broader educational trends that aim to incorporate AI literacy into curricula, highlighting a positive reception to integrating AI-related content in educational systems.
- **Practical Relevance:** The high mean score for "most jobs in the future will require knowledge related to AI" underscores the perception among students that AI skills will be crucial in the job market. This reflects awareness among students of the potential career advantages that AI knowledge may offer, suggesting that they value practical skills that align with future employment opportunities.
- **Varied Enjoyment and Engagement:** The variation in responses, especially regarding enjoyment in learning about AI ($SD = 0.95$), indicates that while some students find AI engaging, others may not feel as enthusiastic. This could reflect differences in individual learning preferences or the specific AI topics and tools being taught. This variation highlights the importance of ensuring that AI learning experiences are diverse and accessible to engage a broader range of students.
- **Moderate Enthusiasm for AI Development:** Students seem less interested in the development of AI itself, which may suggest that they are more focused on AI's applications rather than its technical aspects. This could guide educators toward focusing on practical AI skills and applications that directly impact students' lives and future career paths.

Summary of Likert Scale analysis:

Overall, students show a positive attitude toward learning about AI and recognize its significance in both educational and career contexts. While they generally support increased class time and believe AI can improve learning, there is some variation in enjoyment and engagement levels. The relatively lower interest in AI development suggests that students may prefer learning about AI's applications rather than its technical underpinnings. This insight can help educators tailor AI curriculum to focus on practical, engaging applications while addressing the varied interests and preferences of students.

8.1.6 Can AI replace teachers?

The students were asked whether AI would be able to replace teachers.

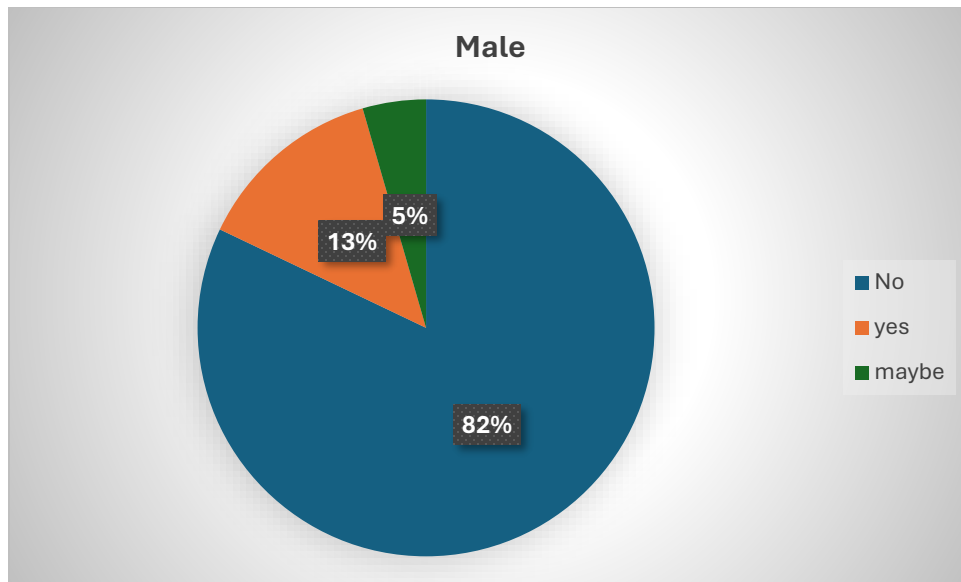


Figure 7

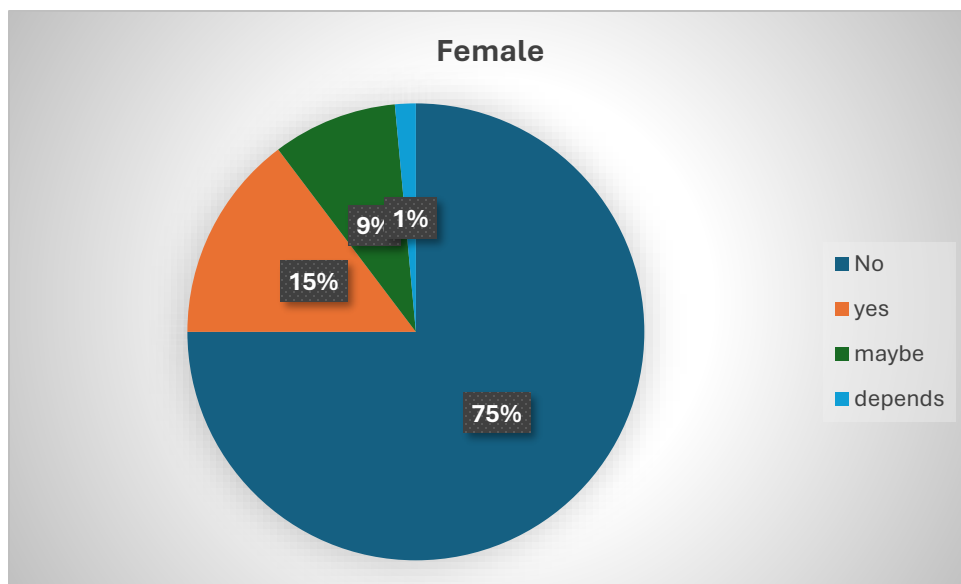


Figure 8

The two pie charts, *Figure 7* and *Figure 8*, illustrate the distribution of male and female students' opinions on whether AI can replace teachers.

For **male students**:

- A substantial majority, 82%, believe that AI cannot replace teachers ("No").
- 13% think that AI could replace teachers ("Yes").
- A smaller percentage, 5%, are uncertain and responded with "Maybe."

For **female students**:

- Similarly, a majority (75%) also feel that AI cannot replace teachers ("No").
- A slightly higher percentage than males, 15%, believe that AI could replace teachers ("Yes").
- 9% are unsure and selected "Maybe."
- An additional 1% expressed that it "Depends," suggesting conditional factors might influence their views on AI replacing teachers.

Analysis

While both genders predominantly agree that AI cannot replace teachers, a slightly higher proportion of female students (15%) believe that AI could play a more significant role in potentially replacing teachers compared to male students (13%). Additionally, female students exhibit a bit more openness, as indicated by the "Depends" response not present in male responses. Male students, by contrast, show a slightly stronger consensus in their "No" responses.

This data suggests that while scepticism about AI replacing teachers is common among both genders, female students display a slightly more varied range of opinions on the topic, with a few considering conditions under which AI might effectively support or replace teachers.

The open-ended responses were thematically analysed through identifying common codes which yielded the three common themes below. The open-ended question results are in *Table 3* below:

Personal interaction	Teaching style	AI limitations
Many believe that teachers provide emotional support, empathy, and a personalized learning experience that AI cannot replicate.	Teachers are considered better at explaining complex topics, addressing individual student needs, and providing real-world experience.	Concerns about AI giving incorrect information, lack of creativity, emotions, and the potential for malfunctions were frequently mentioned. Religious considerations were also mentioned.

Table 3

Table 3 organises responses into three main themes that highlight why respondents believe AI cannot fully replace teachers. Here's an analysis of each theme:

1. **Personal Interaction:**

- Many respondents emphasized the value of personal interaction provided by teachers, which they believe AI cannot replicate. Key aspects mentioned include **emotional support, empathy**, and a **personalized learning experience**. This suggests that students see teachers as more than information providers; they also view them as figures who understand and respond to their individual needs and emotions. The emotional and relational aspects of teaching are seen as fundamental and irreplaceable by AI.

2. **Teaching Style:**

- Teachers are seen as superior in **explaining complex topics** and addressing the **individual needs** of students. Additionally, teachers are valued for providing **real-world experience**, which implies that students appreciate practical examples and contextual knowledge that AI may lack. This theme highlights that students recognize the adaptive and responsive teaching methods that teachers employ, especially in handling complex or nuanced content, which they find AI less capable of.

3. **AI Limitations:**

- Concerns around AI's limitations were frequently noted. Respondents were worried about **incorrect information, lack of creativity**, and absence of **emotions** in AI responses. Additionally, the potential for **malfunctions** and issues with reliability was also highlighted. Interestingly, **religious considerations** emerged, suggesting that some students view the concept of AI through a cultural or ethical lens, potentially seeing it as conflicting with certain values or beliefs.

In summary, this analysis reflects a belief in the unique, human qualities of teachers that AI cannot substitute. Respondents value teachers for their empathy, adaptability, and real-world expertise, while viewing AI as a tool with specific limitations that might make it unsuited to the nuanced demands of education.

8.2 Interview Analysis

The interview transcripts were coded and thematically analysed resulting in the common themes in *Table 4* below:

Themes	Description
Use of AI	Students recognize AI as a useful tool in tasks like generating text, retrieving information, and improving comprehension. AI tools like ChatGPT and Copilot are frequently used for specific subjects, such as English and computer science, to aid learning. AI in the Classroom: Students primarily use AI to generate stories, find definitions, and assist with homework. They appreciate the convenience of AI, particularly in language learning.
Advantages of AI	Simplifying complex topics, speeding up tasks, and providing quick, digestible information. It is seen as an efficient alternative to traditional resources like dictionaries and textbooks.
AI vs Teachers	Lack of emotional intelligence, creativity, and human understanding. Students worry about misinformation, over-reliance on AI, and its potential to hinder personal effort and self-reliance. They also note that AI cannot replace the emotional interaction and support teachers provide. All students agree that AI cannot replace teachers due to its lack of empathy, emotional depth, and human connection. They emphasize the importance of personal interaction in learning, which AI cannot replicate, and the suspicion of it as being not of God and not be afforded human privileges.
Ethics of AI	Students recognise the importance of using AI responsibly, noting that copying AI-generated content without understanding it is counterproductive. There are concerns about the unfair use of AI during exams or assignments.
Future Direction	Suggestions for improving AI include incorporating emotional language, offering multiple-choice answers, and adding visual aids to make interactions more engaging and accurate.

Table 4

Analysis of Themes and Codes

1. Use of AI:

- **Frequent Utility in Education:** Students view AI as a valuable tool that assists them in various tasks, such as generating text, retrieving information, and aiding comprehension. This suggests that students see AI as a helpful resource, especially in specific subjects like English and computer science. They frequently use AI for tasks like story generation, finding definitions, and helping with homework.
- **Appreciation for Language Learning:** The data indicates that students particularly appreciate AI's role in language learning, which could imply that AI tools are filling a gap in traditional educational resources by offering quick assistance with language-related tasks.

2. Advantages of AI:

- **Efficiency and Convenience:** Students highlight that AI simplifies complex tasks, speeds up processes, and provides digestible information. It is seen as an effective complement to traditional resources like textbooks, which may suggest a perceived benefit of AI in supplementing, rather than replacing, conventional educational tools.
- **Support for Self-directed Learning:** The ease of access and immediacy of AI tools allows students to engage in learning independently, fostering a level of autonomy that can be advantageous, especially for students seeking support outside of regular class hours.

3. AI vs. Teachers:

- **Limitations of AI in Emotional and Creative Aspects:** Students express a strong consensus that AI lacks the qualities necessary to fully replace human teachers. Concerns include AI's limitations in emotional intelligence, creativity, empathy, and human understanding. This suggests that students highly value the relational aspects of learning that only human teachers can provide.
- **Concerns about Over-reliance on AI:** There is a shared sentiment about the risk of over-relying on AI, as students worry it may hinder personal growth and self-reliance. They acknowledge that while AI can aid learning, it cannot replicate the personalized, supportive experience that human interaction brings, which is essential for a well-rounded educational experience.

4. Ethics of AI:

- **Responsible Usage and Fairness:** Students show awareness of ethical considerations, including the potential downsides of copying AI-generated content without understanding it. This suggests a developing sense of academic integrity and responsibility among students. The concern about fairness, particularly regarding the use of AI during exams or assignments, indicates a cautious approach towards AI in scenarios where it may offer an undue advantage.
- **Dependence on Human Guidance:** Ethical concerns seem to imply that students recognize the need for human oversight in AI usage, potentially to guide them in using AI responsibly and discerningly in their studies.

5. Future Directions:

- **Improvements for Greater Engagement and Accuracy:** Students suggest adding emotive language, visual aids, and multi-choice options in AI tools to make them more engaging and accurate. These recommendations indicate students' desire for AI interactions that are closer to human interaction, suggesting that improvements in these areas could make AI more relatable and useful.
- **Support for Diverse Learning Needs:** The suggestions for future development reflect students' awareness of different learning needs. By requesting options like multilingual support and varied response formats, students demonstrate a nuanced understanding of how AI could better cater to individual learning preferences.

Summary

Overall, students appear to have a positive yet cautious attitude toward AI in education. They appreciate the efficiency and convenience that AI tools offer but are also mindful of the limitations, especially in areas requiring emotional and personalized interaction. The emphasis on responsible use and ethical considerations reflects students' awareness of the potential risks and pitfalls associated with AI, particularly regarding academic integrity. Additionally, the desire for improvements in AI functionality reveals a forward-thinking perspective, where students envision AI as a more dynamic and adaptive tool.

In summary, while students recognize AI's utility, they also value the unique role of human teachers and emphasize the importance of ethical use and continuous improvement of AI to enhance learning. These insights can inform educators and developers about areas where AI could be improved and integrated responsibly to support, rather than replace, traditional educational practices.

8.3 ChatGPT Transcripts

The focus of the analysis was how it relates to student learning; thus, the main subject of analysis were the student prompts. When investigating student prompts entered into ChatGPT in the class, several specific uses were found. They are divided into 5 categories, namely Content Creation, Language and Vocabulary Support, Information Retrieval and Organisation, Engagement and Interaction, and Problematic or Unsuccessful Interactions. They are in turn colour coded to show their productiveness in the students' learning, where green is generally productive, yellow is neutral and red counter to their learning. This is summarised in *Figure 9*. Generally, students overwhelmingly use AI productively. The detailed results are displayed in *Table 5* below:

Category	Use
Content Creation	- Text generation - Question and answer generation - Idea generation - Post input generation - Analysis query
Language and Vocabulary Support	- Creating word lists - Word definitions - Translation requests
Information Retrieval and Organisation	- Informational queries - Summarising - Organising information - Simplifying requests - Confirmation requests
Engagement and Interaction	- Conversational greetings - Irrelevant queries - Distraction/Frustration input
Problematic or Unsuccessful Interactions	- Informational challenge

