Video-Based Learning for Higher Education 5.0 Exposure and Immersion

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.910000395

Received: 12 October 2025; Accepted: 20 October 2025; Published: 13 November 2025

ABSTRACT

The Higher Education 5.0 initiative represents a shift in tertiary education, seeking to align academic instructions with the realities students will encounter in their future workplaces. The transformations brought about by Industry 4.0 have fundamentally altered workplace training paradigms. Tertiary students, as tomorrow's workforce, are increasingly encountering educational technologies characteristic of Higher Education 5.0, with video-based learning (VBL) emerging as a particularly significant innovation. As a cornerstone of the flipped classroom model, VBL has become instrumental in facilitating blended pedagogical approaches across universities and tertiary institutions. Throughout the ASEAN region, this technology is proving transformative for both learners and instructors, enabling round-the-clock access to educational content and supporting truly flexible learning environments. Concise, engaging, and informative video content is rapidly becoming the defining medium for knowledge transmission within the Higher Education 5.0 paradigm. This empirical investigation builds upon earlier efforts to develop and disseminate explainer video content designed for broader, more accessible teaching approaches that emphasise fundamental concepts which learners subsequently develop independently. Contemporary VBL has evolved beyond its origins as an informal learning tool to become a mainstream pedagogical resource spanning both academic and corporate educational contexts.

Keywords: Video-based Learning, exposure, immersion, flipped classroom, blended learning

INTRODUCTION

Contemporary educational practice is witnessing an unprecedented acceleration in technological integration. As we progress through the 21st century, digital tools have become ubiquitous resources for both teaching professionals and their students. This technological pervasiveness has fundamentally transformed the parameters of learning, enabling educational engagement irrespective of temporal or spatial constraints (Adnan, Ahmad, Yusof, Mohd Kamal & Mustafa Kamal, 2019). Furthermore, pedagogical processes can now be facilitated remotely through video content, sophisticated digital devices, and various technology-based methodologies (see Adnan & Zamari, 2012a, 2012b; Mohd Adnan, 2018; Zamari & Adnan, 2011). Within this rapidly evolving educational technology landscape, video-based learning (VBL) has emerged as a particularly prominent phenomenon (see Mustafa Kamal, Adnan, Yusof, Ahmad & Mohd Kamal, 2019).

This instructional approach has gained adoption across diverse sectors, including corporate training environments, engineering education, medical instruction, and general educational contexts. Drawing upon my experience in technology-focused content creation, VBL encompasses various formats: animated presentations incorporating infographics and textual elements, scenario-based recordings featuring human interaction, expert-led explainer content with conceptual narratives, kinetic typography videos, and interactive whiteboard animations. These formats prove particularly effective for demonstrating procedures, introducing new concepts, and providing illustrative examples (see Yusof, Adnan, Mustafa Kamal, Mohd Kamal & Ahmad, 2019; Mohd, Adnan, Yusof, Ahmad & Mohd Kamal, 2019). Within higher education, 360-degrees virtual reality or VR video technologies are employed to help tertiary students master, for instance, professional communication, meeting facilitation, interview techniques, decision-making and other competencies (see Figures 1 and 2). This immersive instructional delivery approach provides learners with experiential

understanding that is comparable to 'real world' physical presence (Ahmad, Adnan, Yusof, Mohd Kamal & Mustafa Kamal, 2019).

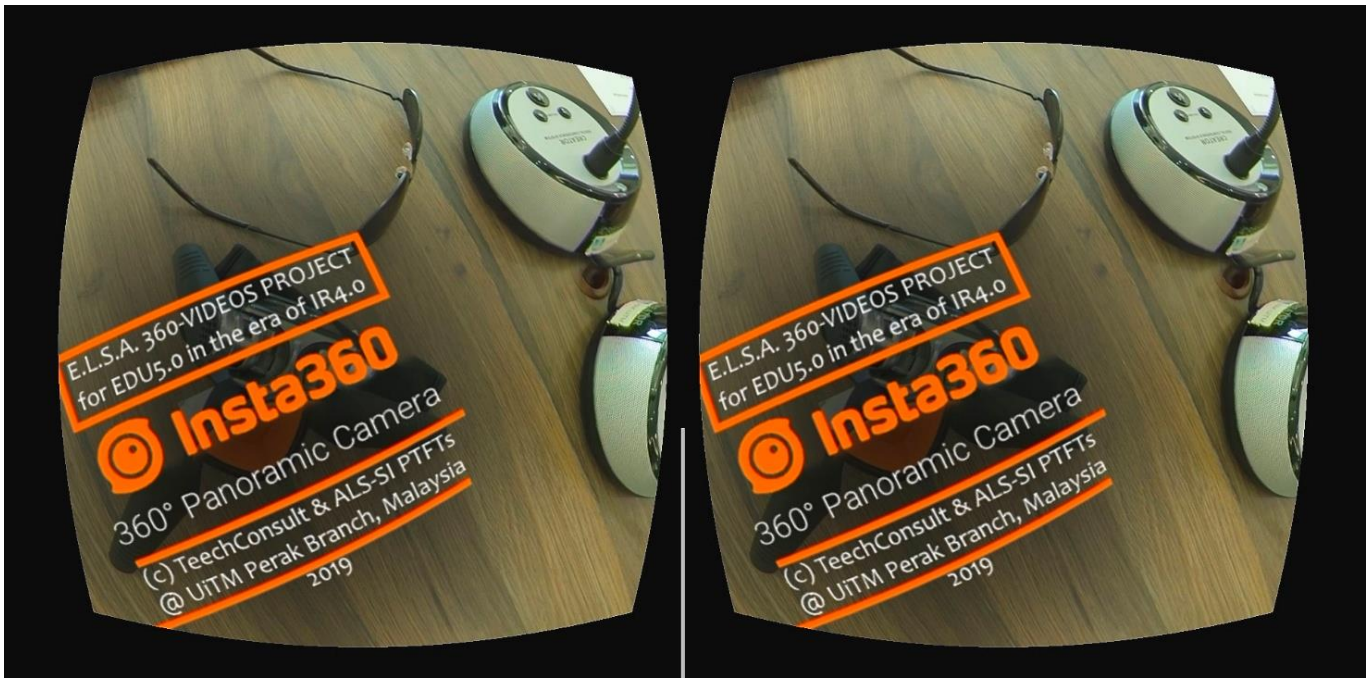

Figure 1. 'ELSA 360-Videos' 360-degrees (VR capable) VBL resource for professional communication

