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Are We Teaching How They Learn? Implementing the VARK Model in the Development Management Programme

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ABSTRACT

This study explores the need to align teaching methods with diverse learning preferences in Development Management Programmes at higher education institutions. It addresses the mismatch between traditional pedagogies and varied learner styles, which can hinder engagement and academic performance. A descriptive study involving 68 first-year students at a Malaysian university employed the VARK questionnaire and qualitative analysis using Taguette software. The VARK Model categorises learning styles into four main preferences: Visual (learning by seeing), Auditory (learning by hearing), Read/Write (learning through text), and Kinesthetic (learning by doing). It helps educators and students identify their preferred method of processing information to improve teaching and learning effectiveness. Findings revealed a strong preference for visual and kinesthetic learning styles, with students favouring interactive, in-person activities over lectures or online formats. Morning classes were preferred, and learners expressed a commitment to active participation. They also emphasised the importance of clear, engaging instruction delivered in Malay. Notably, students showed enthusiasm for applying knowledge creatively, especially through collaborative projects aimed at developing innovative solutions in development management. This reflects a desire to move beyond theory and produce practical, impactful outcomes. The study concludes that integrating multimodal teaching strategies based on the VARK model such as interactive exercises and morning scheduling can foster inclusive and effective learning environments. The impact includes enhanced engagement, improved comprehension and retention, greater academic satisfaction, and valuable insights for educators to tailor instruction. Ultimately, this approach supports more adaptive, innovation-driven outcomes in development management education.

Keywords: Development Management Programme, Higher Learning Institutions, Innovation, Learners' Preferences, VARK Model

1. INTRODUCTION

Learners exhibit a wide range of learning styles, each unique in how they absorb and process information. Some learners respond best to visual stimuli such as images, diagrams, and videos, while others thrive through reading and writing activities that allow them to engage with text. Some learners learn effectively through auditory means, such as listening to lectures, participating in discussions, or listening to audio recordings. Additionally, a significant number of learners benefit most from kinesthetic learning, which involves hands-on activities, practical exercises, and interactive classroom experiences.

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Given this diversity, it is crucial for educators to recognise and adapt to the varying learning preferences of their learners. By doing so, they can enhance the effectiveness of their teaching strategies, foster more profound understanding, and create a more inclusive and supportive learning environment (Sayed Munna & Kalam, 2021).

By purposefully blending VARK-oriented instructional approaches in teaching and learning, overall educational performance can be substantially elevated by recognising the individual learning preferences of learners (Fleming & Mills, 1992; Mohamad et al., 2019). The VARK model, an abbreviation representing the fundamental learning modalities of Visual, Auditory, Reading or Writing, and Kinesthetic, functions as an extensive framework for both understanding and addressing the diverse learning styles that individuals may exhibit. By precisely crafting educational journeys to match these varied predilections, instructors are positioned to nurture more dynamic, engaging, and ultimately impactful learning contexts that enhance deeper insight (Alkhasawneh et al., 2008). This perspective not only generates meaningful improvements in educational success and achievement benchmarks but also contributes to a considerable surge in student satisfaction, active engagement, and natural motivation for acquiring knowledge (Cuevas, 2015; Pashler et al., 2008). This approach can lead to more effective and inclusive educational experiences, as it aligns teaching methods with individual student needs, thereby improving engagement and academic performance (Ismail et al., 2023). The integration of the VARK model in the Development Management Programme can be particularly beneficial in creating a dynamic and adaptive learning environment that fosters more profound understanding and skill acquisition.

Therefore, this study aims to address the predominant learning preferences of first-year development management learners, as defined by the VARK model and to identify and analyse the learning styles of these learners by administering the VARK questionnaire. Further, this study also aims to increase the interest of the students in innovation.

Within this broader scope, the paper presents and discusses the findings from a VARK survey conducted with a cohort of 68 first-year development management learners at a higher learning institution in Malaysia. The concluding section offers practical recommendations to enhance the relevance and compatibility of Development Management Programmes. By disseminating these insights, the study aims to equip educators better to adopt pragmatic and practical pedagogical approaches, tailoring the educational and training contexts of development management studies to the demonstrated learning preferences of their learners. By doing so, educators not only personalise the learning experience but also actively contribute to the development of students' innovation skills, empowering them to think creatively, solve problems independently and adapt to the evolving demands of the modern world.