	- Failed query
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Table 5

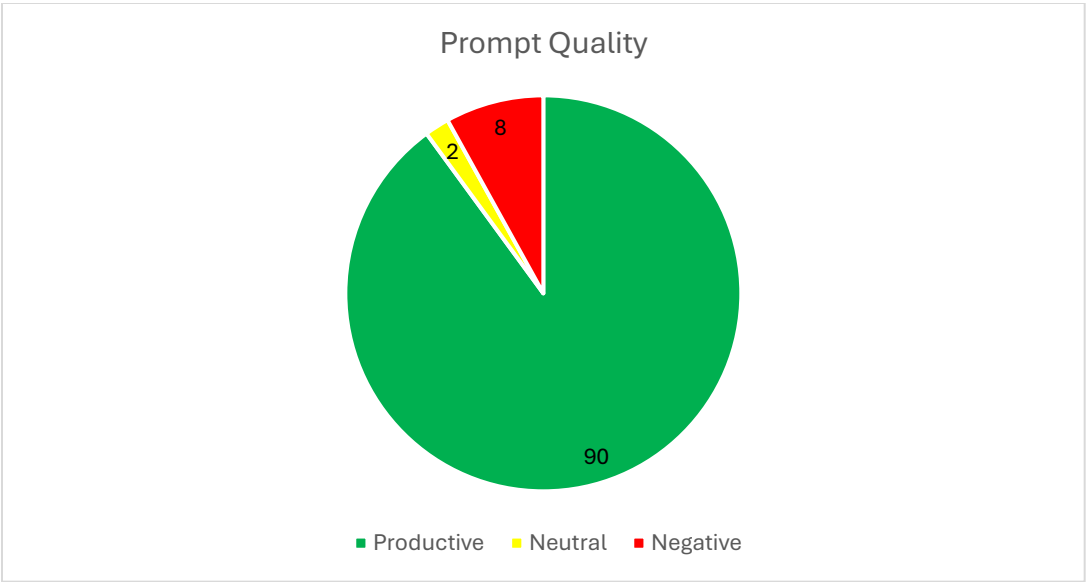


Figure 9

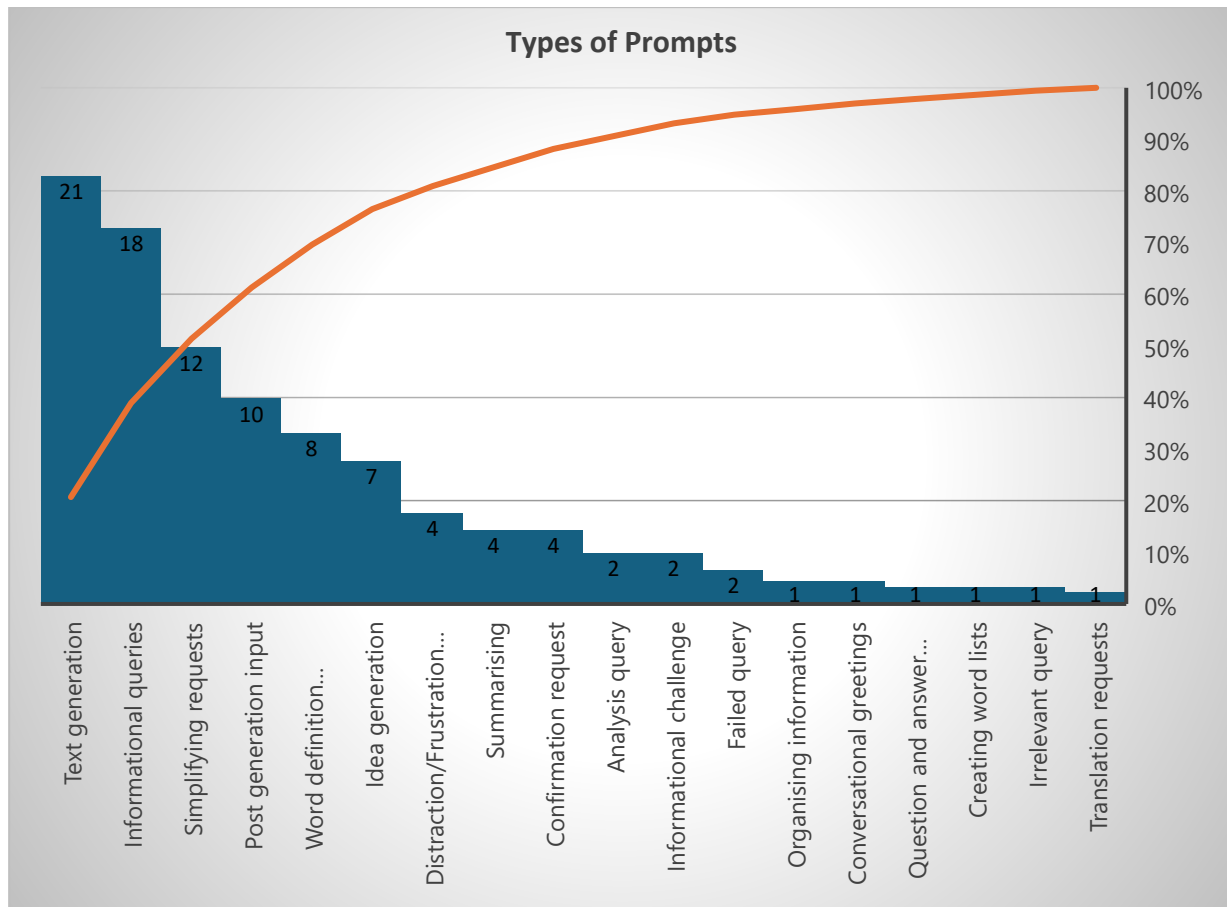


Figure 10

Figure 10 above illustrates the distribution of various prompt types used by students when interacting with ChatGPT. The x-axis represents different prompt types, while the y-axis shows the frequency of each type. A cumulative percentage line also indicates the accumulation of prompt types across the dataset.

Key Observations:

1. Most Common Prompt Types:

- **Text Generation** (21%) and **Informational Queries** (18%) are the most frequently used prompt types, together accounting for a significant proportion of interactions. This suggests that students primarily use ChatGPT to generate content and seek information.

2. Moderately Used Prompts:

- Prompts like **Simplifying Requests** (12%), **Post Generation Input** (10%), and **Word Definition** (8%) were also common, indicating that students often seek assistance with understanding or breaking down information after initial content generation.
- **Idea Generation** (7%) indicates that students use ChatGPT to brainstorm or develop new ideas.

3. Less Frequent Prompt Types:

- Prompts such as **Summarising**, **Confirmation Requests**, and **Distraction/Frustration Input** (each 4%) suggest that students occasionally require summarization, verification, or express frustration during interactions.
- Prompts categorized as **Analysis Query**, **Informational Challenge**, and **Failed Query** (2% each) imply some use cases where students engage in more complex or unsuccessful interactions with the tool.

4. Rare Prompt Types:

- **Organising Information**, **Conversational Greetings**, **Question and Answer Generation**, **Creating Word Lists**, **Irrelevant Query**, and **Translation Requests** (each 1%) show minimal usage, suggesting that these functions are not central to students' primary objectives.

5. Cumulative Distribution:

- The cumulative line graph shows that the most frequently used prompts cover the majority of interactions. By the time we reach the "Post Generation Input" category (around 85% cumulative percentage), we see diminishing returns in prompt variety, suggesting that a few core prompt types (e.g., text generation and informational queries) account for most of the activity.

Summary

Overall, *Figure 10* highlights that students primarily engage with ChatGPT for content generation, informational purposes, and simplification tasks. There is less frequent use for prompts related to verification, complex analysis, or casual conversation. This pattern suggests that students view ChatGPT as a functional tool to produce and clarify content, with limited emphasis on social interaction or detailed analytical functions. It is still useful to point out, though, that while Distraction/Frustration and Failed input might not be preventable, Informational Challenge can be remedied with a change in the ChatGPT protocols. Currently, such challenges are basically dismissed.

9 DISCUSSION

This study aimed to explore how students utilize ChatGPT in an English language classroom and their perceptions regarding its usage. The findings are organized into three key themes: the ways in which students engaged with ChatGPT, their perceptions of its value and limitations, and the broader social and cultural implications of AI use in education.

Theme 1: Utilisation of ChatGPT in the Classroom (Addressing R1)

The data reveals that students employed ChatGPT in diverse ways, with the most common activities being text generation, informational queries, and simplification requests. These findings are consistent with prior studies, such as those by Holmes et al. (2019), who noted that AI tools like ChatGPT can support language learning by facilitating tasks that require quick and accessible information. Students often used ChatGPT to generate text, such as sentence or paragraph structures, which helped them overcome writer's block or find ways to express ideas more fluently. This supports the notion that AI can serve as a bridge in second language acquisition by providing immediate language examples (Okonkwo & Ade-Ibijola, 2021).

Additionally, informational queries and vocabulary support were among the frequently cited uses. These functions aligned with findings by Zawacki-Richter et al. (2019), who suggested that AI tools could act as real-time informational resources, offering definitions, synonyms, and usage examples that benefit language learners. Importantly, students indicated that they used ChatGPT not only for direct answers but also for restructuring information in a way that matched their comprehension level, highlighting ChatGPT's adaptability to individual learning needs (Luckin et al., 2018).

However, the findings also underscored limitations, as some students found that ChatGPT occasionally generated irrelevant or distracting information. These issues align with Roll and Wylie (2016), who argue that while AI can provide quick answers, over-reliance may impede critical thinking and self-reliance.

Moreover, the occasional inaccuracies of ChatGPT responses, as noted by the students, indicate a need for AI literacy among users to discern credible information—a point raised by Bender et al. (2021).

Theme 2: Student Perceptions of ChatGPT Usage (Addressing R2)

Students' perceptions of ChatGPT reveal a nuanced view, balancing appreciation for its utility with concerns about potential over-reliance. A key perception was that ChatGPT could support independent learning, which is consistent with findings from Mahapatra (2024) who documented improved writing skills among ESL learners using AI-driven feedback tools. Many students found ChatGPT to be particularly valuable for tackling language tasks, as it provided structured, readily accessible guidance. This perception supports the idea that AI can democratize learning resources, making academic support available beyond the classroom (Biswas, 2023).

On the other hand, students expressed concerns regarding the quality of learning outcomes when relying too heavily on AI. This sentiment echoes Selwyn (2019), who cautions that AI should not replace traditional learning processes as it may limit opportunities for developing critical thinking skills. Additionally, students were wary of the ethical implications of using AI for academic work, particularly in the context of fairness and academic integrity (Garcia et al., 2023). The potential for misuse—such as using ChatGPT-generated text without modification—was a recurring concern, indicating a need for clear guidelines on ethical AI use in schools.

Theme 3: Broader Social and Cultural Implications

Beyond practical and educational concerns, students also raised significant social and cultural issues surrounding AI's role in education. A prominent theme was the belief that AI, despite its capabilities, cannot replace human teachers. Students emphasized that teachers provide emotional support, personalized guidance, and context-specific knowledge that AI lacks, supporting similar conclusions drawn by Spector (2020) and Schneider et al. (2020). This finding highlights the enduring value of teacher-student interactions, which remain integral to the educational experience.

Moreover, some students expressed religious and cultural reservations about AI, viewing it as a tool that lacks the “human” element and therefore cannot fulfill roles traditionally held by people. These concerns are reflected in the work of Farrokhnia et al. (2023), who discussed the importance of cultural context in AI adoption, especially in communities where educational practices are deeply intertwined with cultural and religious values. This study, conducted within a predominantly religious context, revealed that some students were uncomfortable with the idea of AI replacing human authority figures like teachers. This aligns with Rasul et al. (2023), who argued that AI should be integrated cautiously in educational settings, respecting local cultural and ethical norms.

10 CONCLUSION

In summary, the study illustrates a multifaceted view of ChatGPT's role in secondary education, with students recognising both its benefits and limitations. The findings suggest that while ChatGPT is a valuable tool for supporting independent learning and supplementing language instruction, it is unlikely to replace human teachers due to its lack of emotional intelligence and contextual understanding. The broader cultural implications also suggest that integrating AI in education must be approached thoughtfully, with respect for students' diverse backgrounds and ethical considerations.

The study contributes to the ongoing discourse on AI in education by highlighting the specific ways in which secondary students engage with ChatGPT and providing insights into their perceptions. Future research could further explore how these perceptions vary across different cultural settings, as well as investigate strategies to enhance AI literacy among students to maximize the effective and ethical use of AI tools in the classroom.

11 IMPLICATIONS OF STUDY

The findings from this study suggest several important implications for English language education, teaching practices, policy development, and cultural considerations:

1. **Educational Practice:** The positive reception of ChatGPT among students indicates that it can serve as a valuable resource in the English language classroom, complementing traditional tools like dictionaries and providing swift, interactive support. However, to maximize its potential, educators should emphasize the importance of strategic use, teaching students how to evaluate responses and understand the tool's limitations to prevent over-reliance.
2. **Student Learning and Skill Development:** Although students appreciate ChatGPT's efficiency, there is a potential risk of stunting critical thinking if they rely on it too heavily. Teachers should guide students to view ChatGPT as a supplementary aid rather than a primary source for answers, promoting activities that encourage analysis and reflection to foster cognitive skills and ensure balanced learning.
3. **Addressing Cultural and Ethical Concerns:** An emerging challenge lies in the cultural and religious concerns surrounding AI, as it is perceived by some as not aligning with human values or religious beliefs. Addressing these concerns thoughtfully is crucial to fostering a more inclusive environment for AI adoption. This may involve open discussions within the educational context about the role of technology in human life, emphasizing AI as a tool created by humans to enhance, rather than replace, human skills. By integrating cultural and ethical considerations into AI

education, students can learn to use these tools responsibly and thoughtfully within their cultural and religious contexts.

4. **Need for Digital Literacy and Responsible AI Use:** Since no current guidelines exist in Brunei for AI use in education, developing policies that encourage informed and responsible AI usage is essential. A framework that includes guidelines on ethical considerations—such as data privacy, verification of AI responses, and balanced use—would empower students to use AI tools effectively while preserving critical thinking and awareness of AI's role.
5. **Policy Development for AI in Education:** The absence of existing guidelines provides an opportunity for policymakers to create standards for AI use, ensuring that tools like ChatGPT are used to complement educational objectives and align with cultural values. Establishing clear guidelines would support teachers in managing AI effectively and addressing any potential ethical or cultural concerns students or their families may have.
6. **Future Research and Broader Educational Implications:** As AI tools become increasingly integrated into educational settings, ongoing research is needed to assess their impact on learning outcomes and cognitive development. This study highlights the importance of a balanced approach to AI in education, respecting cultural sensitivities while promoting digital literacy. Further exploration of AI's role in education could contribute to a more nuanced understanding of its place within different cultural and religious contexts.

12 LIMITATIONS AND RECOMMENDATIONS

Limitations

This study encountered several limitations that may have affected the depth and generalizability of the findings. First, the use of tablets limited students' input speed and the volume of data they could provide. This constraint may have influenced their ability to fully engage with ChatGPT's capabilities and could impact the authenticity of their interaction with the tool. Finally, the reliability of ChatGPT itself posed a challenge, as occasional inaccuracies and biases in responses were identified. Without a structured protocol within the tool to handle user-identified errors, students faced difficulties in correcting or reporting these inaccuracies, which could have affected their learning experience.

Recommendations

To address these limitations and improve the integration of ChatGPT in educational settings, future research and practical interventions are recommended. First, expanding studies to include various devices and more flexible input methods could offer a more comprehensive understanding of how students interact with ChatGPT across different technological contexts. Further research should also explore cultural and religious perspectives on AI in education to develop more culturally responsive AI tools. This could involve engaging with stakeholders from diverse backgrounds to understand their unique concerns and expectations.

For practical implementation, it would be beneficial for ChatGPT developers to introduce a user feedback mechanism within the tool, allowing students to flag inaccuracies or biases easily. Such a protocol could improve the tool's reliability and adaptability for educational purposes. Additionally, educational institutions should consider developing guidelines for AI use in classrooms, which could include training sessions for students on how to use AI tools ethically and effectively. By addressing these areas, ChatGPT could become a more supportive, culturally sensitive, and reliable tool for student learning.

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Annex:

1. ChatGPT Data
2. Interview Data
3. Questionnaire Data



STEAM Education and Skills in Primary school of Brunei Darussalam: Integrating and Cultivating The 21st Century Skills Through Project – Based Learning Approach

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Purpose

One of Brunei Darussalam's Ministry of Education (MOE) strategic objectives are to cultivate an innovative ecosystem, nurture the people resources, and achieve excellence via future-ready learners. With the belief that one of the ways to support these strategic goals is to implement STEAM education within the curriculum. STEAM education is essential for developing versatile individuals with a comprehensive grasp of concepts and the acquisition of relevant skills needed to thrive in the modern workforce and make constructive contributions to society in the 21st century. However, providing opportunities for primary level students' application of STEAM skills in real- life context is still in an early phase. This paper aims at exploring students' level of "6Cs" under the New Pedagogies for Deep Learning (NPDL) framework led by Fullan (2014) or 21st century global competencies or skills which are creativity, communication, citizenship, critical thinking, character and collaboration in STEAM education and skills (SES) through project-based learning approach.

Methodology

A competency rubric was used to assess each skill through students' PBL activities. Therefore, the study employed project-based learning (PBL) as an instructional tool in implementing STEAM education and skills (SES). The research sample consists of 315 students ranging from Year 2 to Year 5 who are involved in the new MOE's integration system. This mixed-methods study evaluated student's level of competency skills using descriptive analysis data in one STEAM program at various stages of project-based learning approach at a government primary school high school in Belait District.

Findings

The findings of the study stated that students achieved collaboration skills with an overall mean score (M=3.53) at the highest level, followed by character (M=3.26), communication (m=3.20), citizenship (M=3.03), and critical thinking and creative thinking skills achieved the same overall mean score (M=2.60) according to a descriptive analysis finding data from the competency rubric. Through thematic analysis, to encourage a more successful PBL approach, emerged within the themes of students' learning experiences and self- efficacy.

Originality

The fundamental search for exploring students' level of the six competencies suggest that the use of two theoretical framework namely, the New Pedagogies for Deep Learning (NDPL) framework (2014) led by Michael Fullan, "6Cs" for deep learning or 21st century skills and the technological, pedagogical, and content knowledge (TPACK) framework is new in the context of Brunei primary schools.

Implications

The study findings have important implications that using Project-Based Learning approach by integrating STEAM Rubric Competency Skills based on the framework used in the study can further develop students' 21st century skills in STEAM education can foster readiness not only to face the 21st century but also to ss into the 22nd century. Furthermore, it can be inferred that the abilities and learning outcomes in primary education are instrumental in overcoming the challenges of the future.