In truth, contemporary students face demanding academic schedules characterised by substantial homework requirements, numerous assignments, and extensive extracurricular commitments. These pressures can lead to physical and mental exhaustion, with time management emerging as a significant challenge. Consequently, class attendance may suffer, resulting in students falling behind in their coursework. The flipped classroom model is a remedy to this challenge, offering solutions beneficial to both educators and learners. This pedagogical innovation aims to facilitate student preparation before formal instruction begins. Essentially, lecture content is provided in advance of scheduled class sessions, allowing actual face-to-face contact to be dedicated to practical application and active learning exercises. The flipped instructional approach gained prominence in 2007 when two American high school teachers developed an innovative method to deliver content to absent students. Their solution involved recording lessons and making them available online (see Bergmann & Sams, 2014). This approach has subsequently transformed traditional pedagogical models, enabling asynchronous delivery of instructional content outside scheduled contact hours whilst preserving classroom time for practice and enrichment.

Figure 2. 'ELSA 360-Videos' exposing and immersing tertiary students to business meetings

Complementing flipped classroom, the blended learning (or BL) framework has similarly gained considerable traction. Jeffrey, Milne, Suddaby and Higgins (2014) characterise it as a pedagogical process that eliminates time-based, physical, and situational barriers whilst simultaneously enabling direct interaction between instructors and learners. This innovative concept effectively synthesises the strengths of traditional face-to-face instruction with ICT-enhanced learning environments (Ahmad, Adnan, Azamri, Idris, Norafand & Ishak, 2019; Mohd Adnan, 2019). The methodology incorporates both online and offline learning modalities. Unlike the flipped classroom model, BL represents a category of online-facilitated education where instructors and learners engage synchronously in real-time. Instructors can facilitate discussions, collaborative idea exchange, and practical exercises. This approach reduces physical classroom interaction in favour of synchronous online discussions and digital content delivery. Such pedagogical shifts influence students' perceptions of their educational environment, positively affecting their studies and academic outcomes. Research demonstrates a strong correlation between blended learning methodologies and enhanced educational experiences.

LITERATURE REVIEW

Contemporary millennials and Generation Z have demonstrably embraced video as their preferred medium for both content creation and consumption. Video content pervades the Internet, readily accessible to diverse audiences, particularly adolescents and tertiary-level students. Educational practitioners can leverage numerous platforms as VBL resources, including YouTube, Vimeo, Netflix, and various alternatives. Consequently, VBL has been integrated into diverse pedagogical approaches, encompassing flipped classrooms, eLearning environments, open online courses, and numerous other applications. This technology has revolutionised the teaching-learning dynamic, elevating educational practices to unprecedented levels. Previously, instruction relied predominantly on traditional methodologies. Conventional lecture formats should no longer serve as the primary vehicle for knowledge dissemination. The 'chalk and talk' approach has long dominated educational practice, with many instructors continuing to depend exclusively on printed textbooks. Moreover, rote memorisation and manual notetaking represent techniques increasingly regarded as outdated. These traditional approaches share problematic characteristics: they prove tedious, monotonous, and time-consuming. VBL implementation addresses and ameliorates these deficiencies comprehensively.

Notable pedagogical and practical advantages of VBL

Educational video content has experienced remarkable growth in recent years. This expansion stems from VBL's association with engagement and student-centred principles. Additionally, most universities have adopted this in conjunction with the proliferation of advanced smartphones, smart tablets, and laptop computers. Traphagan, Kucsera and Kishi's research (2010) supports this trend, with learners characterising video lectures (VBL) as entertaining, stimulating, motivational, and pedagogically efficient. The advantages associated with VBL are substantial and continually expanding. VBL supports students in developing effective study materials and preparing for examinations. Van Zanten, Somogyi and Curro's empirical investigation (2012) demonstrated that learners predominantly utilise video lectures for revision purposes. This technology therefore serves as a valuable resource for study and review activities. Students consistently emphasise the accessibility and convenience afforded by video-based lectures.