Limitations

One key limitation is the relatively limited number of empirical studies directly evaluating the effectiveness of STEAM-PBL in primary school settings. Future research should also explore the specific strategies and best practices for effectively integrating STEAM and project-based learning in elementary classrooms, as well as the potential challenges and barriers to implementation.

Keywords: project- based learning, STEAM education, 21st century skills,

INTRODUCTION

Background of the study

Due to the implementation of the integration of religious subjects into general education system in 2023, various stakeholders of Brunei Darussalam's Ministry of Education have developed the Science, Technology, Engineering, Arts (innovation) and Mathematics (STEAM) education and skills in the curriculum. With the heavy emphasis on how STEAM approach has gained significant traction in recent years, as it provides a holistic and interdisciplinary framework for learning, recent researchers stated that incorporating the arts (A) into the traditional STEM disciplines, STEAM education aims to foster a more well-rounded and creative problem-solving mindset among students (Wahba et al., 2022). This is particularly important in the rapidly changing technological and social landscape of the 21st century, where the ability to think creatively, collaborate effectively, and adapt to new challenges is highly valued (Kim et al., 2019). As Awang Ali Hamdani (2024) stated that, *"It is the within the context that STEAM Education and Skills (SES) is initiated as an activity based programmed to strengthened 21st century skills and enhance the foundational competencies..."*

With the notion above, the Ministry urges educators to embrace the program and implement innovative teaching and learning strategies to prepare schools to fully realise the potential of STEAM education. This will enable students to recognise the significant influence that SES can have on their educational journey. Nonetheless, facilitating the application of STEAM skills for primary level students in real-life context is still in its early phase. Therefore, the current study will investigate the use Project- Based Learning (PBL) approach in integrating and cultivating the 21st century skill during SES program.

Purpose and Significance of Research

As mentioned earlier, with this investigation, the purpose of the study is to explore students' level of "6Cs" under the New Pedagogies for Deep Learning (NPDL) framework led by Fullan (2014) or 21st century skills which are creativity, communication, citizenship, critical thinking, character and collaboration in STEAM education and skills (SES) through project- based learning approach. This study focuses on student inquiry and student involvement in creating their own e-book project that creates a new learning experience for students by involving the need to acquire and learn the 21st century skills needed in the completion of their project. The PBL advocates consider that deeper learning, better retention of skills, greater motivation to learn, and long-term inclination are the results of involvement in projects.

In the light of implementing innovative teaching and learning strategies, in regard to STEAM education that utilises PBL approach continues to give great attention to fellow educators and researchers all around the world. Lantz (2009) defines STEAM education as an approach that eliminates the boundaries between disciplines by enabling students to understand the world rather than parts. There is research that examines the benefits of utilising the PBL approach for primary level students up to graduate school. However, almost all the studies have been carried out in the western countries. There is limited documentation about the implementation of PBL approach in integrating 21st century skills during SES program in non- western countries, such as Brunei. Due to the lack of research of the efficiency of PBL approach for SES program in integrating the 21st century skills when carried out with the students in primary school, this study aims to address the gap in literature. This research is significant because the findings contributed to the current pool of information related to students' level of six global competencies or 21st century skills and learning capacities. It is timely because this study also informs educators of ways to innovate their teaching and learning.

The findings of this study could also provide necessary insights for the community of Sekolah Rendah Paduka Seri Begawan Sultan Omar Ali Saifuddin

Literature Review

The literature review was limited to scholarly, peer-reviewed, empirical, and descriptive papers, along with articles outlining pedagogical frameworks for STEAM education, published in English. Empirical articles encompass qualitative, quantitative, and mixed methodological research; descriptive articles provide accounts of STEAM activities and programs in practice, while pedagogical framework articles present STEAM models and frameworks. STEAM (Science, Technology, Engineering, Arts, and Mathematics) education originated as a novel pedagogical approach during the Americans for the Arts-National Policy Roundtable discussion in 2007, addressing the necessity to enhance student engagement and proficiency in Science, Technology, Engineering, and Mathematics (STEM) disciplines (Allina, 2013; Daugherty, 2013; Quigley, Herro, & Jamil, 2017). STEAM education integrates the arts with STEM disciplines to enhance student engagement, creativity, innovation, problem-solving abilities, and other cognitive advantages (Hetland & Winner, 2004; Liao, 2016; National Art Education Association, 2016; Root-Bernstein, 2015), as well as to augment employability skills (e.g., teamwork, communication, adaptability) essential for career and economic progression (Colucci-Gray et al., 2017). As STEAM gains traction in American K-12 education, researchers have suggested numerous models and instructional strategies for incorporating the arts into STEM curricula.

Nonetheless, these novel models and pedagogies stem from numerous interpretations of the STEAM acronym and diverse notions of arts integration and arts education. This integrative literature analysis

examines the definitions and studies of STEAM education in 44 publications published from 2007, a pivotal year in STEAM development, to 2018.

Educational researchers are progressively associating specific instructional objectives and methods with deep learning, necessitating the active, intrinsic involvement and creativity of both students and teachers in authentic and frequently collaborative problem-solving endeavors.

Fullan and Langworthy (2014) delineate innovative pedagogies that promote profound learning, aligning closely with prevalent representations of 21st-century abilities and attitudes in practice. The authors assert that the purposeful application of digital tools and resources to facilitate deep learning can significantly augment and expedite the observed natural dissemination of innovative pedagogies among educators now occurring in K-12 schools.

“Deep learning,” in the way we will describe it, develops the learning, creating and ‘doing’ dispositions that young people need to thrive now and in their futures. Premised on the unique powers of human inquiry, creativity, and purpose, new pedagogies are unleashing students’ and teachers’ energy and excitement in new learning partnerships that find, activate and cultivate the deep learning potential in all of us.... In the best examples, teachers and students are teaming up to make learning irresistibly engaging and steeped in real-life problem-solving. (p. i)

The implementation of project-based learning in STEM activities, such as water filtration systems, has been shown to improve students' thinking skills and problem-solving abilities (Ridlo et al., 2020). Project-based learning is an instructional model that promotes the use of real-world problems as the basis for learning, allowing students to engage with the content in the context of solving a problem through collaborative work.

Additionally, research has highlighted the key characteristics of project-based learning, emphasizing its potential for promoting 21st-century learning and skills in K-12 science education. Furthermore, studies have demonstrated the effectiveness of STEAM-integrated project-based learning models in improving students' 21st-century skills. (Zayyinah et al., 2022) The integration of STEM subjects with the arts can foster a more holistic and interdisciplinary learning experience, while the project-based approach encourages active engagement, collaborative problem-solving, and the development of critical thinking abilities.

Theoretical Framework

The research study follows two theoretical frameworks in enhancing SES in primary level in integrating and cultivating the 21st century skills, which is firstly the New Pedagogies for Deep Learning (NPDL) framework led by Fullan (2014) where he defines the six global competencies for deep learning of the 21st century skills which are creativity, communication, citizenship, critical thinking, character and

collaboration. It allows for the identification of criteria or qualities in each competency that each student or child possesses when in the process of completing their project work. This approach is particularly helpful for educators and professionals in various settings.

Fullan (2014) stated that the Deep Learning Competencies, also referred to as the 6 C's, are essential skill sets that every student must master to thrive in today's intricate environment. These abilities constitute the basis for the New Measures, and NPDLE educators employ the Deep Learning Progressions to evaluate students' existing proficiency in each of the six Deep Learning abilities. They integrate this with data on student performance, interests, and learning abilities to obtain a comprehensive understanding of each student's educational requirements.

Comprehending the six deep learning competencies delineates the essence of becoming a deep learner. The learning progressions for each of the six competencies enhance precision by delineating the aspects of each competency. They are utilised to plan and evaluate learning and to quantify improvement in competency.



Image extracted from STEAM education & skills (SES): Guideline for year 2 - year 5. Bandar Seri Begawan: Curriculum Development Department, Ministry of Education, 2024.

Figure 1. Deep Learning Competencies Framework

Another theoretical framework that this research study follows is by adopting the technology integration framework that identifies three types of knowledge educators or instructors need to combine for successful edtech integration—technological, pedagogical, and content knowledge, the TPACK framework by Koehler et al. (2009). It is also imperative to educators to be aware how to integrate and

cultivate each the 21st century skills while incorporating technology at the same time. Through PBL approach, the researchers aim to adapt the use of TPACK framework as their guidance to fit the nature of the project to be implemented during SES program. By doing so, researchers will have a specific idea of what project to implement to the students by carefully considering different knowledge levels (declarative, procedural, schematic, strategic).

Knowledge Dimension	Content Knowledge [Objective]	Pedagogy Knowledge [Activity]	Technology Knowledge	Assessment	6Cs
Declarative	What is E-book?	• Pupils do discussion and internet search on E-books. • Research on how to create contents of an E-book. • Predict challenges in creating e-Book	Audio & Visual Online Reading Resources	Mind map / Discussion Board Monitoring Checklist for teachers	Character Collaboration Communication Critical Thinking
Procedural	Assess different types of application available to assist in the making of the e-book	• Choice of language • Apps available/ selection process • Lower – 10 e-pages • Upper – 15 to 20 e-pages	E-Book Samples Video simulation Apps Research	Task (To do) Checklist Portfolio Feedback Story board	Collaboration Communication Critical Thinking Citizenship
Schematic	To determine the quantity of SR PSB SOAS pupils exhibiting low-level reading proficiency attributed to vision/sight challenges or disinterest in reading.	• Lexile Scores/Renaissance • School's Vision • Brunei's LNNS (reference) • TfM English Clauses and Descriptors • Brunei Vision 2035 • Digital Vision MOE e-book - as resources for teachers	Online resources Renaissance Data	• Data Analysis • Descriptors • Checklist • Student Self-Assessment	All 6Cs

Strategic	Design and create interactive/innovative e-book for pupils with low-level reading skills or has disinterest in reading.	• Pupils do role playing of project designer, project creator, scriptwriters, editor, proofreaders • Applying problem solving skills • Present show their e-books. • Sharepoint/MIT app? to create E-book Platform/Library	Book Creator Video Apps Office Apps Laptop Smartphones Tablets Online resources	6Cs incorporated Rubric Portfolio Monitoring Checklist for teachers	All 6Cs
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Table 1: Technology, Pedagogy, Assessment, Content Knowledge (TPACK) Framework of Sekolah Rendah Paduka Seri Begawan Sultan Omar Ali Saifuddin – E-Book Project

Research Question

The primary goal of this study is to explore students' level of "6Cs" under the New Pedagogies for Deep Learning (NPDL) framework led by Fullan (2014) or 21st century global competencies or skills which are creativity, communication, citizenship, critical thinking, character and collaboration in STEAM education and skills (SES) through project-based learning approach. The researchers are also interested in students' learning capacities that emerge to encourage a more successful PBL approach.

For these reasons, the research seeks to address the following questions.

1. What are the students' level of STEAM competencies when engaging in STEAM project activities?
2. What are the students' learning capacities that emerge to encourage a more successful PBL approach?

Scope and Limitations of the Research

Specific constraints must be considered when analyzing the results. This investigation is conducted in a single primary school within the country. The limited sample has been recognised. Consequently, the results of this study may not be applicable to all students in other primary schools nationwide.

Nonetheless, it may offer a broad assessment of the 6Cs worldwide competences of primary pupils when incorporating and fostering 21st-century learning skills through Project-Based Learning within the SES

program. The objective of this research study is not to generalise data to other primary schools in Brunei Darussalam, but to engage in reflective practice that may improve students' competency and learning capacities during their e-book project. The temporal limitation also restricts the breadth of the investigation.

METHODOLOGY

This study outlines the description of the samples, research instruments, and research methodology pertaining to the study of integrating and fostering 21st-century abilities through the Project-Based Learning (PBL) approach during the SES program. A mixed-method approach incorporating both quantitative and qualitative data was employed to investigate students' levels of global competencies and the learning capacities that arise throughout PBL activities. The research particularly develops a STEAM competency assessment and conducts interviews to validate the outcomes following a scanning interview and a review of scholarly literature.

Research instruments

The instruments used for data collection comprise STEAM Competency Rubric and structured interviews. Table 2 delineates the research questions, and the instruments employed in the study.

Research questions	Research Instrument
What are the students' level of STEAM competency when engaging in STEAM project activities?	STEAM Competency Rubric
What are the students' learning capacities that emerge to encourage a more successful PBL approach?	Interview

Table 2: Summary of research questions and its research instruments

STEAM Competency Rubric

STEAM competency rubric was developed and utilised by researchers and the students were assessed whole throughout the duration of 4- weeks project of creating E-books. The rubric is composed of six competencies, that recognised in the literature that supports the acquisition of the New Pedagogies for Deep Learning (NPDL) framework, as was articulated by Fullan (214), encompassing 21st century global competencies: creativity, communication, citizenship, critical thinking, character and collaboration. Each of the competency has three descriptors. Students are being identified which descriptors they exhibited while creating their e-books project. Each descriptor from every competency comprised of list of related practices or skills (e.g., generate unique and innovative ideas to support creative skill) needed to be acquired by the students. Responses choices were 1-point (Beginning) 'Minimal demonstrate skill'; 2-point (Approaching expectations) 'Seldom demonstrate skill', 3-point (Meeting expectations) 'Always demonstrate skill' and 4-point (Exceeding expectations) 'Consistently demonstrate skill'. (refer to Appendix A).

The rubric was analysed for reliability with the Cronbach's alpha reliability index. Cronbach's alpha reliability was calculated to be 0.757 indicating all constructs have good and acceptable internal consistency in reliability.

Interview

Fifty student participants randomly selected to explore in more in-depth convergent and divergent messages captured during the interview. Interview questions were formulated through a series of discussions with the other researchers by considering usage of simple words and sentences to cater the ability of Year 2 to Year 5 students.

Qualitative data collection and analysis are synchronised through an iterative process (Hartley, 2004; Lester et al., 2020). Data for this study were thematically analysed. Thematic analysis is an approach for detecting, analysing, and reporting patterns (themes) within data (Braun & Clarke, 2006). Thematic analyses employ analytic practices, such as sorting and sifting through the data set to find comparable words and/or links, which has been described as a practice shared by other qualitative research approaches (Miles & Huberman, 1994). Researchers did it manually through the hard copies of transcripts using highlighters. The analysing of interview data went through two cycles. The first cycle of the participants responses was being highlighted and sub- themes subsequently emerged. In the second cycle, researchers organised the sub- themes that have been coded in the initial coding into appropriate final themes in accordance with the research question (RQ). Researchers worked through each transcript coding every segment of text that seemed relevant to address the second RQ. The researchers validated the interview data by adopting the members checking method. Interview transcript data was given back to the student participants and the researchers asked them slowly verify facts and confirm their original

words. These were done within a span of three as the participants are still in primary school level. As Lincoln and Guba (1985) recommend member checking as a way to minimize this bias. They suggest that giving data back to participants helps check for accuracy and completeness. The interviews were conducted around the following questions:

1. What do you enjoy most or your favourite part about working on projects in class?
2. Do you find it easy or challenging to create stories for your friends? Why?
3. Do you understand what 'collaboration' means? Do you enjoy working in groups with your classmates? What do you like about it?
4. Have you ever given a presentation to your class about a project? How did it make you feel?
5. What's the most interesting thing you've learned while working on a project?
6. Do you think working on projects helps you learn better than just reading from books? How do you feel when you finish a big project?

Participants

Participants were chosen and recruited using a convenience sampling procedure. The rubric was administered to 315 students from Year 2 to 5 between the age of 7 and 11. The study was carried out at Sekolah Rendah Paduka Seri Begawan Sultan Omar Ali Saifuddien, a coeducational elementary school in Belait. Since the researchers are connected to the school, it was convenient for them to carry out the study there. Fifty participants were also interviewed, which made up of about 15.87% of them responded to the one-to-one interview questions. One of the drawbacks of convenience sampling is that the researchers have no control over how the sample is represented as those were the levels of students who are involved in the integration system. The study's data collecting took place from the middle of April to the beginning of July.

Data Collection

A mixed method approach including both quantitative and qualitative data was utilised to better determined and fully understand at which level of competencies the participants are during their PBL activities by using the STEAM Competency Rubric developed by the researchers. Mean scores were calculated per each item of the competency rubric instrument. Interviews were also conducted whereby the interview responses data were being transcribed and analysed through thematic analysis to help validate the possible themes that emerged throughout the whole project.

FINDINGS AND ANALYSIS

Data Analysis

Descriptive statistics were produced utilizing the Statistical Package for the Social Sciences (SPSS) software to analyse the data. The pupils' level of competencies was determined using a maximum mean score of (M=4.00). Students were assessed using the STEAM Competency Rubric, which consists of a 4-point scale. A score of 1 point (Beginning) indicates that student participants exhibit "Minimal Demonstrate Skill" for each descriptor within the competency. A score of 2 points (Approaching Expectations) signifies "Seldom Demonstrate Skill" for each descriptor. A score of 3 points (Meeting Expectations) reflects "Always Demonstrate Skill," while a score of 4 points (Exceeding Expectations) denotes "Consistently Demonstrate Skill" for each descriptor in the competency rubric.

From the competency rubric data researchers match the data using the descriptive frequency analysis using SPSS.

The responses from interviews were recorded and transcribed under headings and then were organized in themes and categories that emerged. A thematic analytical approach was employed to identify emergent patterns and themes in the survey data. Themes were derived from the teachers' responses when the surveys were analysed. Each student's responses were carefully checked and coded against the theme to which it belonged. Responses from interviews will be transcribed verbatim before being analysed by researchers to form categories of description depicting the qualitative data of students' learning capacities that emerge to encourage a more successful PBL approach.

RESULTS AND DISCUSSION

This section delineates the data, analytical results, and discourse regarding students' performance levels in the "6Cs" within the New Pedagogies for Deep Learning (NPDL) framework, as articulated by Fullan (2014), encompassing 21st-century global competencies: creativity, communication, citizenship, critical thinking, character, and collaboration in STEAM education and skills (SES) via a project-based learning methodology. The quantitative data from the STEAM Competency criteria was corroborated by qualitative data gathered from interviews with randomly selected pupils. The results obtained are organised in accordance with the chronology of the research questions to effectively facilitate the debate pertaining to the two research questions.

Research Question 1: What are the students' level of STEAM competency when engaging in STEAM project activities?

6 Competencies	Descriptors	Mean	Overall Mean
Creative	Generates unique and innovative ideas	2.55	2.60
	Easily adapts and refines ideas, flexible thinking	2.65	
	Consistently uses creative thinking to solve problems.	2.60	
Communication	Regularly expresses thoughts well through speaking, writing and enhance communication	3.32	3.20
	Listens attentively during class discussions and contributes relevant ideas.	3.26	
	Use basic vocab and sentences to share information and interact well.	3.02	
Citizenship	Shows respect for other ideas.	3.31	3.03
	Works cooperatively with others, takes turn	2.97	
	Take responsibility, follow rules independently	2.83	
Critical- Thinking	Use basic vocab and sentences to share information and interact well.	3.06	2.60
	Shows an emerging ability to identify problems and derives effective, creative solutions	2.46	
	Evaluates information critically, uses strong reasoning	2.29	
Character	Self-Control, manage emotions, Helps others	3.25	3.26

Collaboration	Shows strong determination	3.30	3.53
	Shows Empathy	3.22	
	Use basic vocab and sentences to share information and interact well.	3.65	
	Shows an emerging ability to identify problems and derives effective, creative solutions	3.50	
	Evaluates information critically, uses strong reasoning	3.43	

Table 3: Students' level of STEAM competency and descriptors (6Cs ,21st Century Learning Skills)

As shown in Table 3, using a 4-point Likert Scale, using descriptive statistics showed that the overall mean value of each 6Cs, 21st century learning and the mean value of 18 descriptors or list of skills acquired of each competency.

The results show overall mean value where students achieved collaboration skills with an overall mean score (M=3.53) at the highest-level achievement indicating that almost all the participants demonstrate their ability to collaborate with each other. Three descriptors of collaboration skills, namely, "use basic vocab and sentences to share information and interact well" has a very high mean value (M=3.65). Results also revealed that the descriptor; "shows an emerging ability to identify problems and derives effective, creative solutions" has a mean value (M=3.50) whereas, "evaluates information critically, uses strong reasoning" are at least value from the first two still showed a reasonably high mean value (M=3.43). This suggests that students excel in collaborative skills while working on an e-book project. The above findings of the study are consistent with the study conducted by Kurniawati, Susanto, & Munir, 2019; Andriyani & Anam, 2022 which reported project-based learning positively impact their collaborative skills. In short, it can be concluded that Project Based Learning can promote students' collaboration.

The second highest is character skill, with an overall mean (M=3.26). One descriptor of character skills, "Demonstrates strong determination," possesses a significantly high mean value (M=3.30). Self-control, emotional management, and assistance to others ranked second with a mean value of (M=3.25), while the third highest descriptor for empathy as a character skill had a mean value of (M=3.22). Based on the findings of the study, students exhibited their perseverance and their ability to show empathy towards their peers in creating e-books. It was observed that students did find creating e-books a challenge all the

way from planning up till concluding their story. However, due to the very nature of being guided by general principles of PBL that acknowledge students learn best when they actively acquire knowledge, work cooperatively, and engage in activities that relate to each student's personal life. As stated by Sutiadiningsih et al, 2017, learning while solving problems in the task/projects the students were assigned and one when character-building was incorporated into learning process enables students to process information and make decision concerning their following actions in order to achieve their goals or outcome/achievement.

The third highest achievement of STEAM competency among student participants is communication skills, with an overall mean value of ($M=3.20$). The three descriptors of communication skills with the greatest mean value of ($M=3.32$) regularly expresses thoughts well through speaking, writing and enhance communication. This is followed by listens attentively during class discussions and contributes relevant ideas, which has a mean value of ($M=3.26$). Use basic vocab and sentences to share information and interact well, ranked at the third place with a mean value ($M=3.02$). These findings indicate that student communication skills are enhanced by Project-Based Learning (PBL), which offers opportunity for students to efficiently organise their thoughts and utilise shared data across various digital technologies throughout STEAM activities. Project-Based Learning inherently employs communication skills, as students must proficiently exchange ideas and information among group members to achieve success. As Capraro and Slough, 2013 stated PBL naturally utilises communication skills because students must be able to effectively share ideas and information amongst group members to be successful. Furthermore, another study supported the study findings where they stated that PBL has evidenced success in enhancing students' communication skills for which it provides more opportunities for children to express ideas verbally (Owens & Hite, 2020; AlAli 2024).

The fourth highest competency skill among students is citizenship, which had an overall mean score of ($M=3.03$). The descriptors of "shows respect for other ideas" achieved a mean value of ($M= 3.31$), followed by works cooperatively with others and takes turns at ($M= 2.97$), and finally, takes responsibility and follows rules independently at ($M= 2.83$). In view of the using project-based learning (PBL) during STEAM activities with regard to creating e-books as their activities have indeed created opportunities for students to cultivate citizenship. Several studies, ranging from second-grade classrooms (Duke et al., 2020; Halvorsen et al., 2012) to middle school history classes (Hernández- Ramos & De La Paz, 2009) and secondary Advanced Placement (AP) U.S. Government and Politics courses (Parker et al., 2013), have found that students engaged in project- based approaches performed better on assessments than students experiencing more traditional instruction.

Critical thinking and creative thinking skills achieved the equal overall mean score ($M=2.60$). For critical thinking skills, the descriptor of, "use basic vocab and sentences to share information and interact well has a mean value of ($M=3.06$), shows an emerging ability to identify problems and derives effective and creative solutions come second with a mean value ($M=2.46$) and evaluates information critically and uses

strong reasoning with ($M=2.30$). Through the application of a STEAM-based learning approach, this shows that students' critical thinking is evidently acquired. The ability to think critically is basically the ability to consider relevant or irrelevant information with the aim of being able to make decisions about what it will do (Diana & Saputri, 2021). Therefore, the ability to think critically is an important aspect that students need to have because it is very useful in solving the problems faced and as a provision in facing the present and future life.

As for creative thinking skills, the highest descriptor is easily adapting and refines ideas and have flexible thinking has a mean value ($M=2.65$), followed by consistently uses creative thinking to solve problems with a mean value ($M=2.60$) and the third, generates unique and innovative ideas has a mean value ($M=2.60$). This study successfully showed that the STEAM-based Project Based Learning significantly has impacted students' creativity skill in creating e-books. Teachers can use this technique to encourage more active student participation in the learning process, better preparing them to confront the challenges of the twenty-first century, which require creative and innovative talents. In this modern era, creativity and innovation are very important for the development of students. Practicing creativity can develop critical and analytical thinking skills that are very useful in facing the challenges of everyday life (Atiaturrahmaniah et al., 2022).

The above findings indicated by engaging themselves with STEAM project activities, students were able to demonstrate quite high achievement of competency level needed to complete their project in creating e-books, namely; students achieved collaboration skills with an overall mean score ($M=3.53$) at the highest level, followed by character ($M=3.26$), communication ($M=3.20$), citizenship ($M=3.03$), critical thinking and creative thinking skills achieved the same mean score ($M=2.60$). The outcomes of the study contribute to an understanding of the exploring the different achievements level in acquiring the 6C level of competencies. On this ground, students need adequate knowledge and ability learn new skills and explore the skills they have within themselves.

Research Question 2: What are the students' learning capacities that emerge to encourage a more successful PBL approach?

The researchers conducted the project for research question two as a qualitative case study to answer

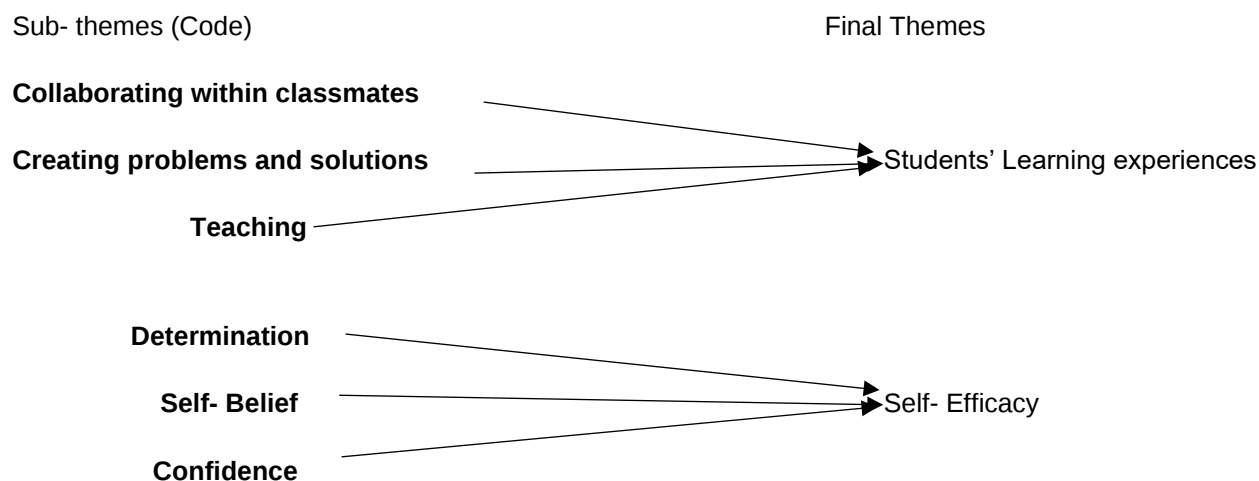


Figure 2 Themes emerged from interviews

Figure 2 illustrates the themes that have arisen from the conducted interviews. The participants' responses to this research topic are presented narratively as follows.

Students' Learning Experiences

This research question seeks to identify students' capacities that can encourage a more successful PBL approach. The study found three common sub- themes that depicts from the interview transcriptions, related to students learning experiences, namely collaborating within classmates, creating problems and solutions and teaching. Starting with collaborating within classmates; Collaboration emerged as a significant sub-theme in the study. 88% (44 out of 50) participants indicated that collaboration could lead to a successful project. A collaboration in which students demonstrated effective teamwork, contributing to collective efforts and developing ideas collaboratively. The cooperative setting in project-based learning enabled students to combine their skills and assist one another in problem-solving. This skill is essential for 21st-century education, as it instructs students on how to operate efficiently in collaborative environments, exchange ideas, and pursue shared objectives.

One of the students responded saying:

".... the most interesting thing I've learned while working on a project are the collaboration and sharing.."

Another student quoted saying:

"...if I'm doing a good project, I need to cooperate with the work and give lots of ideas.."

The second theme that can encourage a more successful PBL approach is creating, for which it emerged strongly at 78. 8% (89) of the participants stated that they need to create their own solution to make a successful project. It reflects the students' ability to generate ideas and bring those ideas to life.

One student who was responding to the researcher about what is the most interesting thing that they have learned while working on a project, quoted saying:

"..I can learn creativity about doing things...of editing.. Editing is difficult. It's a problem that needs solution...But.. I think.. even if I have problem in editing, we can solve it together with my group by editing our E-book style"

Another students responded saying:

"...mmm..I learned that we can put in audio in our e-book project. I want to help my sister who cannot really read. If we put audio, many problems can be solved. I know it's an option to put in audio but a challenge my group is willing to take.."

The third theme that arise is teaching. 68% (34 out of 50) participants indicated that teaching enhances students' learning, demonstrating that pupils learn most effectively when they can instruct others. Students assume positions as peer educators, which allows them to reinforce their understanding by elucidating concepts and ideas to their peers. When students instruct, they contemplate their own understanding, recognize deficiencies, and consolidate their learning. Teaching serves as an effective learning instrument for the pupils themselves.

One student quoted saying:

"..Connect new ideas and explain to my friends. Sometimes I feel I need to explain to my friends who are have little ideas in creating stories.. I can some sort of teach my group.."

Another one said:

"...My friend always ask help from me. I learned that whenever I help her, I am like a teacher, teaching her how create interesting storyline.."

One can infer that when students participate in collaboration, instruction, and creation, their learning potential increases as they cultivate and enhanced social and emotional intelligence (collaboration), enhance their subject proficiency via peer teaching and develop critical thinking and innovative skills (creation).

Students' Self- Efficacy

This study found three sub- themes, related to student's self- efficacy, namely confidence, self- belief and determination were crucial students' learning capacities that can encourage a more successful PBL approach. Starting with determination; 92.1% (46 out of 50) participants demonstrated determination, indicating students' perseverance in task completion and problem surmounting. Students frequently face challenges, whether related to intricate problems or technical difficulties with instruments. Determination is the impetus that enables people to overcome these challenges.

One student said that:

"..It's kinda hard to find the pictures and spelling..But I try and try, Then I got it.. My friend said.. Cannot give up..."

One female student quoted saying:

“...I find it hard to create e-book. Extracting, copy paste pictures from AI image generator is easy but to choose the most appropriate image is tough..Some images are not related to what how we want it in the e-book. So I went home and practice, practice prompting till I get it.”.

For the second sub- theme, 88.4% (99) of the individuals demonstrated self-efficacy, indicating their confidence in their own capabilities to achieve success. Self-confidence enables students to embrace chances and venture beyond their comfort zones.

One male student said:

“..Difficult to create ebook. It something new for me. But I practice.. Like trial-and -error kinda thing..I make mistakes along the way. But its ok. But I did it right in the end..”

Another student commented:

“...Challenging..but.. because we work with my classmates in groups. We know we can do it...”

For the final sub- theme that is related to students' self- efficacy is confidence. 87.8% (99) of the participants indicated that confidence fosters ownership in the E-book creation process, enabling students to exert complete control over the content, design, and structure of their projects. Collaborating with classmates and showcasing their work instills a sense of validation and pleasure in students' achievements.

One student said:

“..My group is creative in e-book story. Every week we have new ideas how to make our e-book interesting to read.. We know friends will enjoy reading our e-book..”

Another student quoted saying:

“...I like to make sentence for making e-book. I can do it...Ilearn and then organise our notes..”

In light with the above findings, as students experience success and surmount challenges, their self-efficacy is reinforced, equipping them for more intricate tasks in both academic and personal domains. Fostering self-efficacy in students boosts their learning outcomes and equips them with the mentality necessary for future success.

IMPLICATION OF THE FINDINGS

The results findings of the study have lay out several implications. It implies that the 6Cs under the new pedagogies for Deep Learning (NPDL) framework led by Fullan (2014), which are part of 21st-century skills and the characteristics of STEAM, can foster readiness not only to face the 21st century but also to ss into the 22nd century. Furthermore, it can be inferred that the abilities and learning outcomes in primary education are instrumental in overcoming the challenges of the future. Another implication is that, using PBL approach by integrating STEAM Rubric Competency Skills can further develop pupils' 21st century skills in STEAM education. This is because This study has implications for designing and teaching learning tasks in STEAM programs. Moreover, with the requirement of STEAM education, it allowed teachers to integrate, cultivate, and strengthen their teaching skills professionally according to current educational trends.