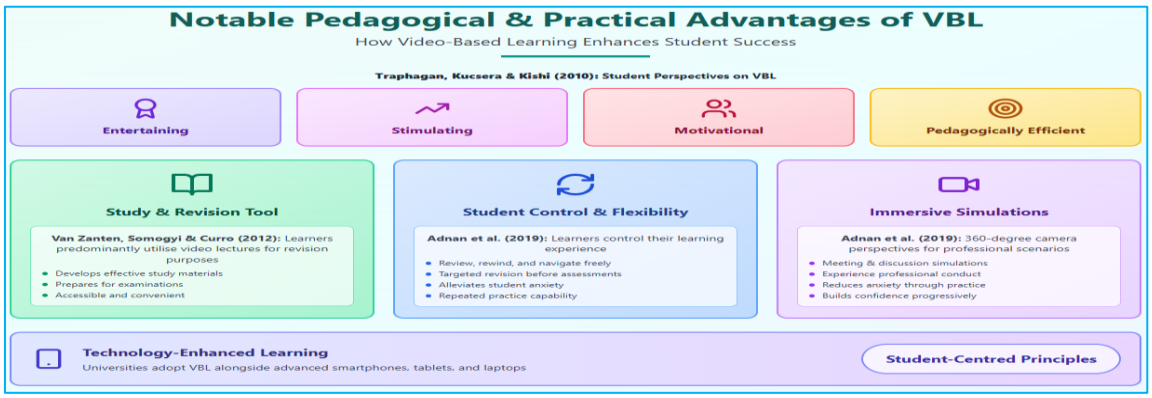

Figure 3. Enhancing the educational experience of tertiary students via VBL

Another significant advantage of VBL lies in students' ability to control their learning experience. They can readily review content, rewind segments, and navigate material according to their individual needs. These instructional videos prove particularly valuable preceding formal assessments, enabling targeted revision of specific content areas and skills whilst alleviating student anxiety. Furthermore, the capacity for repeated practice and selective content navigation represents a widely recognised benefit for tertiary students. Meeting and discussion simulations exemplify another successful application. This methodology presents scenarios through 360-degree camera perspectives, enabling students to experience and observe professional meeting conduct in an immersive manner. Through repeated practice, anxiety levels diminish whilst confidence correspondingly increases (Adnan, Ahmad, Yusof, Mohd Kamal & Mustafa Kamal, 2019). Figure 3 above highlights the strengths of VBL based on recent research.

VBL to create exposure and to lead to immersion

Educators and instructors have integrated and applied various theoretical frameworks regarding VBL implementation. These theories include collaborative learning principles, which emphasise developing, discussing, and exploring alternative perspectives. Learners cultivate problem-solving capabilities through peer collaboration, sharing viewpoints, perspectives, and activities. VBL can enhance educational processes through various mechanisms, including video summarisation. Chang, Yang and Wu (2011) observed that students extract content from video lectures by recording essential information. Subsequently, the researchers successfully developed a video summarisation platform and enabling learners to organise information whilst at the same time reducing learning time. Video-based assessments represent another practical VBL usage for pedagogical purposes. Qiao and Beling (2011) demonstrated that brief videos simulating authentic scenarios and challenges can effectively assess students, requiring them to formulate responses to presented situations. Learners must respond in real-time, selecting appropriate reactions for each scenario. This enables students to foster thinking skills and respond constructively when confronted with disruptions or distractions.

Hybrid and student-centred learning constitute two more possible VBL applications within educational contexts. The former synthesises online learning with traditional instructional methodologies, as documented by Chenail (2011). Pang (2011) conducted research employing VBL for physical education instruction, discovering that coaches or trainers could identify learners' errors, enabling subsequent reflection on these mistakes. Learners could then execute exercises correctly utilising the provided VBL resources, with most participants reporting subsequent improvement. Learners can similarly enhance their oral communication competencies through video lecture utilisation in language-based courses. Smyth (2011) reported that most VBL classes adopt student-centred approaches, with fewer than 15% remaining teacher centred. Therefore, VBL demonstrably provides opportunities for students to engage in collaboration to structure knowledge, develop understanding, and achieve consensus with peers.

VBL as part of the 'flipped classroom' initiative

As demands for more effective and comprehensive pedagogical approaches have intensified in response to globalisation, cultural transformation, and digital-age telecommunications technologies, numerous empirical investigations have focused on conceptualising flipped classroom pedagogy. One such investigation characterises the flipped classroom as an effective instructional strategy employing technology as a learning medium, specifically utilising online video resources to reduce lecture duration whilst expanding classroom time for collaborative learning through practical application (DeLozier & Rhodes, 2017). This pedagogical movement clearly emphasises instructional video technology deployment to create additional opportunities for instructors to concentrate on implementing classroom activities that assess students' comprehension of learning materials, rather than focusing exclusively on content transmission. Fundamentally, flipped classroom pedagogy aims to convert the class environment from teacher-led to learner-centred.

An alternative conceptualisation of flipped classrooms describes them as instructional models that invert the functions of lectures and conventional homework within academic courses (Bergmann & Sams, 2012). Specifically, traditional in-class lecture instruction is converted into digital video format, enabling students to review these materials beyond scheduled classroom hours. This methodology allows learners to focus on addressing persistent individual challenges rather than dedicating substantial time to lectures they may struggle

to comprehend initially. Within this framework, instructors assume facilitator roles, motivating, guiding, and providing feedback based on student performance rather than serving as the focal point of classroom interaction as in traditional methods. Responsibility consequently transitions from teachers to their students within the flipped approach. In flipped settings, students receive greater autonomy, providing them with opportunities to investigate and pose questions regarding the subject at their own speed, and according to their readiness and ability levels.

Given the flexible and adaptable characteristics of the flipped classroom approach, this learning environment proves particularly suitable and practical for language classroom implementation (Egbert, Herman & Lee, 2015). Instructors can, for instance, provide students with grammar tutorials and lessons alongside quizzes to prepare them before class sessions. Consequently, classroom time can be devoted to practicing authentic everyday language usage rather than merely learning about these elements theoretically, as occurs in traditional teaching methods. According to Reynard (2007), rather than constituting the central aspect of teaching and learning sessions, classroom instruction should function as scaffolding for language acquisition processes. As an essential component of comprehensive language learning processes, class periods should emphasise language enhancement activities such as group work or demonstration performances. By relocating explicit instruction to out-of-classroom contexts, the flipped approach has created prospects for authentic real-world exchanges during class, thereby enhancing the language learning process.