CONCLUSION AND RECOMMENDATIONS

With regard to integrating and cultivating the 21st century skills through project- based learning approach, the study employs mixed method research that utilised data from competency rubric and thematic-analysis interview. Results from the study confirms that providing all students the necessary interdisciplinary STEAM activities are imperative as meaningful access to STEAM education is primarily about effective curriculum design that fit the 21st century learning skills. The integration of STEAM education and project-based learning holds significant promise for cultivating the 21st-century skills necessary for student success. Through engaging, interdisciplinary projects that address real-world problems, STEAM-PBL can foster the development of critical thinking, collaboration, creativity, and communication skills.

As evidenced by the literature review, this pedagogical approach has the potential to transform elementary school classrooms, empowering students to become innovative problem-solvers, effective communicators, and collaborative team members. By prioritizing the implementation of STEAM-PBL in elementary schools, educators can lay a strong foundation for the development of the essential competencies required for success in the 21st century.

Following from the discovery, the researchers concluded that there three recommendations for the STEAM program to be a success one, with the effort of integrating and cultivating the 21st century learning skills.

Professional Development & Growth: Ongoing and support the effective implementation of learning experiences and assessments that integrate 21st century skills. Continuous professional development is important to ensure teachers are well prepared and are providing students with learning experiences that are aligned to best practices, designing engaging, differentiated curriculum and effective learning for all students. Owens and Hite 2022 stated that this includes training teachers in and researching project-based learning, participating in project-based learning themselves, and convening groups to advise and mentor schools and school leaders through the process. Linking competencies to project-based learning, especially in subjects such as learning studies or outdoor education, which can be fully developed through these projects, can have benefits for the students' educational experience, educators, and assessors.

Curriculum developers: Curriculum resources and policies should support the development of a rich and interactive life skills curriculum. As for curriculum developers, we are all aware that the Curriculum Development Department (CDD) has already drafted out the guidelines for STEAM Education and Skills (SES) for Year 2-5. It has already been socialised to all school leaders (SLs) during the School Leaders Convention (SLC) somewhere in May 2024. Other stakeholders, namely the Brunei Darussalam Leadership Training Academy is giving facilitating to all Steam focal person and school leader, namely the Leading Deep Learning.

Schools and Teachers: Use a blend of embedded technology and print materials to create student assessments and learning experiences. Loyens et al.2023, stated that in project-based learning environments, students will utilise small tools and software in their group projects, which most often include word processing and editing software, spreadsheet software, and presentation software. Digital literacies in a project-based learning environment include word processing, layout, editing, writing for the web, and multimedia storytelling.

To conclude, in integrating and cultivating the 21st century skills through project- based learning approach, with regards to planning and creation of PBL projects, it is beneficial to engage students and inquire about their learning interests and project preferences. Students will exert greater effort if the project's objectives correspond with their existing requirements and competencies. Data that facilitates the formulation of a clear and effective project objective offers insight into any session's outcomes. Therefore, with the study that focuses on student involvement in creating their own e-book project provides new learning experience for students by involving the need to acquire and learn the 21st century skills.

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APPENDIX A

Steam Competency Rubric

6 Competencies	Descriptors	4	3	2	1
		Point (Exceeding Expectations)	Point (Meeting Expectations)	Point (Approaching Expectations)	Point (Beginning)
Creative	Generates unique and innovative ideas	Consistently Demonstrate Skill	Always Demonstrate skill	Seldom Demonstrate Skill	Minimal Demonstrate Skill
	Easily adapts and refines ideas, flexible thinking	Consistently Demonstrate Skill	Always Demonstrate skill	Seldom Demonstrate Skill	Minimal Demonstrate Skill
	Consistently uses creative thinking to solve problems.	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
Communication	Regularly expresses thoughts well through speaking, writing and enhance communication	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Listens attentively during class discussions and contributes relevant ideas.	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Use basic vocab and sentences to share information and interact well.	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill

Citizenship	Shows respect for other ideas.	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Works cooperatively with others, takes turn	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Take responsibility, follow rules independently	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
Critical- Thinking	Use basic vocab and sentences to share information and interact well.	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Shows an emerging ability to identify problems and derives effective, creative solutions	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Evaluates information critically, uses strong reasoning	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
Character	Self-Control, manage emotions, Helps others	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Shows strong determination	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill

	Shows Empathy	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Use basic vocab and sentences to share information and interact well.	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
Collaboration	Shows an emerging ability to identify problems and derives effective, creative solutions	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill
	Evaluates information critically, uses strong reasoning	Consistently demonstrate skill	Always demonstrate skill	Seldom demonstrate skill	Minimal demonstrate skill

APPENDIX B



SAMPLE OF STUDENTS' E-BOOK PROJECT

Changes In Students' Perspective of Wildlife Conservation - A Case Study of Brunei Secondary State School Students

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ABSTRACT

This paper investigates the impact of the Borneo Wildlife Ambassador Programme (BWAP) on students' perspectives towards wildlife conservation. BWAP is a six-month project-based inquiry learning initiative aimed to educate students about local wildlife and biodiversity, cultivating wildlife ambassadors and local experts within the community, the first of its kind introduced in Brunei secondary state school. Students were engaged in various activities over 6 months, including talks and outings led by local Borneo based biodiversity professional, collaboration with local cafes for art activism and public library. Despite living in Brunei Darussalam, a country rich in biodiversity, students in schools in Brunei report a lack of knowledge about local biodiversity and the issues related to its loss. The paper explores current curriculum provision in relation to project learning and also to biodiversity. Following this, the paper reports on a case-study involving student participation in the BWAP and reviews survey data of participants. The paper finds that all participating students reported an increased awareness of the local wildlife, interest in conservation and expressed a heightened sense of responsibility towards protecting it. Furthermore, the paper highlights how students developed the skills and experiences to become effective leaders in their communities. The findings make clear that adapting similar project learning programs into the school curriculum in Brunei Darussalam could be an effective approach to broadening understanding of conservation and Sustainable Development Goals (SDG) of Life Below Water and Life on Land in support of Brunei Vision 2035's goal of achieving a sustainable environment. Additionally, the findings indicate how project learning can provide a method to adapt curricula to develop leadership skills in students.

Keywords : Project based Inquiry Learning, Wildlife Conservation, Students Perspective, Borneo Wildlife Ambassador Programme, Student Leadership

Introduction

The National Education System for 21st Century in Brunei Darussalam aims to improve the quality of education in line with current needs and the anticipated needs of the future years. It also aims to develop 21st Century Skills amongst students to raise the quality of the future workforce. According to the policy direction in the Education Strategy of *Wawasan Brunei 2035*, the education mission is to provide holistic education to achieve fullest potential for all and indicate that there's a need to emulate international best practice in the local education system and curricula.

In 2024, one of the government state schools in Brunei Darussalam took part in the Borneo Wildlife Ambassador Programme (BWAP) to address a critical gap in students' understanding of local biodiversity. Despite Brunei's rich natural heritage, students showed greater familiarity with foreign wildlife than local fauna. This case study examines BWAP's impact on secondary school students' conservation awareness and engagement.

Background

Brunei, situated on Borneo Island, boasts 59% primary rainforest coverage, with some areas dating back 150 million years. Additionally, it has both unique and diverse wildlife, including 121 mammal species, 474 bird species, and 15,000 vascular plant species. Yet a review, by this author, of the national curriculum as delivered in science lessons, showed that the curriculum lacked substantial local biodiversity content. BWAP, designed by 1StopBorneo Wildlife NGO, aimed to cultivate young local wildlife ambassadors through a six-month experiential learning program and it was hoped this would increase students' awareness of biodiversity in Brunei and demonstrate an alternative method to delivery this aspect of the curriculum.

Objectives of the Study

This case study focuses on:

1. Assessing changes in students' awareness and interest in conservation.
2. Evaluating the impact of BWAP on student leadership development.
3. Investigating the role of project-based learning in building community engagement.
4. Understanding non-participants' attitudes towards conservation and exploring how to address the gap.

Literature review

Importance of Conservation Education

Conservation education aims to cultivate a sense of responsibility toward the environment among young people. Studies suggest that inquiry-based learning models—those that involve hands-on activities and real-world problem solving—are effective in building lasting environmental awareness (Sobel, 2004).

Biodiversity Education In School

Student leadership and conservation programs are not new to the education world. The *Youth Biodiversity Conservation Leadership Project* in Hong Kong provides an excellent parallel to Brunei's BWAP initiative. Students participated in a five-month program involving both classroom and field training, culminating in student-led biodiversity conservation plans. This program demonstrated how engaging students with hands-on projects empowers them to become local environmental leaders and encourages peer-to-peer learning, amplifying the program's impact on the broader school community (Cheang et al., 2021). Similarly, Singapore's *Community in Nature Initiative* demonstrates how student involvement in citizen science initiatives fosters ecological awareness while contributing to local conservation efforts (NParks, 2023).

Research shows that hands-on biodiversity education increases students' environmental engagement and fosters leadership. For instance, Australia's *Backyard Biodiversity* program found that students who participated in experiential biodiversity management projects reported improvements in environmental attitudes and behaviours (Babou et al., 2023). These programs emphasise the significance of student-led initiatives to inspire long-term environmental responsibility.

Experiential Learning

Experiential learning, which aligns with Kolb's learning theory, emphasises learning through experience by involving students in practical activities that reflect real-world scenarios. This approach shifts the focus from passive knowledge acquisition to active learning, helping students connect new concepts with prior knowledge and develop critical problem-solving skills (Kolb, 2014).

Field-Based Learning

Field trips offer powerful experiential opportunities, they present logistical challenges, including transportation and curriculum inflexibility (Behrendt & Franklin, 2016). Proper planning and reflection are essential to maximise learning outcomes, ensuring students integrate field experiences into their broader understanding.

STEAM education

The transdisciplinary nature of STEAM education provides a strong framework for teaching biodiversity through experiential learning. Incorporating the arts into traditional STEM subjects can make biodiversity education more accessible and engaging. STEAM education fosters greater student engagement by integrating real-world applications and collaborative learning strategies. Incorporating arts into traditional STEM disciplines allows students to connect emotionally with their learning experiences, encouraging deeper involvement and personal interest (Spyropoulou & Kameas, 2024). Such interdisciplinary approaches, particularly through project-based learning, motivate students to participate actively and remain engaged throughout the learning process (Ngo & Phan, 2019).

BWAP Implementation

The main goal of BWAP is to produce young local citizen scientists all over Borneo who are passionate about wildlife. The focal teacher from this program selected four students from the participating secondary state school: two mainstream Year 9 students and two special-needs Year 8 students from a pre-vocational program.

Throughout the 6 months of programme, the students attended multiple activities. Students participated in excursions to mangroves and tropical biodiversity centres, learning about ecosystem dynamics from local conservationists. They attended talks with topics ranging from the importance of fig to the problems faced by wildlife and to different wildlife in our country. With the field trips and talks by experts, the students' perspective of wildlife learning and conservation was changed as abstract concepts were converted into tangible learning.

To make the programme more creative, the Art Department in the school planned a lesson on making a balancing hornbill as part of STEAM projects. Students used the generic balancing bird template and redesign it to make it relatable to their cause. They studied the physical characteristics of Oriental Pied Hornbill, which is commonly found in their backyard. They made the Balancing Hornbill accordingly. After several trials and errors, the final product became a public art installation aimed at raising awareness about the ecological role of hornbills.

One of the most interesting parts of the programme was learning that the hornbill is facing decreasing in number due to the loss of habitat and poaching, from the ex-poacher who turned conservationist. They learnt to make a hornbill nesting box, from scratch. This nesting box will provide a safe place for the hornbill and support local wildlife as shown in Thailand and Malaysia (Esterman, 2024).

Refer to Appendix 1 for timeline and activities throughout BWAP.

Finding

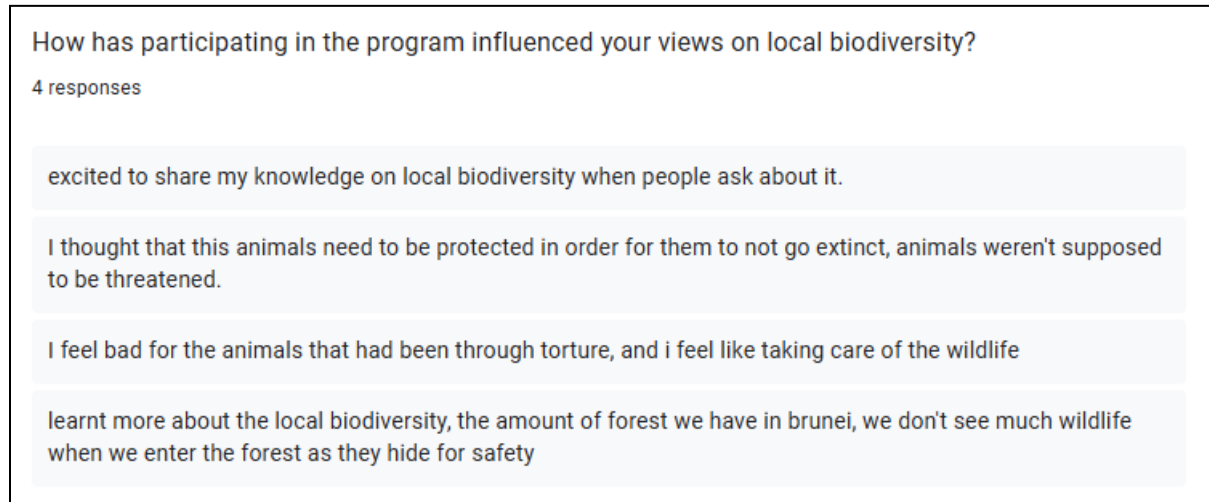
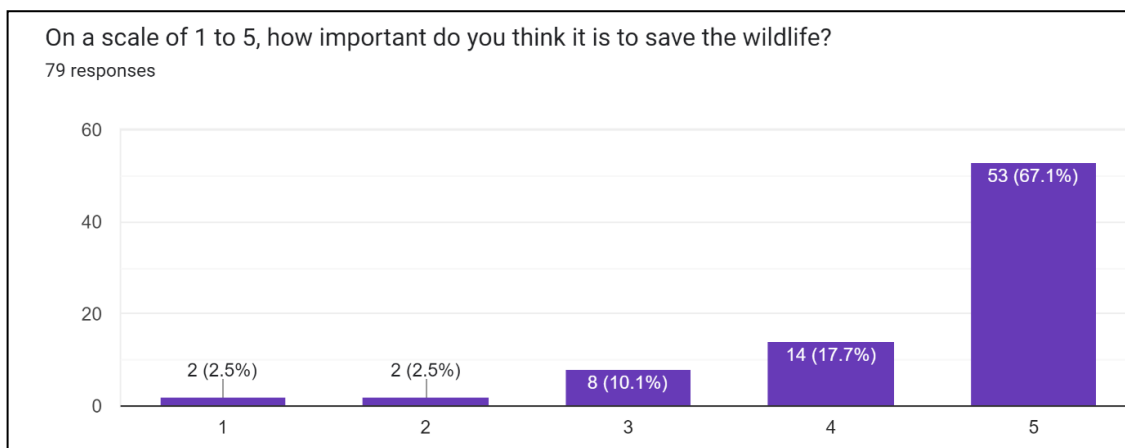


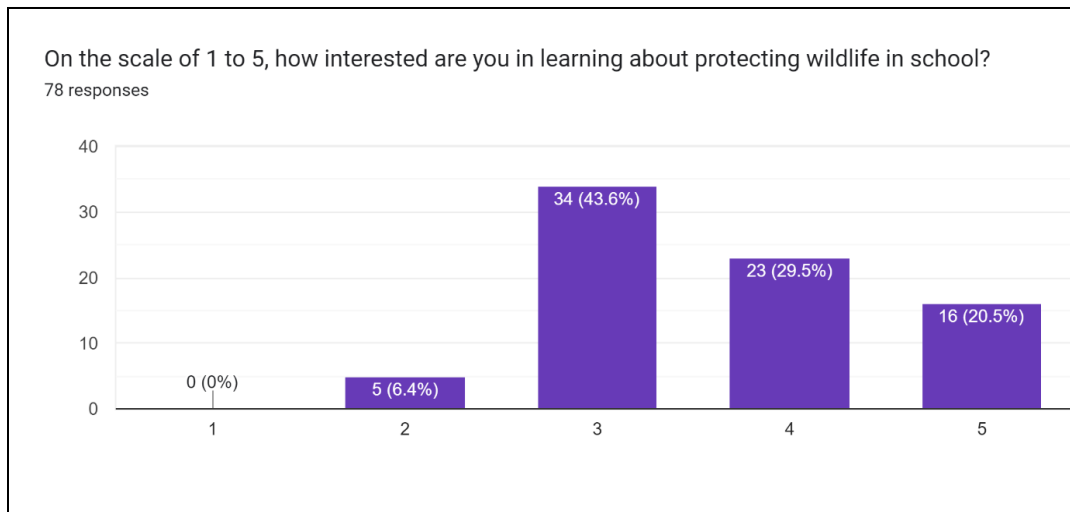
Image 1 Result from questionnaire for BWAP participant.