Several empirical investigations have examined the flipped approach as compared to outdated classroom methodologies. Research by Santikarn and Wichadee (2018) found that the majority of learners they studied expressed agreement that flipped classrooms provided more encouraging learning environments. Among numerous investigations favouring flipped classrooms, Moffet and Mill's study (2014) found that the flipped model proved beneficial and received good responses from most veterinary students. This finding corresponds with another comparative investigation by Chen and Chen, examining students' perspectives on cooperative learning between flipped and traditional classrooms (Chen, Wang & Chen, 2014). Additionally, two further investigations discovered evidence that flipped classrooms surpass traditional classrooms regarding teacher support, enhanced student engagement, and promotion of active learning (McLaughlin, Roth, Glatt, Gharkholonarehe, Davidson, Griffin, Esserman & Mumper, 2014; Strayer, 2012). Hung (2015), investigating the potential of the flipped approach on attitudes to learning, found that there are many benefits to students. For instance, students emerging from flipped classroom experiences were observed to demonstrate greater commitment to learning alongside developing considerably more optimism towards their learning processes compared to those in traditional classrooms.

However, Santikarn and Wichadee (2018) also acknowledged that generally favourable perspectives on flipped classrooms are not universal, as several investigations suggest alternative conclusions. For instance, despite benefiting from flipped classrooms regarding improvements in their learning and communication competencies, one investigation discovered that some students nevertheless expressed negative attitudes towards the flipped model (Ferreri & O'Connor, 2013). An additional investigation found that the majority of students and staff still preferred teacher-oriented lecture-based approaches over flipped classroom approaches for particular academic subjects (Missildine, Fountain, Summers, & Gosselin, 2013).

VBL as support for 'blended learning' methodology

Blended learning as terminology requires definition. According to Cuesta Medina (2018), blended learning deployment encompasses the application of information and communication technologies to distinctive instructional delivery modes and approaches compared with traditional learning methodologies. This perspective aligns with another investigation stating that given the widespread and ubiquitous literature on blended learning, attempting to comprehend blended learning definitions varies with each application and investigation, creating general uncertainty surrounding blended learning definition (Kanuka & Rourke, 2013). To this end, Kanuka and Rourke maintained that the approach integrates on-campus experiences with Internet learning. Given the possibilities derived from Internet-based tools and contents, implementing blended learning presents its own set of obstacles.

Regardless, current pedagogically linked blended learning definitions gravitate towards three common instructional and educational facets (Kanuka, 2001). Firstly, it functions as an instrument in educational processes, integrating Internet tools as a technology shortcut to create learning tasks. Secondly, it serves as a learning environment that employs Internet-based tools as educational platforms, for example learning management systems (LMS) such as BlackBoard or Moodle. Thirdly, it operates as a medium for education that utilises the Internet's communicative features to facilitate interactive learning experiences.

Rationale for research

The Fourth Industrial Revolution continues to exert influence on global educational landscapes, necessitating transformative pedagogical approaches that align with evolving workplace demands and societal expectations. Video-based Learning (VBL) has emerged as a pivotal instructional innovation within this transformation, offering scalable, accessible, and engaging learning experiences that transcend traditional classroom boundaries. However, empirical evidence regarding student perspectives on VBL integration remains limited, particularly within Southeast Asian tertiary contexts where educational institutions grapple with rapid digitalisation whilst preserving pedagogical effectiveness and cultural relevance. Contemporary implementations of Higher Education 5.0 technologies emphasise human-centred learning environments that leverage digital tools including AI, IoT, and immersive realities to produce customised and efficient educational experiences preparing graduates for Society 5.0 demands (Mohd Adnan et al., 2020). Within this paradigm, VBL represents a pragmatic yet powerful mechanism for delivering content that accommodates diverse learning preferences, promotes autonomous engagement, and facilitates 'just-in-time' knowledge acquisition.

This investigation examines VBL implementation across diploma and degree programs spanning Malaysia, Brunei, and Indonesia. Given that contemporary youths (Millennials and Generation Z) demonstrate advanced digital literacy alongside distinctive preferences for multimodal, technology-enhanced learning experiences (Shahroom & Hussin, 2018), understanding how these learners perceive and engage with VBL becomes imperative for educators seeking to design responsive, future-oriented curricula. Through qualitative inquiry involving tertiary students across three Southeast Asian nations, this research provides empirical insights into VBL's multifaceted role in shaping present and future higher education landscapes. Based on these considerations, a first-hand investigation was undertaken to accomplish three research objectives (RO):

RO1: How do tertiary students perceive the effectiveness of short-duration VBL (i.e., explainer videos) in developing Industry 4.0 and professional language competencies?

RO2: What are the key affordances and constraints of VBL implementation from the lived experiences of students?

RO3: How does VBL contribute to Higher Education 5.0 innovations and future oriented teaching-learning environments?

METHODOLOGY

Research design

This investigation utilised mainly two VBL-supported courses for diploma and degree students from various Malaysian colleges and universities (n=58), alongside polytechnic students from Brunei (n=10) and Indonesia (n=8). 'Thick' qualitative data (Adnan, 2013a, 2013b) were collected from 76 research participants primarily through focus group discussion sessions, supplemented by semi-structured face-to-face interviews with selected participants. The diploma-level VBL program emphasised critical skills for the workplace (related to Industry 4.0), whereas the degree-level VBL program concentrated on language competencies for professional contexts (Business English mainly). For the diploma-level program, VBL was incorporated across 10 modules with each lasting two hours with VBL comprising 10-15 minutes of actual classroom time. Regarding the degree-level program, this constituted 14-week exposure with two weekly contact hours; each week, 15-20 minutes of VBL became part of the instructional delivery strategy to prepare students for their assessments.

Research instrument

Focus group discussion (FGD or focused group interview is a valuable qualitative-oriented instrument to collect information regarding personal viewpoints on innovative ideas, challenges and solutions concerning past, present and future contexts. Focus group participants share their answers to questions within a supportive environment, and they are encouraged to share their personal and collective thoughts and ideas freely with other participants. These sessions can typically generate valuable insights and provide abundant data for qualitative researchers (Mohd Adnan, 2017).

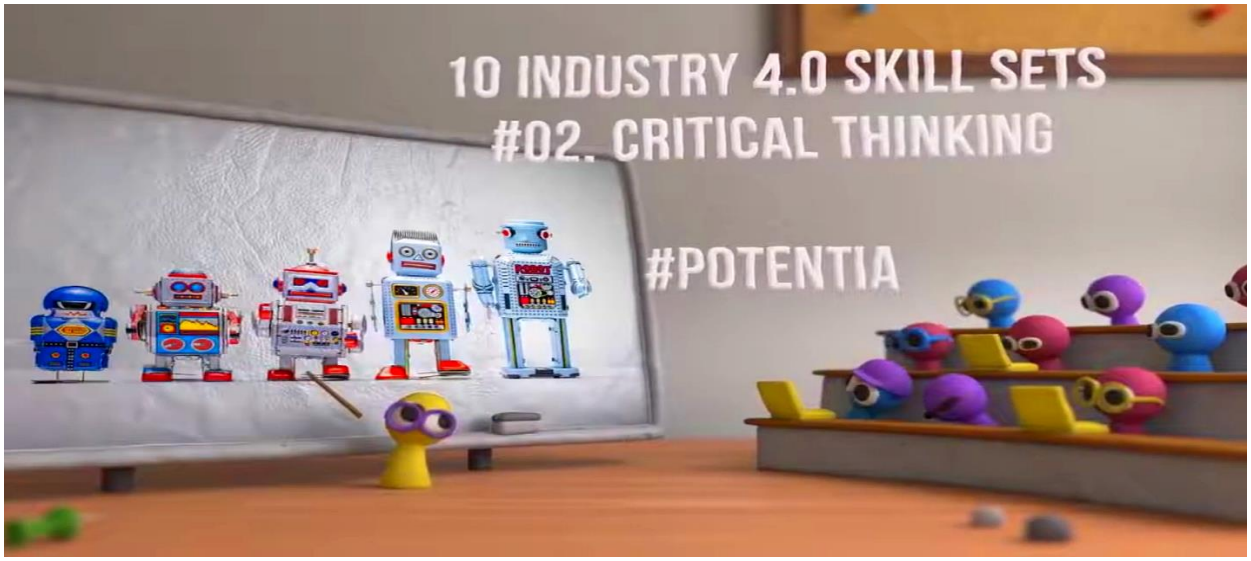

Figure 4. VBL open educational resource (OER) for Industry 4.0 exposure and immersion (sample 1)

Session summaries and field notes were gathered following each FGD session for analysis and reporting. These written records served as supplementary documentation, capturing not only the verbal exchanges but also non-verbal cues, group dynamics, and the atmosphere of each discussion session. For both FGD sessions and semi-structured interviews, data were preserved using digital recording equipment to ensure accurate verbatim transcription of all participant contributions. The audio recordings provided a permanent and reliable record to enhance the rigour and credibility of the qualitative analysis. Occasionally video clips were created to capture visual demonstrations or particularly animated discussions where facial expressions and gestures contributed meaningfully to the discussions.

Figure 5. VBL open educational resource (OER) for Industry 4.0 exposure and immersion (sample 2)

Research participants

The collection of data or fieldwork occurred from 2019 to 2021, particularly during a VBL-centred diploma course teaching critical skills for Industry 4.0 called 'Potentia IR40 ASEAN-level' (see Figures 4 and 5). The course participants constitute the majority of participants in this paper. A smaller cohort of degree students participated in a VBL-linked Business English course. These students also served as testers for a 360-degrees VR videos project that I produced and directed entitled 'ELSA 360-Videos' (as shown in Figures 1 and 2).

Data analysis

Data were transcribed based on significance. The analysis process involved constructing textual data records for the participants, coding portions of the data that are relevant to this paper, and lastly thematising the relevant data. The participants were asked to share ideas and experiences in an open manner. They agreed that the data they provided can be used for empirical analysis and also academic publication purposes whilst preserving their identities. Some quotations from the participants are presented and critically analysed in the next section.

Ethics and limitations

This research effort adhered to established ethical protocols throughout its design and implementation. All participants were fully informed about the aims and procedures before providing voluntary consent to participate. Confidentiality was maintained rigorously, with personal identifiers removed from all data sets and secure storage protocols employed in accordance with institutional guidelines. Also, the participants retained the right to withdraw from the study at any stage without consequence.

Several limitations must be acknowledged when interpreting findings. Firstly, the geographical specificity of the study context may constrain the generalisability of results to broader Higher Education 5.0 environments across different cultural and pedagogical landscapes. Secondly, the data collection occurred in the years of the recent global pandemic, a watershed moment that fundamentally transformed educational technology adoption and student engagement with video-based learning globally. The accelerated digital transition necessitated by pandemic restrictions has likely altered both learner attitudes and institutional approaches to VBL. Consequently, whilst the findings offer valuable insights into VBL adoption patterns, they should be contextualised within the specific temporal and geographical frames.

FINDINGS

This section presents the emergent themes based on the participants' voices. Pseudonyms selected by the participants themselves are employed to preserve their true identities. The themes addressed are as follows: General perceptions of VBL in higher education teaching and learning; Using VBL to learn freely and independently anytime and anywhere; and VBL as part of Higher Education 5.0 and future teaching-learning initiatives.

Perception of VBL in / for tertiary education

Overall, all participants in this research project demonstrated positive perceptions regarding the use of VBL in the education process (see Figure 6). They appreciated that VBL allows them to experience a kind of "thinking stimulation" rather than simply looking at and memorising words on paper. This suggests that the current cohort of learners who are studying at colleges, polytechnics and universities have a unique way of learning and getting knowledge compared to earlier generations of tertiary students. VBL is also perceived to be "quite cool", as an instructional delivery method that delivers skills and knowledge in short bursts. This has an advantage by appealing to the actual 'expansionist' learning style of contemporary learners where exposure and immersion to basic information is all that is needed before they expand and rebuild the knowledge in their minds.