The study found that BWAP participants reported an increased understanding of wildlife conservation, developed leadership skills, and became proactive advocates. This was shown through their commitment for the various activities throughout the programme. They took the initiative to contact and collaborate with local businesses to raise awareness through a diverse community channel. Their ability to speak confidently about conservation to the Sultan and the royal family during His Majesty's birthday celebration is the evidence of how much they have grown as a young conservation advocates throughout the programme. The participants reported that they excited to share what they have learnt with their families and peers and are more confident in talking about wildlife conservation as they have content to share.



Graph

1.a Result from questionnaire from BWAP non-participating student survey.



Graph 1.b Result from questionnaire from BWAP non-participating student survey.

The survey aimed to assess general attitudes toward biodiversity. While 84.8% of these students acknowledged the importance of protecting wildlife, only 50% expressed interest in learning how to do so. Even though non-participants valued wildlife conservation, their interest in learning how to protect it was notably lower. In contrast, 100% of BWAP participants felt both responsible and ready to engage in conservation actions.

Responses from the non-participant survey indicated a gap between knowledge and active involvement in conservation efforts. General awareness alone is not enough to drive real engagement, emphasizing the importance of that experiential learning and project-based program in turning passive awareness into active participation. This lack of engagement may also stem from the teaching approaches employed by educators.

Mr Shavez Cheema of 1StopBorneo, the organizer of BWAP, praised the selected students' participation, describing it as outstanding — one of the best among the seven schools involved in the program across Borneo. The students exceeded than the goal of BWAP, showing great enthusiasm and eagerness to learn about wildlife and conservation. During a field outing in Panaga, they were inspired by the diverse wildlife found in their own backyard. This enthusiasm was reflected on their project for public library in local coffee shop and making distance marker for the longhouse in Teraja. After completing the program, the participants will remain as part of the BWAP community and can offer guidance to future BWAP participants. 1StopBorneo envisions this programme as a catalyst to create more future Bruneian Wildlife leaders, addressing the current trend of wildlife interest being dominated by foreigners or expatriates.

Refer to Appendix 2 for a transcript of audio reply from Mr Shavez Cheema for some post BWAP questionnaire.

Challenges

The challenge lay in bridging the educational gap between theoretical environmental knowledge and practical conservation efforts. Despite the successes, several challenges emerged:

1. Curriculum limitations: Traditional teaching methods, relying heavily on textbooks and lectures, proved inadequate for instilling a sense of responsibility towards local ecosystems. Content-driven syllabi left little room for fieldwork and outdoor activities. A strong emphasis on summative assessments often compels teachers to adhere closely to the prescribed scheme of work, leaving little room for deviation due to strict timelines for syllabus coverage and revision.
2. Teacher preparedness: Limited experience in delivering practical biodiversity education. Teachers requires professional development to enhance their capabilities to deliver impactful conservation lesson (Lukas et al., 2019) All talks and presentations were led by field professionals. Offering professional development workshops or connecting teachers with experts could provide valuable support and establish ongoing collaborations.
3. Logistical constraints: Teachers faced workload challenges, often sacrificing personal time to ensure full student involvement. Some had to swap lessons or participate in activities held during non-school days.

4. Safety concerns: Many teachers were reluctant to assume responsibility for student safety during outdoor activities. Involving parents in these outings could reduce the responsibility on the teachers, but it would require careful logistical planning and a willingness from parents to dedicate their personal time.

Impact

The BWAP demonstrated significant positive outcomes:

1. Enhanced awareness: All participants reported increased knowledge of Brunei's biodiversity and expressed a heightened sense of responsibility towards conservation. Students were more curious about the animals they saw and often ask for identification when they see an animal they are not familiar with.
2. Leadership development: By leading conservation-themed presentations and social media campaigns, students gained confidence in public speaking and advocacy. Teachers noted that students became more fluent and confident in speaking to both peers and adults. In multiple events, students were presenting and sharing the conservation and wildlife knowledge that they have learnt. Their interaction with His Majesty and the royal family at Ramah Mesra for His Majesty Birthday in Kuala Belait further demonstrated their growth as young leaders.
3. Engagement with local business and community: At Lanes Café, the participants installed the Balancing Hornbill as art activism and QR codes for customers to access educational material. Similarly, they collaborated with Bake and Brew to create a resource bookshelf, fostering a culture of continuous learning within the community. The café owner reported that customers actively used these resources.
4. Inclusive learning: Collaboration between mainstream and special-needs students fostered social cohesion. They worked together on projects like managing plant nurseries, demonstrating an understanding of habitat restoration and species interdependence. It emphasised the absence of barriers between pre-vocational and mainstream students, promoting seamless collaboration and reducing the stigma often associated with engaging with special-needs students. On daily basis, there is not much interaction between the mainstream and pre-vocational students.
5. Public outreach: Students presented their knowledge at multiple events, including an interaction with His Majesty and the royal family at the Ramah Mesra for His Majesty's Birthday in Kuala Belait.

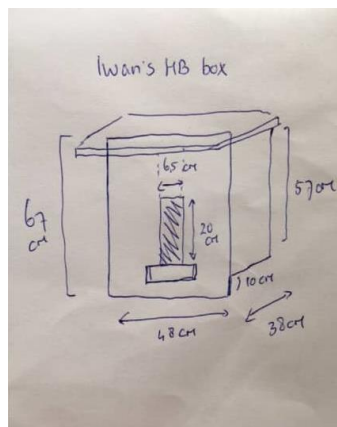
Refer to the following pictures for the activities throughout the programme.



Student maintaining the plant nursery, consisting of natives species and fig trees.



Attending talk by Dr Ulmar, Brunei Nature Society and outing at Tropical Biodiversity Centre, Sungai Liang



Hornbill Nest Workshop with Mr Ledumin, 1StopBorneo



Online Talk at Lab after school.



Public library with owner of Bake and Brew Café



PV graduation Roadshow



Ramah Mesra during HM's Birthday

Long-Term Implications

While BWAP is still in its first cycle, early indicators suggest positive long-term outcomes:

1. Alignment with Sustainable Development Goal (SDG): The program supports SDG 4 (Quality Education) and SDG 15 (Life on Land), particularly targets 15.5 and 15.7 related to biodiversity protection and prevention of poaching. BWAP has enabled students of varying abilities to acquire essential knowledge and skills. The programme has also empowered participants to confidently advocate for wildlife conservation, with the potential to positively influence them beyond their school years.
2. Contribution to national goals: BWAP aligns with *Wawasan Brunei 2035*, fostering highly educated, engaged citizens inclined toward environmental stewardship. Student ambassadors have become role models, inspiring peers and communities to engage in conservation efforts.
3. Community impact: The installation of educational resources in local cafes suggests a ripple effect beyond the immediate participants.

Conclusion

The BWAP case study highlights the transformative potential of experiential learning in developing future conservation leaders. Findings from BWAP indicate that biodiversity education enhances student engagement, cultivates leadership skills, and fosters the development of community ambassadors. It equips students with the knowledge and competencies necessary to address environmental challenges, aligning with the objectives of *Wawasan Brunei 2035* and the Sustainable Development Goals (SDGs). In addition to achieving strong academic outcomes, students must also have opportunities to connect with and protect the natural environment in their communities.

As expressed in the Malay proverb, "*Tidak kenal maka tidak cinta*" (You cannot love what you do not know), meaningful environmental engagement requires students to first develop a thorough understanding of their environment.

Research Limitations

The study's small sample size limits its generalizability. This is a case study based on 4 participants and 79 non-participants in the same school. However, the findings provide valuable insights into the effectiveness of project-based learning in conservation education. Future studies could involve larger cohorts from multiple schools across Brunei to further validate these findings.

Recommendations

1. Integrate wildlife and biodiversity topics into the formal secondary school curriculum to reach a broader student base. Relying solely on the goodwill of individual teachers is insufficient to guarantee consistent exposure to environmental knowledge. A curriculum update could intentionally embed local wildlife and conservation topics into science education, such as through lessons on animals and their habitats.
2. Establish partnerships between schools, higher education institutions (such as Universiti Brunei Darussalam), and conservation organizations to enrich the curriculum and strengthen conservation efforts. Such partnerships would be more effective if guided by clear directives from policymakers, ensuring streamlined implementation and alignment with national educational priorities.
3. Provide professional development for teachers in biodiversity education, potentially through workshops or collaborations with field experts.
4. Explore digital tools, such as virtual biodiversity tours, to address financial and logistical challenges while enhancing learning outcomes.

Practical and Social Implications

Programs like BWAP demonstrate the potential of experiential learning in developing future conservation leaders. By collaborating with local businesses, students build networks that enhance the reach and impact of their projects. The program also highlights how inclusive learning environments benefit all students, promoting both ecological literacy and social responsibility.

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Appendix 1

The following is a timeline for BWAP from the start to the finishing of program. Despite the closing of programs, students are still continuously involved in the conservation project.

Timeline and Activities for BWAP

Date	Event	Location and Stakeholder
October 2023	Founder of 1StopBorneo offer the opportunity to join the programme	
November 2023	School principal write in to Department of School for Approval	
December 2023	Approval from Department of School to join the programme	
January 2024	Choosing 4 students to participate in BWAP	SMSA
	Launching of BWAP	Kinabalu International School, KK
	Talk: The Importance of Fig by Mr Chun Xin Wong and Ms Yulinda, 1StopBorneo.	Jerudong International School, BSB
February 2024	Talk: From Poacher to Conservation Officer by Mr Ledumin, 1StopBorneo in SMSA.	SMA
	Hornbill Nesting Box Workshop by Mr Ledumin	SMSA
	Making of Balancing Hornbill Installment	SMSA
	Wildlife awareness talk and Balancing Hornbill for school Visit from SMK Penampang, KK	SMSA
	Online Talk: Introduction to the Songbird Trade by Serene Chng	
	Online Talk: Pangolin Day by Elisa Panjang	
March 2024	Showcase PV Roadshow and Graduation	Time Square, BSB
April 2024	Installment of Balancing Hornbill at Lanes Café KB	Lanes Café, KB
	Outing: Brunei Bay Boat Ride with 1StopBorneo and Brunei Nature Society	Pulau Berambang, Kampong Ayer

	Talk: Good and Evil of Oil Palm by Mr Shavez, 1StopBorneo	SMSA
	Borneo Wildlife Series Viewing	SMSA
	Outing: Wildlife Sighting at Panaga by Mr Shavez, 1StopBorneo	Panaga Shell Housing
May 2024	Talk and Outing: A Treasure Trove of Biodiversity by Dr Ulmar, Brunei Nature Society	Tropical Biodiversity Centre, Sungai Liang
	Book Shelf Setting Up in Bake and Brew	Bake and Brew Café, KB
	Lunch Time Online Talk: Pitcher Plants of Borneo by Serena Lamb & An introduction to Turtles by Baizurah	SMSA
June 2024	Lunch Time Online Talk: Stop Fishing Bombing Malaysia by Terence Lim & Nudibranchs by Premala/Adi	SMSA
July 2024	Showcase during Ramah Mesra for His Majesty 78 th Birthday	KB Padang
	Closing of BWAP in SMSA	SMSA

Appendix 2

Questions post to Mr Shavez

- 1) What are the goals of BWAP?
- 2) How are the SMSA students participation in BWAP compared to other school schools?
- 3) Did the SMSA students participants achieved the goal of BWAP?
- 4) What are the future plan for the students who participated in BWAP?

Transcript of reply from Mr Shavez

“And the main goal was to focus on a quality group of selected students only.”

“The SMSA school participation was above average and actually excellent. And we have realized the participation rate in all the schools depended on the level of interest by the school teacher and the school itself. And SMSA, I would say, is in the top three of the most involved schools and we thank Ms. Chong JiaBei for this because she is so passionate and enthusiastic and most importantly proactive. All the deliverables by them were delivered and they made a meaningful impact to the community at the longhouses, for the hornbill boxes and for our local education.”

“The SMSA students' participation more than achieved the goal of the BWAP and the students have been very, very keen and interested and we're happy the program was taken very positively over the year and the goals were achieved. We were happy they saw the wonders of Brunei's wildlife behind their own backyard for example in during the one of the outings in Panaga for example. So, we saw the keen interest and we can see the results which they made for example the coffee shop one and the indicators for the longhouse.”

“The future plan is that they will be still part of the BWAP community. The future BWAP students can ask them for advice and feedback or can keep them involved. So we will keep BWAP as a very special initiative and we will make sure they get exclusivity in future activities and events and exclusive deals as well. And we hope this will create a great community, the BWAP community of Borneo and Brunei being led by the SMSA students. So this was not a one-time wonder or one-time event. Now it's a lifetime membership and community.”

“The goals, I think you can find it in the document I can send to you, but basically the goal is to create more future Bruneian wildlife leaders, mostly it's foreigners or expats who are interested in this, so we want to involve all Bruneians, and this is the most perfect way.”

An investigation of factors affecting Year 10 performance on Humanities subjects (Geography, Travel and Tourism and History) using Clark and Estes' (2008) Gap Analysis model

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Abstract

This research investigates factors influencing Year 10 performance in Humanities subjects at a co-ed secondary school in Brunei. The study aims to identify root causes of performance gaps and recommend strategies to improve achievement in Geography, Travel and Tourism, and History. The methodology involves mixed methods - interviews with students and teachers, surveys, and exam result analysis. The Clark and Estes Gap Analysis model identifies knowledge/skills gaps, motivational challenges, and organizational barriers contributing to these performance gaps. The findings reveal key factors such as language barriers, limited understanding, poor motivation, and low readiness. The analysis of exam results highlights inconsistent achievement across these subjects from 2017 to 2022. Recommendations include implementing higher-order thinking skills programs, offering additional resources for teachers, and fostering a culture of continuous improvement through the PDCA (Plan-Do-Check-Act) approach. These insights are vital for educators and policymakers aiming to enhance student outcomes in Humanities subjects. By addressing the identified challenges, schools can create a learning environment that promotes academic success and holistic student development. This research provides valuable strategies for improving Year 10 Humanities performance and contributes to the overall educational quality of the school.

Keywords: Gap Analysis, Humanities subjects, academic performance, secondary education, mixed-methods research.

1.0 Introduction

Secondary school performances in Brunei are based on the school achievement in O level results. The results are usually categorized by percentages of students achieving 5 credits and above (grade A to C). Underlying the gaps in factors affecting performance is vital in ensuring school success.

The purpose of this research is to identify and address the factors influencing Year 10 students' performance in Humanities subjects—Geography, Travel and Tourism, and History—at a co-ed secondary school in Brunei. Using the Clark and Estes (2008) Gap Analysis model, this study aims to uncover root causes of performance gaps, including knowledge and skills deficiencies, motivational challenges, and organizational barriers. By focusing on these specific factors, the research seeks to develop actionable strategies that improve academic outcomes such as PDCA (Plan-Do-Check-Act) cycle. This cycle offers a systematic framework for implementing and evaluating intervention. Additionally, this study contributes to the limited research on Humanities education in Brunei, offering insights into effective teaching and learning practices tailored to the local educational context.

Upon completion of the analysis, a set of findings based on the following were produced:

- Knowledge/ skills gaps.
- Motivational gaps.
- Organisation barriers.

2.0 Literature review

Academic achievement is important to determine the future education of individuals and future employment of students (Flashman, 2012). Many researchers investigate the factors that have major implications on academic achievement (Marques, Gallagher, & Lopez, 2017).

Kocak, et al. (2021) reviewed factors affecting academic achievement using systematic review of meta-analyses. Their study revealed that variables that influence academic achievement are categories of psychological, socio-economic, socio-demographic, and individual characteristics, learning theories and teaching strategies and family. These findings emphasize that multifaceted, requiring an integrated approach to identify and address gaps effectively.

In schools, academic achievement is usually measured by assessment. Assessment is the act of obtaining, comprehending, and analyzing data to enhance decision-making (Siddiq et al., 2019). Assessment is used to evaluate students' progress and determine how well they have mastered a particular subject (Krismony et al., 2020; Sukmasari & Rosana, 2017). This includes students' thinking skills. Bloom's Taxonomy divides thinking skills into two categories: lower-order thinking skills (LOTS) and higher-order thinking skills (HOTS) (Abosalem, 2016; Ichnas et al., 2019).