For 'Miss Yusra', the skills needed for current tertiary students "is not just to read and memorise, but the most important thing now is to quickly learn how to build up our knowledge from simple points." This presents a significant opportunity for educators and content developers to employ VBL given that short video clips of approximately 60 seconds or at most perhaps 2 to 3 minutes can be the ideal 'package' to deliver just the very basic of information that can scaffold student learning for later (see Giannakos, Jaccheri & Krogstie, 2016). Subsequently, the responsibility falls on the shoulders of these students to expand their comprehension from the basic points, simple terms or paraphrases that are presented via the electronic medium of short video clips.

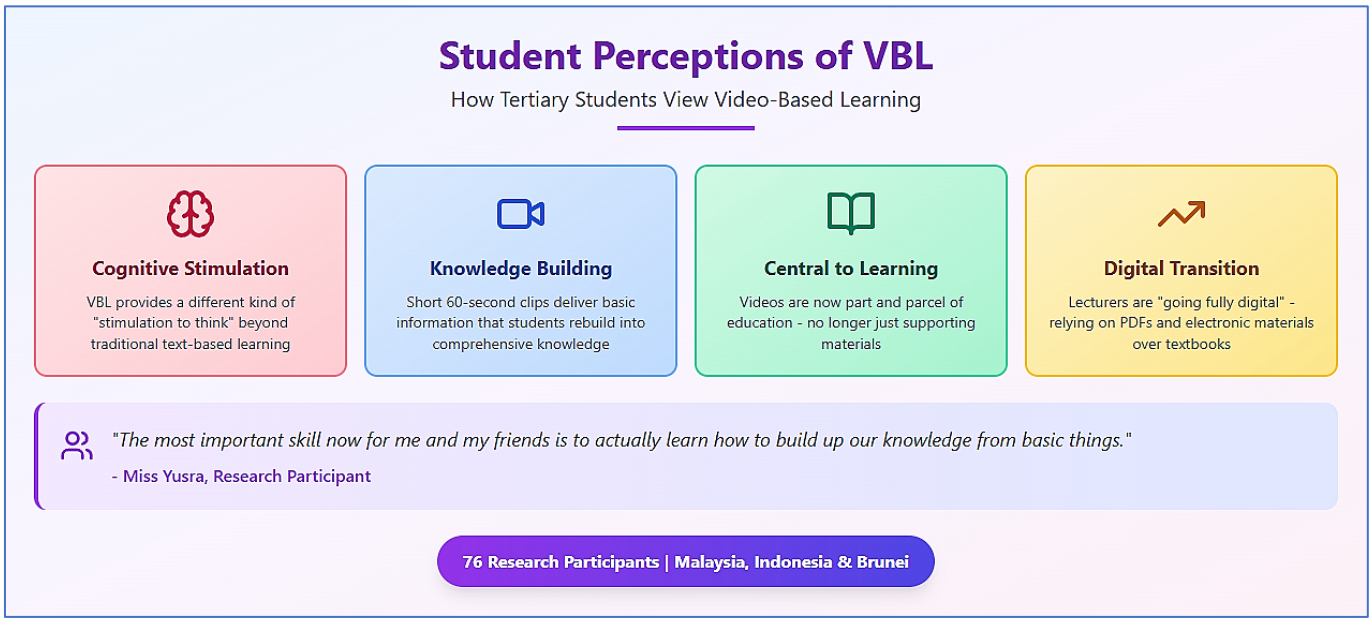

Figure 6. General perspectives of ASEAN university and college students with reference to VBL

Additionally, the participants hold the view that videos are fundamental contemporary educational resources, and they prefer to be exposed to new ideas and immersed in new skills via the medium of video. This differs from older generations of learners whereby videos are periphery to learning. Through VBL, video clips take a more central position as important instructional delivery resource. As educational videos are quite common in the here and now, they have become a central transmitter of knowledge and even skills. Indeed, for some learners at tertiary level, video clips are the only content delivery method that matters when compared to reading about the course or subject matters in their traditional textbooks. It is also important to take note that most participants indicated that presently, some of their lecturers are turning fully to digital resources during lectures or class sessions meaning that they do not rely on traditional textbooks, and only electronic resources in the form of PDF file and presentation files (e.g., PowerPoint) are distributed to their students.

VBL for "anytime, anywhere learning"

Further, the participants in this investigation acknowledged that VBL allowed them to learn anytime and anywhere that they want. This means that learning and skills acquisitions can happen even from the comfort of their own beds (interestingly, this comment was made by many female participants, indicating a future direction for researchers who are interested to know more). Undoubtedly, VBL educational resources are easily digested 'information nuggets' that can provide information and skills that can later be internalised and further expanded in the minds to their viewers (see Figure 7).

The issue of accessibility has been largely solved due to the proliferation of video sharing platforms like YouTube, Vimeo and TikTok, and even platforms that support 360-degree videos and resource intensive VR contents. To add to this, popular social networking platforms like Instagram, Facebook and Twitter also permit the sharing of videos, even high-quality ones, at the push of a button. These video distribution platforms and social networking sites are not just used for entertaining and socialising oneself, they now provide lecturers and tertiary instructors an easy and open way to share and distribute video clips for teaching and learning. Taking YouTube as an example, the comments section (or indeed any of the platforms or sites mentioned

above) can easily be used as a way to persuade students to provide constructive comments or respond quickly to whatever educational resource video that they must watch as part of their tertiary level course.