Higher-order thinking skills have become an important aspect in teaching and learning in Brunei. Brunei Teachers Standards Teacher Performance Appraisal implemented in 2016, not only measures teachers' quality teaching standards, but also measures the learning and achievement of students. Analysis and Evaluation (A4) and Creativity in Learning (A5) in BTS-TPA are HOT skills that students must possess. However, studies show that many students continue to struggle with HOTS, particularly in subjects that demand extensive content knowledge and analytical thinking (Gilakjani, 2017; Mubarak & Anggaraini, 2020; Suherman, et al., 2020). This challenge is especially pertinent in Humanities subjects, where students must interpret historical events, geographical patterns and tourism concepts critically.

Research has shown that one of the important factors that influences academic achievement are students themselves (Hattie, 2015; Schneider & Preckel, 2017; Biswas, 2023). Studies by Scheneider and Preckel (2017) and Biswas (2023) also shown that students' self-efficacy have strong impact on students' achievement. Hattie (2015) supports this view, arguing that students' beliefs in their capabilities are among the most powerful predictors of their academic outcomes.

Language proficiency is a critical factor in students' success, particularly in content-heavy subjects like Humanities. Research suggests that language barriers can significantly hinder students' understanding of complex texts and exam questions (Young-Davy, 2014). Gilakjani (2017), language barriers not only affects students' comprehension but also their confidence in participating in classroom discussions and assessments.

Studies suggest that explicit vocabulary instruction such as Frayer Model helps to improve students' ability to grasp and apply academic terminology (Stahl & Fairbanks, 1986; Akhtar & Saeed, 2022). This is particularly relevant to Brunei's context, where students often face challenges with English, the medium instruction for many subjects.

3.0 School performance

School performance, measured by O Level results, is crucial for evaluating teaching effectiveness and student achievement. Humanities subjects like Geography, Travel and Tourism, and History are optional but significantly impact overall school results, making their performance trends essential to address for improvement. Highlighting the performance trends in these subjects provides valuable insights for targeted interventions to improve academic outcomes.

3.1 The impact of Humanities performance

Secondary school performances are based on the school achievement in O level results.

Table 1 presents the Humanities performance of the selected co-ed secondary school in the Brunei Muara District, highlighting Geography and Travel and Tourism as key subjects with the potential to boost the school's achievement in obtaining five credits or more. Travel and Tourism recorded a high pass rate of 85.70% in 2017, while Geography reached 54.20% in 2020. However, the results for these two subjects are inconsistent throughout the years. There is a growing concern for humanities subjects that are Geography, History and Travel and Tourism, which are optional subjects.

	Year	2017	2018	2019	2020	2021 SAG	2022	TREND 3 YEARS BACK
1	2171 - HISTORY	12.50%	21.90%	0.00%	30.80%	47.40%	13.30%	Not consistent
2	2230 - GEOGRAPHY	10.00%	25.50%	26.00%	54.20%	89.20%	31.70%	Not consistent
3	7096 - TRAVEL AND TOURISM	85.70%	No Y11 students taking T&T in 2018 & 2019		30.00%	100.00%	0.00%	Not consistent

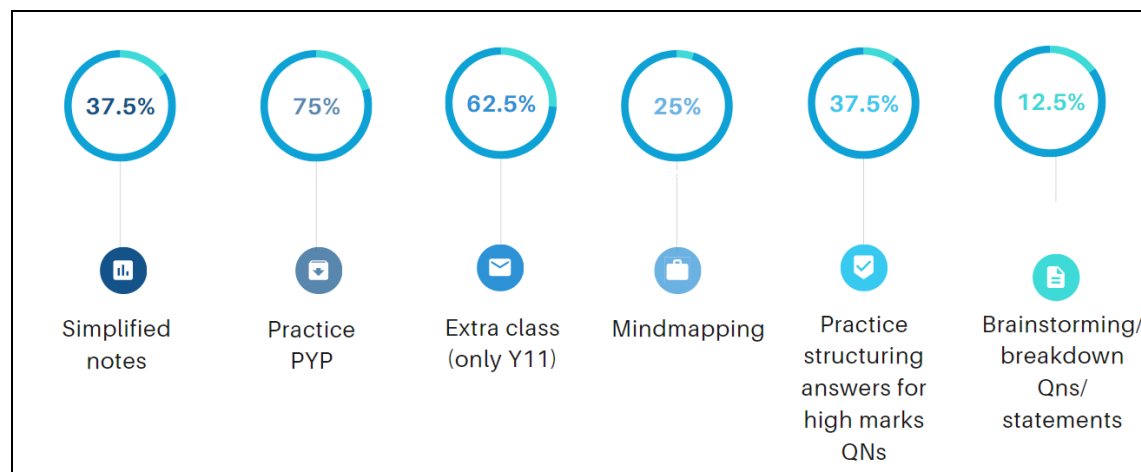
Table 1: O level achievement for Humanities subjects from 2017 to 2022

	A	B	C	D	E	U	Total students
Geography (2230)	0	4	9	8	9	11	41
%	31.7			41.5		26.8	
History (2171)		1	1	6	0	7	15
%	13.3			40		46.7	
Travel and Tourism (7096)	0	0	0	0	1	14	15
%	0			6.7		93.3	

Table 2: O level results breakdown (2022) for Humanities subjects across different grades

Table 2 shows O level results breakdown in 2022 for the three subjects. The gaps in achievement for the three subjects (especially Travel and Tourism) need to be examined because they reflect underlying issues such as uneven teaching strategies, language barriers, or motivational challenges among students. Addressing these inconsistencies is essential to ensure sustained academic progress, particularly in optional subjects like Travel and Tourism, which have the potential to significantly contribute to the school's overall performance.

3.2 Planned and implemented action plan for Humanities subjects



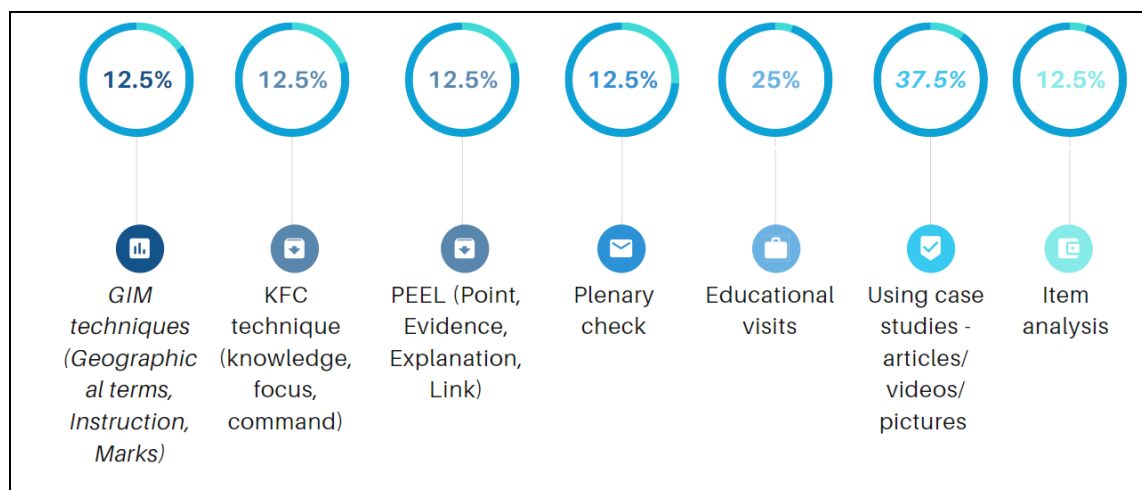


Fig 1: Summary of action plan for Humanities teachers (see more on appendices 3)

Figure 1 shows strategies for improving teaching and learning are not standardized across all the teachers in the department. Each teacher has their own action plan. Furthermore, only one teacher does item analysis for exam papers.

Although teachers employ different approaches (Figure 1), table 1 indicates that the performance in Humanities subjects has not consistently improved over the years. This inconsistency is concerning because it suggests a lack of standardization and alignment in teaching strategies, which may contribute to the fluctuating results. Therefore, a well-monitored and effective plan is crucial to address these disparities, ensuring that future efforts are targeted and lead to measurable improvements in student outcomes.

4.0 Methodology

This study utilized a mixed-methods approach grounded in the Clark and Estes Gap Analysis Model (2008) to examine factors affecting Year 10 performance in Humanities subjects. Data collection included surveys of 70 students to assess knowledge, motivation, and attitudes, and semi-structured interviews with 10 students and 5 teachers to explore challenges and teaching strategies. Secondary data, such as exam results and reports from 2017–2022, supplemented the primary data. Quantitative analysis involved calculating mean scores to identify trends, while qualitative methods extracted themes from interviews, validated through triangulation across all data sources. Sampling focused on Year 10 students and all available Humanities teachers to ensure representation and relevance. Ethical approval was obtained, with voluntary participation and anonymized data. This robust methodology ensures a comprehensive understanding of the performance gaps and their underlying causes.

The researcher also used secondary data from the survey from “School Improvement Plan Focus Area 1 (2023) – Academic Vocab Explicit Instructions” of Year 10. The researcher wished to use some of the data to triangulate the findings of the KMO Gap Analysis (See Appendix 8).

4.1 Assumed causes

This research will examine and analyse the performance of Humanities students using Clark and Estes’ Gap Analysis Model (2008) to discover the root causes and to propose recommendations to the school using Gap Analysis Model. The three factors examined using Gap analysis models are: lack in knowledge/skills, lack of motivation and organizational barriers. The assumed causes were generated based on researcher’s pre-dialogue with colleagues (see more details in Appendix 1).

4.2 Research questions

From the initial scanning interviews, the main research questions below were developed.

R1: What are the factors affecting students’ outcomes in Humanities subjects?

R2: What are the attitudes of students towards Humanities subjects?

4.3 Data analysis

Analysis of the questionnaire will be done quantitatively by calculating the mean (average). Calculating averages allowed for the comparison of responses across different student ability levels (high, medium, and low), highlighting areas of strength and weakness in their academic performance.

Students’ and teachers’ interviews will be analyzed qualitatively to extract common themes to identify and validate the assume causes and identification of root causes. For instance, themes such as language barriers, motivational challenges, and inconsistencies in teaching strategies were examined in depth to pinpoint root causes. This approach was chosen to capture the nuanced perspectives and experiences of participants, which quantitative data alone could not reveal.

5.0 Findings and Analysis

5.1 Students' survey

The survey consisted of 27 voluntary questions completed by Year 10 students taking Humanities subjects. Using a five-point Likert scale (Cohen et al. 2018), the mean values for all participating students were calculated. Furthermore, they were also categorised based on English results -high abilities (HA), medium abilities (MA), and low abilities (LA). (see appendix 2 for the mean scores of all questions of the survey questions). Table 3 shows selected statements in the questionnaire that will be addressed in the report. High mean values scores show that most students agree with the statement in the questionnaire.

	Statements in questionnaire	KMO	HA	MA	LA	Mean
B2	I can remember the term when the definition is given	KF	3.76	3.47	2.88	3.41
B3	I can give examples to every of the terms	KC	3.48	3.23	2.76	3.19
B7	I don't understand the contents of the topics learnt.	KM	2.25	2.48	3.06	2.56
B8	I find that the words or sentences used in exam questions difficult	KP	3.24	3.41	3.75	3.43
B9	I prefer to have direct and simple sentences in exam questions	KP	4.19	4.00	3.88	4.03
C1	I have strong motivation to memorize definitions for my subjects	MP	3.24	3.09	2.88	3.09
C3	I am confident to define terms on my own without help from teacher, books, internet and dictionary.	MME	2.62	2.58	2.18	2.49
C4	I chose to skip questions that I do not understand especially in exam	MP	3.57	3.53	3.41	3.51
C5	I often depend or rely on my teachers for answers	MAC	2.95	3.00	3.47	3.10
C6	I usually avoid questions that are higher order thinking [assess, evaluate, judgement, how far do you agree, justify)	MP	2.95	3.13	3.31	3.12
C7	I often skip questions that score high marks	MP	2.52	2.66	3.12	2.73
C8	I usually don't score on high mark questions	MP	3.14	3.25	3.69	3.32
D3	My teacher often uses OTHER LEARNING resources (e.g. tablets)	OR	3.10	2.84	3.00	2.96
D4	I often have time to try past year questions in the lesson for my subject	OSPP	3.67	3.19	2.94	3.27
D5	I am more focused on my core subjects (BM, English, Maths, IRK) than optional subjects (Geography/ History/ Travel and Tourism)	OC	3.14	3.28	3.88	3.39
D6	I often do revision at home for optional subjects	MAC*	3.33	3.25	2.76	3.16

D7	I believe that optional subjects are important	OC	4.00	3.88	3.88	3.91
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Table 3: Unvalidated assumed causes from students' survey

Key findings from Table 3 show that many students struggle with the language used in exam questions (Mean=3.43). Most students expressed a preference for simpler, more direct sentences in exams (Mean=4.03). A significant portion admitted skipping questions they did not understand, particularly higher-order thinking (HOT) questions. Lower-ability students reported difficulties in remembering key terms (LA-Mean=2.88) and providing examples (LA-Mean=2.76). Additionally, they lacked motivation to memorize definitions (LA-Mean=2.88) and relied heavily on their teachers for assistance (LA-Mean=3.47).

Interestingly, higher ability students are also not confident in defining the terms independently (HA - Mean=2.62), although there is a high mean value for their ability to remember the term when definition is given (HA-Mean=3.76). Most students avoided questions that required HOT skills (Mean=3.12). While some students made attempts to answer high-mark questions, they were often unsuccessful, with lower- and medium-ability students frequently skipping them.

The survey also revealed that many students focused more on core subjects like Bahasa Melayu, English, and Mathematics, rather than optional subjects such as Geography and History (Mean=3.39). Lower-ability students were less likely to revise for optional subjects at home (Mean=2.76) Nevertheless, a majority still recognized the importance of these optional subjects (Mean=3.91).

5.2 Interviews

Qualitative interviews were conducted on two groups (i.e., the students and the Humanities teachers. The students were randomly sampled from each level of abilities (based on English results) and representatives of different classes taking general sciences, general arts and applied program. The students interviewed are those taking at least one of the Humanities' subjects and voluntary participation was ensured.

No	Participants	Number of samples
1	Students	5 LA, 4 MA, and 1 HA
2	Teacher	3 Geography teachers, 1 History teacher and 1 Travel and Tourism teacher

Table 4: Interview sample (LA-low ability, MA-Medium ability, HA-High ability)

Due to the small numbers of Humanities teachers, interviews were carried out on 5 teachers only.

The questions focus on the KMO assumed causes generated by the researcher. The interviewer had a list of detailed questions that were used to guide the interview (see appendix 4). One of the interviews had to be done through the phone due to time constraints and clashes of timetable with the researcher.

Teachers' responses were transcribed and analyzed to see emergent themes.

5.2.1 Analysis of Findings from Student Interviews

Interviews with ten students, categorized into low, medium, and high ability levels, provided valuable insights into their experiences with Humanities subjects. The responses revealed a range of perceptions and challenges, highlighting several recurring themes related to language barriers, motivation, and exam readiness. This analysis synthesizes those findings to address the research questions and align with the Clark and Estes (2008) Gap Analysis framework.

Interest in Humanities Subjects

While six out of ten students expressed that they enjoyed Humanities (Geography, History, or Travel and Tourism), it is significant to note that a majority still perceived these subjects as challenging. Notably, 80% (8 out of 10) of students indicated that Humanities subjects are difficult, attributing this to the specialized vocabulary and complex exam language.

One student quoted saying: *"Yes, difficult...because sometimes you have to think logical and give reasons. Sometimes, I don't understand the questions."* Another student quoted saying: *"Boleh dikatakan payah. Sentencenya putar belit. Soalannya pendek, tapi jawabannya mesti Panjang."* (The subjects can be considered as difficult. The sentences are very confusing. The questions are short but demand long answers.) This aligns with the knowledge/skills gaps identified in the survey, suggesting that students struggle with comprehension, especially when faced with terminology-heavy subjects like Geography. The repeated mention of complex language suggests that limited academic vocabulary is a major barrier to student engagement.

Ability to Define Terms and Examples

There was a marked difference in responses based on student ability levels. Lower-ability students consistently reported difficulties in defining terms or providing relevant examples, which is critical for understanding key concepts in Humanities. In contrast, medium and high-ability students noted that their ability to define terms depended on the topic, indicating partial proficiency. However, even the higher-

ability student acknowledged struggles with specific terms in Travel and Tourism. This suggests that while some students have foundational knowledge, gaps in topic-specific terminology persist. This finding points to a **motivational mental effort (MME) issue**, where students lack confidence in their independent understanding, leading to a reliance on rote memorization rather than deeper comprehension.

Avoidance of Higher-Order Thinking Questions (HOTs)

The reluctance to engage with HOT questions (such as those requiring evaluation, justification, or assessment) was a prevalent theme, with 70% of students admitting to skipping these questions during exams. One student quoted saying: *"kalau anda tahu, tinggalkan."* (If I don't know, I would leave it blank). The avoidance of HOT questions was particularly pronounced among lower-ability students, who often left these sections blank. This aligns with the identified motivational gaps, particularly **motivational persistence (MP)**, indicating that students lack the confidence and strategies to approach complex questions, thereby affecting their performance.

Exam Readiness and Revision Practices

A concerning pattern emerged regarding exam preparation. Most students, particularly those in the lower-ability group, reported minimal revision, often restricted to the night before exams or the morning of the test itself. One student quoted saying: *"I just do-little bit of revision. It is mostly before the exam - during the day."* This finding highlights a broader issue of academic readiness and study habits, suggesting organizational barriers where students are not adequately prepared or do not prioritize revision for Humanities subjects compared to core subjects like Mathematics or English. This supports findings from the survey (Item D6), where students indicated a stronger focus on core subjects over optional ones like Humanities.

Perception of Teachers' Strategies

Students generally acknowledged that teachers employed various strategies to aid understanding, such as simplified notes, mind mapping, and multimedia resources like PowerPoint slides and videos. However, the inconsistent use of technology (e.g., tablets) across subjects was noted, suggesting a lack of standardized instructional practices. The varied teaching approaches may contribute to organizational barriers identified in the study, where differences in teaching quality could impact student outcomes.

5.2.2 Analysis of Findings from Teacher Interviews

Interviews with five Humanities teachers — three specializing in Geography, one in History, and one in Travel and Tourism— provided in-depth perspectives on the factors influencing student performance in Humanities subjects. These findings were analyzed to identify patterns that align with the Clark and Estes (2008) Gap Analysis framework, particularly focusing on knowledge/skills gaps, motivational challenges, and organizational barriers.

Knowledge/Skills Gaps: Language Barriers and Conceptual Understanding

A common concern among teachers was the significant language barrier students face, particularly with specialized vocabulary in Humanities subjects. Four out of five teachers reported that students, especially those in lower-ability groups, struggle to comprehend the terminology required for subjects like Geography and History. Teachers noted that while higher-ability students could recall definitions with some guidance, lower-ability students frequently failed to remember key terms and concepts during exams.

These language difficulties are consistent with findings from student interviews, indicating a pervasive knowledge/skills gap where students are unable to independently define terms or provide accurate examples. Teachers also highlighted that many students tend to memorize content without fully understanding it, which suggests a lack of deeper cognitive processing needed to excel in higher-order thinking tasks. This aligns with the **knowledge factual gaps (KF)** in the Gap Analysis model, indicating that students' limited grasp of subject-specific vocabulary impacts their overall comprehension and performance.

Motivational Gaps: Avoidance of Higher-Order Thinking Questions (HOTS)

All teachers confirmed that students, particularly those in the lower-ability group, often avoid attempting HOT questions that require critical thinking, evaluation, or justification.

One teacher quoted saying: *“For the fast learners, they independently try by themselves to do the HOT questions. And then for the slow learners, no.”* This avoidance behavior was reflected in both student interviews and survey results, where many students admitted to skipping complex questions or leaving them blank.

Teachers observed that this lack of engagement with challenging questions stems from students' low confidence and fear of making mistakes. One teacher quoted saying: *“During exams, I do experience blank sheets returned back to me, so they do skip it [HOT questions]. But, some of the good students do try answer.”* This shows the reluctance to attempt HOT questions indicates a clear **motivational**

persistence (MP) issue. The students' lack of resilience and willingness to engage with difficult questions highlights a motivational gap that impacts their academic outcomes in Humanities subjects.

Organizational Barriers: Inconsistent Use of Instructional Resources

The use of teaching resources and technology emerged as a mixed practice among the teachers interviewed. While most teachers reported using PowerPoint slides and videos to enhance student engagement, only two teachers occasionally integrated tablets or ICT tools in their lessons. The inconsistent use of digital resources across classrooms points to an organizational barrier, where a lack of standardization in teaching practices may contribute to varying student outcomes.

Teachers acknowledged that while multimedia resources can aid in simplifying complex concepts, the availability of these resources is limited and depends on the school's infrastructure and scheduling constraints. This aligns with the **organizational resource (OR)** from the Gap Analysis, suggesting that differences in resource availability and teacher preparedness can hinder the effective delivery of content, thereby affecting student learning experiences.

Dependence on Teachers for Answers

Teachers also expressed concern over students' high dependence on them for guidance, particularly among lower- and medium-ability students. Four teachers noted that their students frequently seek assistance for even simple questions, indicating a lack of confidence in their own problem-solving abilities.

One teacher was quoted saying: *"Depends on the class. Platinum (applied class) need 100% guidance and intervention from the teacher."* This dependence reflects a lack of self-directed learning skills, which aligns with both **motivational mental effort (MME)** and **organizational support (OS)** issues.

The over-reliance on teacher support suggests that students are not developing the critical thinking and independent study skills required to perform well in Humanities subjects. This finding also ties into the organizational gap where instructional strategies may not be effectively fostering independent learning.

5.3 Synthesis of Findings

The teacher interviews confirm several of the key assumptions identified through student surveys and interviews

1. Knowledge/Skills Gaps: Students' difficulties with academic vocabulary and specialized content in Humanities subjects indicate that current instructional methods may not adequately support vocabulary acquisition or content comprehension.

2. Motivational Gaps: The tendency to avoid HOT questions reflects a lack of confidence and motivation to tackle complex tasks, which is further compounded by inadequate revision habits.

3. Organizational Barriers: Inconsistent teaching strategies and a lack of emphasis on Humanities subjects compared to core subjects suggest systemic issues in curriculum delivery and prioritization.

These insights underscore the need for targeted interventions, such as explicit vocabulary instruction and teacher professional development on engaging students in HOT questions. The findings also suggest that fostering better study habits and revision strategies could enhance student readiness and performance in Humanities subjects.

6.0 Propose solutions.

The researcher decided to select three validated assumed causes and proposed solutions. These are:

KF2: Students experiencing language barriers.

MP3: Students chose to skip questions they do not understand – students' knowledge and understanding.

MP4: Students avoid answering higher order thinking questions.

6.1 Proposed solutions for improving students' language skills.

- Explicit Vocab Instructions Across Curriculum.

This proposed solution aims to improve students' language competencies by using explicit instructional methods such as Frayer model, semantic mapping, word routines and many more. Stahl and Fairbanks (1986) found that such academic instruction directly improves students' reading comprehension in the content areas particularly when utilizing textbooks. According to Young-Davy (2014), explicit instructions will expose learners to appropriate and necessary vocabulary. Secondly, it raises students' awareness of the importance of broadening their vocabulary base and become more vocabulary receptive. Another

study by Akhtar and Saeed (2022) stated that Frayer model in the classrooms helps to improve students' academic achievement and develop concepts.

This action could be done as a school improvement plan whereby this action would require all subject teachers to use explicit instructional strategies in their lessons. For example, covering one keyword per lesson for 5-10 minutes that could be done as introduction, as lesson development or as closure. When all subject teachers incorporate explicit vocabulary instruction, students receive consistent reinforcement of academic language across different contexts. This repetition helps to solidify their understanding and retention of key terms. For example, if terms related to analysis or evaluation are consistently reinforced in subjects like English, Geography, and History, students will become more comfortable using these concepts across different disciplines. This cross-curricular approach ensures that language development is not isolated but integrated into the students' overall learning experience.

Using PDCA (Plan, Do, Check and Act) tool will help the school to be systematic and review their students' progress especially in understanding the concepts better. Figure 2 below is suggested PDCA cycle that the school may use to carry out this proposed solution.

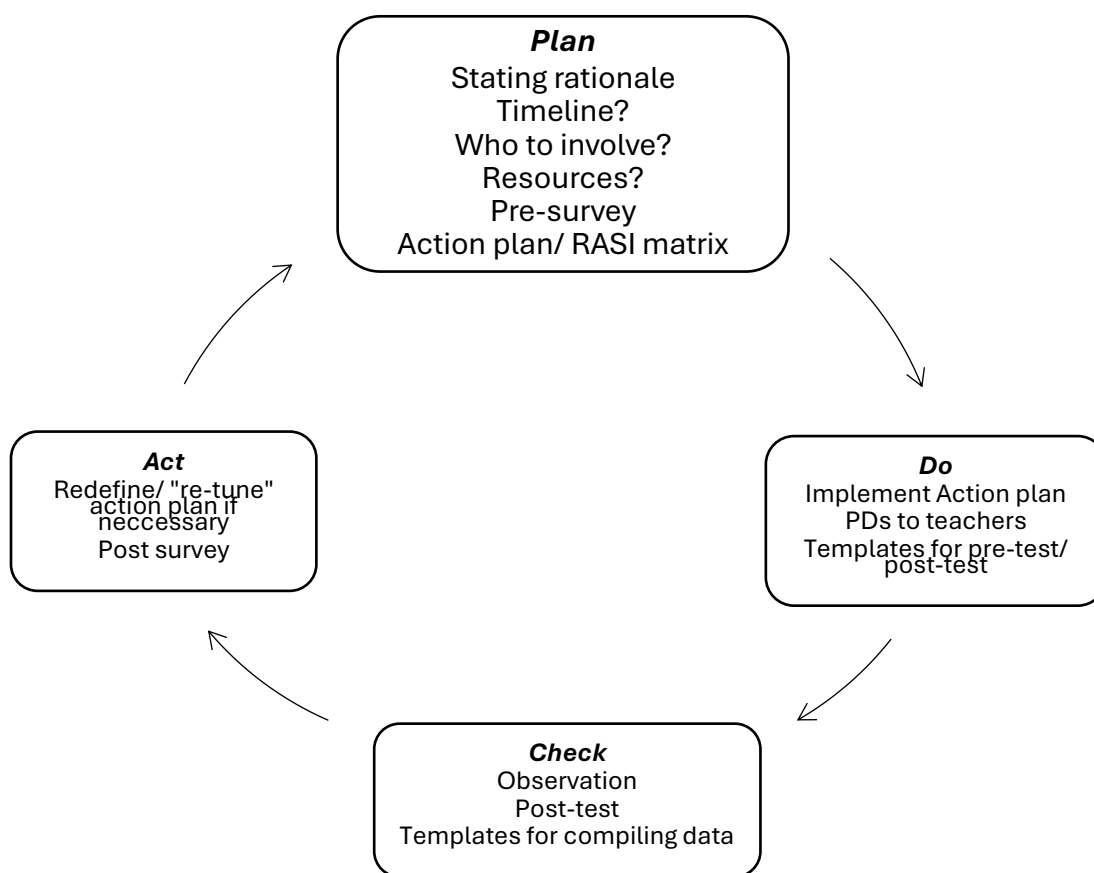


Fig 2: PDCA cycle for proposed solution 1

6.2 Proposed solutions for improving students' knowledge and understanding.

Based on the findings, it is quite alarming that students chose to skip questions they do not understand. To tackle this problem, we need to strengthen teaching quality. To do so, it is important for the Humanities department to collaborate effectively to achieve better teaching and learning outcome. Referring to Figure 1 (in section 1), there are different techniques or strategies or action plans by each teacher. However, only one teacher does item analysis. With that, the researcher would like to suggest fully utilize the Professional Learning Circles (PLCs). It will be better for Humanities department to fully utilize the PLCs to share best practices and resources since the school already have slotted Professional Learning Circles (PLCs) in the school calendar.

Things to discuss could include:

1. To review/ analyse exam reports.
2. Do item analysis – to find out the topics that students most struggle.
3. Review current teaching strategies and identify ways for improvement.
4. Differentiation strategies – HA, MA, LA.
5. Collaboration – make use of OneDrive/ staff note to share learning resources.
6. Micro-teaching – for individual improvement and for team improvement

6.3 Proposed solutions for skills to teach answering Higher Order Thinking Questions

Referring to Appendices 4 (extract of some exam questions and examiner report), not many students able to reach evaluative part of questions in exam. Notably, the findings from the teachers' interviews also relates to students' difficulties in answering HOT questions independently. To develop students' confidence in answering HOT questions, we need to start at boost teachers' teaching strategies on engaging students with HOT questions. The school management should develop series of professional development on teaching strategies on engaging students with HOT questions.

Singh et. al (2020) stated that training must be given to teachers by showing good samples of teaching higher-order thinking skills. We need to involve teachers in action research and peer evaluation to reflect on their instructional practice in teaching HOT skills.

Currently, BDLTA offers modules that relate to HOT under Teacher Development Programmes (Modular Series):

1. MP1802 – HOTs in Science
2. MSP5502 – Developing HOT Qns in Mathematics (secondary)

Although the two modules above are not related to Geography, Travel and Tourism and History, the teachers may learn the pedagogical skills in engaging students with HOT questions.

7.0 Limitations, Recommendations for future research and conclusions.

7.1 Limitations of the study

There are several limitations of this study. Firstly, the sample size for the students interviewed is rather small and not balance across abilities (1 student represented higher ability, 4 represented medium ability and 5 students represented lower ability). Furthermore, only one of the students interviewed took History. Therefore, the findings represented for History may be weight more towards the other two subjects. Similar situation for teachers' interview. Only one History teacher was interviewed as there is only one teacher History teacher available during the data collection process. Nevertheless, given the similarities in the nature of the Humanities subjects (History, Geography, and Travel & Tourism) in terms of their focus on analytical thinking, heavy curriculum content, and reliance on students' language proficiency, the findings from History can reasonably be extended to Geography and Travel & Tourism. This generalization is supported by the overlap in the challenges reported by students and teachers across these subjects, such as difficulties with higher-order thinking skills and language barriers, which were consistent across all interviews and surveys conducted. Additionally, since the teaching strategies, assessment methods, and types of cognitive skills required (e.g., essay writing, source analysis) are comparable among these subjects, the identified causes and proposed interventions are likely to be applicable to all three subjects. However, further research is needed to confirm these generalizations and explore any subject-specific differences.

Secondly, the transcript might not be 100% accurate because the recording of the conversations is unclear. There were too much background noises, thus it is difficult to transcribe every word of the students and teachers. Thirdly, the questions developed could still further be improved and validated to capture more reliable KMO causes. Lastly, a more detailed study of qualitative research methodology and interviews protocols should be done so the researcher will be able to gather more scientifically reliable data.

7.2 Recommendations

Other possible factors to be investigated for future studies that have strong correlations with students' academic achievement are:

1. Attendance of extra classes.
2. Teaching strategies adopted.
3. Impact of blended learning and its impact on students' understanding.
4. School academic programs or interventions.

The researcher would also like to suggest how much other factors (beyond the listed KMO in the study) affect students' achievement.

7.3 Conclusion

From the data presented above, a few conclusions can be highlighted. Firstly, the assumed causes for students' outcomes in Humanities subjects are due to language barriers, and most students have poor intrinsic motivation to do better in exam and limited preparation for exam. Secondly, lower ability students that have poor English command have limited skills and understanding on knowledge and concepts for the subjects. Thirdly, both teachers and students agree that Humanities subjects are difficult due to the change in syllabus, a lot of terms (such as geographical terms) and require students to write long answers (especially for HOT questions). Actions are therefore needed to remedy this situation for the improvement of academic achievement. As a way forward, the researcher would like to suggest collecting more qualitative data (for example, lesson observations) and quantitative data (item analysis of exam papers).

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APPENDIX 1: KMO ASSUMED CAUSES



APPENDIX 2: Students Survey Mean Values



APPENDIX 3: QUESTIONS FOR STUDENTS' INTERVIEW & TRANSCRIPT



APPENDIX 4: QUESTIONS FOR TEACHERS' INTERVIEW & TRANSCRIPT



APPENDIX 5: ACTION PLAN OF HUMANITIES TEACHERS



APPENDIX 6: ABSTRACT OF EXAM REPORT



APPENDIX 7: ENGLISH DATA & LEXILE SCORES



APPENDIX 8: TRIANGULATION OF DATA TO VALIDATE ASSUME CAUSES



Abbreviations:

Q - Question

SQ - Students' interview questions

TQ - teachers' interview questions

X - could not be validated through survey and teachers' interview

VAC- Validated Assumed Causes

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