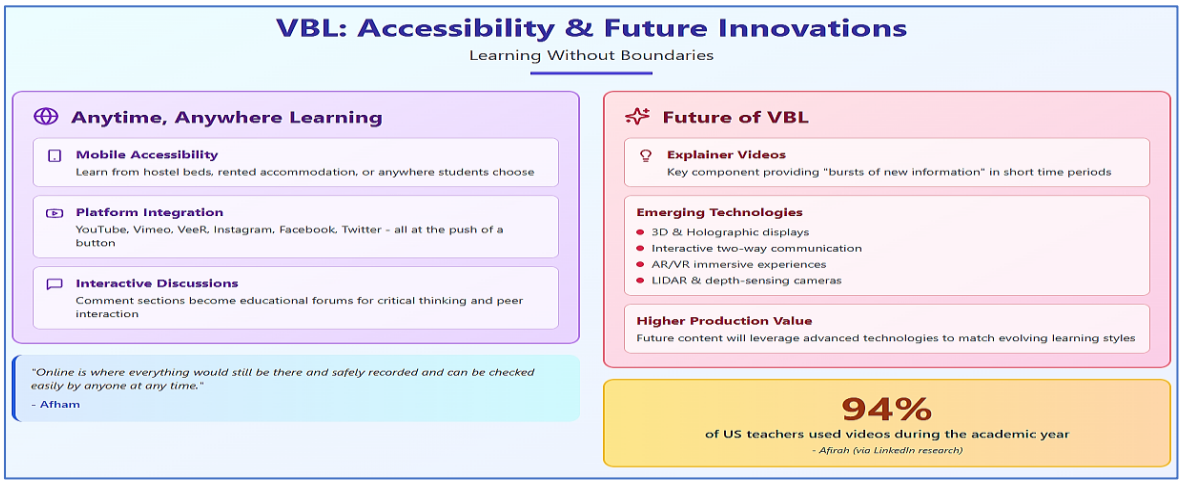

Figure 7. VBL and the critical notion of "anytime, anywhere learning"

The ability to also reply to other people's comment is a positive way to spark discussions on different topics. This is further evidence that although VBL educational resources might be seen as a fad or just insignificant resources to support learning, in truth VBL clips are beginning to take a very central role in the process of educating contemporary learners be it in schools, colleges or universities. VBL resources can also be used in such a way that whatever is uploaded onto social media sites or video sharing platforms can then be used as practice or exercise. As 'Afham' sees it:

When we say we do work online, we really go online [laughs], no need for exercise books or lots of papers in files… later we might throw them or just forget. Online is where everything would still be there safely and stuff like videos can be watched easily by anyone at any time that they want to.

VBL for 'Education 5.0' and future learning initiatives

With reference to the future of VBL, most of the participants in this empirical investigation indicated that short yet useful 'explainer videos' will become part of future learning initiatives. As 'Jessie' justifies, her friends realised that explainer videos give them "bursts of information and providing us much to learn within a short period." It is evident that these tertiary learners prefer VBL explainer videos over more traditional instructional delivery methods, for example through extended one-way instructor-led lectures. She adds, "the best thing about these [explainer] videos is that we can very easily repeat things that we watch, I can build up what I know with my notes or come up with a simpler version of what I already learned."

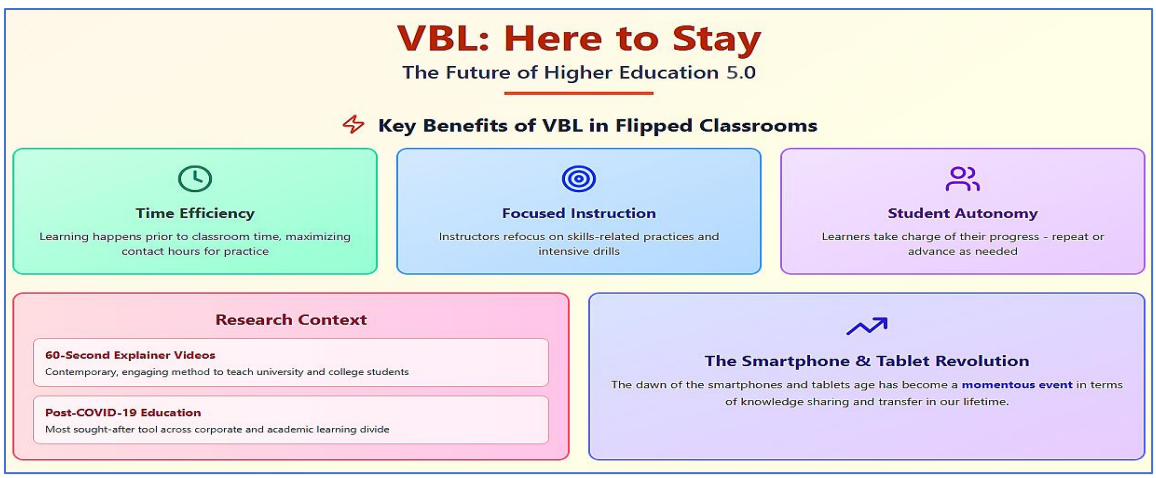

Figure 8. VBL and the critical notion of "anytime, anywhere learning"

Several participants also forecast that in future, explainer videos will become more high-tech, immersive, and fully interactive (see Figure 8). As 'Faqih' explains, "Maybe we can see 3D holograms just like in sci-fi TV series or movies [...] maybe I can talk to the video and the video can talk back. We can then interact, share and learn." What Faqih said might not be too far in the future with recent advances in depth perceptive cameras, sophisticated LIDAR sensors and highly sensitive yet affordably priced optical and video technologies coming into the consumer market. He adds: "It's not impossible because just look at all the technologies now like AR and VR, they can give reality to the videos we use to learn new things." And so, as far as video resources go, whatever their purposes are, expect to see higher production value contents being created by teachers, instructors and university professors to align with the actual learning styles of present and future generations of tertiary learners. As 'Afirah' explains:

I read on LinkedIn that 94% of teachers use videos during the USA academic year. This is amazing. I think, this is because learning with videos is effective for us students. Like what we discussed, for me it's much better than just the lecturer teaching with textbooks. It's because our brain is mainly [geared] for processing visual and video and audio stuff actually. Yes, reading textbooks is important at university I don't doubt that. But we mustn't stop future trends too, right?

DISCUSSION

This research effort is grounded in the collaborative work of my content development team to conceptualise, create, and disseminate 60-second educational 'explainer' video resources, with some extending slightly beyond this duration, designed specifically to teach university and college students in a manner that is both more contemporary and considerably more engaging than traditional textbook-based approaches. The findings presented above demonstrate that video-based learning has transcended its earlier perception as merely casual or informal learning that might cause students to waste valuable time on unproductive endeavours. Indeed, VBL resources are rapidly and undeniably becoming one of the most sought-after teaching and learning tools across both corporate and formal academic learning environments, particularly in the context of our post-pandemic world of higher education where digital transformation has accelerated exponentially. This evolution supports the core premise of providing Higher Education 5.0 exposure and immersion, whereby students are increasingly immersed in digitally mediated learning experiences that reflect the technological realities and expectations of the Fourth Industrial Revolution. The data analysis reveals that such exposure ensures students encounter pedagogical innovations that align with contemporary professional and academic demands, thereby enhancing their preparedness for future workplace environments characterised by rapid technological change and digital fluency requirements.

With particular regard to the implementation of flipped learning pedagogies within flipped classroom environments, the fundamental utility and pedagogical advantage of VBL lies in its capacity to enable and facilitate learning to occur prior to scheduled classroom time and actual contact hours with instructors. This temporal reorganisation not only saves time during face-to-face sessions but strategically allows the educational instructor to refocus their attention and pedagogical energy on more valuable skills-based tasks, hands-on applications, and intensive drills and exercises, given that students have already been exposed to the essential theoretical core of a lesson or subject matter through pre-class VBL engagement. The empirical evidence gathered from both focus group discussions and semi-structured interviews corroborates this transformation in pedagogical practice, with participants consistently highlighting the enhanced efficiency and effectiveness of contact time when foundational content has been pre-delivered through video formats.

Furthermore, and perhaps more significantly from a learner autonomy perspective, students are afforded greater responsibility and agency to learn autonomously and to take direct charge of their academic progress and intellectual development. The flexibility inherent in VBL allows learners who require further exposure or who encounter initial comprehension difficulties to easily repeat and systematically relearn the videos they have previously watched, fostering a more personalised and self-directed learning trajectory. Conversely, those who demonstrate greater confidence and mastery of the content can efficiently move forward to intensive practice, application exercises, or comprehensive revision activities without being constrained by the pace of traditional classroom instruction. This differentiated approach to learning, facilitated by VBL technologies,

addresses diverse learning needs and preferences within heterogeneous student populations more effectively than one-size-fits-all pedagogical models.

Based on the data presented and analysed above, it becomes abundantly clear that the smartphones and tablets age has constituted a momentous and transformative event in terms of knowledge acquisition, dissemination, and transfer within our current and future educational landscape. The ubiquity of mobile devices has fundamentally altered not only how students access information but also their expectations regarding the format, delivery, and accessibility of educational content. This technological shift necessitates corresponding adaptations in pedagogical approaches, with VBL representing a natural and logical response to these evolving learner expectations and capabilities.

CONCLUSION

Video-based learning is demonstrably here to stay as a permanent feature of modern pedagogy, and the holistic experience of learning through videos will quite likely become progressively more interactive, immersive, personalised, and engaging in the immediate and foreseeable future. This research has illuminated the multifaceted benefits of VBL within tertiary education contexts, demonstrating its effectiveness in supporting flipped classroom methodologies, enhancing learner autonomy, and facilitating more efficient use of instructor contact time. The transition towards video-mediated learning represents not merely a technological upgrade but a fundamental reconceptualisation of how knowledge can be transmitted, accessed, and internalised within Higher Education 5.0 frameworks. The findings underscore the critical importance of institutional investment in high-quality video content development and the professional development of academic staff in creating and integrating such resources effectively within their pedagogical repertoires. As universities and tertiary institutions continue to navigate the evolving landscape of digital education, VBL stands as a cornerstone technology that bridges traditional academic rigour with contemporary student expectations and technological capabilities. The promise of Higher Education 5.0 is fulfilled through sustained exposure to innovative digital pedagogies and genuine immersion in technologically enhanced learning environments that prepare tertiary-level students for an increasingly digitalised professional world.

Moreover, the implications extend beyond immediate pedagogical concerns to encompass broader questions of educational equity, accessibility, and inclusivity. Video-based resources, when designed thoughtfully and deployed strategically, possess the potential to democratise access to high-quality educational content, transcending geographical and temporal barriers that have historically constrained learning opportunities. As institutions continue to refine and expand their VBL offerings, attention must remain focused on maintaining academic integrity, ensuring content quality, and supporting diverse learner needs within increasingly heterogeneous student populations. Looking forward, the trajectory of VBL within Higher Education 5.0 appears both promising and inevitable. The convergence of technological advancement, pedagogical innovation, and evolving learner expectations suggests that video-mediated learning will continue to occupy a central position within tertiary education ecosystems. Institutions that embrace this transformation thoughtfully, investing in quality content development whilst maintaining focus on sound pedagogical principles, will be best positioned to serve the educational needs of contemporary and future student cohorts in an increasingly digital and interconnected world.

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