2. LITERATURE REVIEW

Implementing the VARK model in teaching and learning can significantly enhance learning outcomes by tailoring teaching methods to individual preferences. Studies have shown that personalised learning activities based on VARK profiles lead to better student performance and engagement (Kothaneth et al., 2011; Silva et al., 2019). Impact of VARK on Learning Outcomes Research indicates that learners who engage in activities tailored to their VARK learning profiles achieve higher academic performance compared to those who follow standardised instructional methods. For instance, a study on Systems Analysis and Development courses demonstrated that learners who participated in VARK-based activities performed better in assessments than their peers who did not

(Silva et al., 2019). This suggests that the VARK model can effectively address diverse learning needs, thereby improving comprehension and retention.
The integration of technology with the VARK model further enhances learning outcomes. Tools like tablet PCs and Learning Management Systems (LMS) have been found to support various learning styles effectively. These technologies provide interactive and adaptable learning environments that cater to individual preferences, leading to improved student engagement and academic success (Kothaneth et al., 2011; Silva et al., 2019). The use of multimedia and interactive modules can also expand the range of teaching strategies, making learning more accessible and effective for all learners (Mohanta & Mandal, 2019). Tools like the WileyPLUS LMS, which adapt to individual learning needs, have shown significant improvements in student performance compared to traditional (Silva et al., 2016) lecture methods. This indicates that the technology-enhanced VARK model can be particularly effective in Development Management Programmes.

Outcome-Based Education (OBE) frameworks can be aligned with the VARK model to set clear learning objectives and measure student performance. The OBE Web Application, for example, allows educators to design and monitor learning outcomes that align with educational standards, ensuring that instructional activities meet the diverse needs of learners (Hongsuwan et al., 2022). By incorporating VARK principles into OBE, educators can create more personalised and effective learning experiences that enhance overall educational quality.

Despite the benefits, implementing the VARK model in Development Management Programmes poses challenges, such as the need for extensive faculty training and the adaptation of existing curricula. Educators must be equipped with the skills to identify learning styles and design instructional activities that are tailored to meet individual needs. Professional development programmes and participatory visual methods can help teachers rethink their practices and effectively integrate VARK principles into their teaching (Alva et al., 2018).

2.1 Understanding VARK Learning Styles

Visual (V): Visual learners prefer to use images, diagrams, and spatial understanding to process information. They benefit from visual aids such as charts, graphs, and maps, which help them organise and communicate information effectively (le Roux, 2014; Saleem et al., 2015; Winarti et al., 2021). In fields like engineering graphics, enhancing spatial visualisation abilities is crucial, and visual learners excel in environments where visual resources are used to encourage critical thinking and creativity (le Roux, 2014; Sadowski et al., 2006). Visual learning styles are dominant among learners, particularly in technical and scientific education, where the ability to visualise complex concepts is essential (Sadowski et al., 2006; Saleem et al., 2015; Winarti et al., 2021). In a study involving nursing learners, those with a visual learning style showed significant improvement when taught using conceptual maps, highlighting the importance of matching teaching methods to learning styles (Amaniyan et al., 2020).

Auditory (A): Auditory learners benefit from listening to lectures, discussions, and audio materials. They prefer to receive information through listening and often find it easier to understand and retain information when it is presented verbally (Prithishkumar & Michael, 2014). Auditory learning styles are common among learners, and incorporating auditory elements into teaching can enhance comprehension and retention (Cole, 2022). For example, auditory learners may perform better in tasks that involve listening and reading comprehension measures (Shetty et al., 2020). In online education, auditory learners may also benefit from audio recordings and discussions to engage with the material effectively (Saleem et al., 2015).

Reading/Writing (R): Reading/Writing learners excel through reading and writing tasks, such as essays and reports. They prefer to interact with text-based information and often use reading and writing as primary methods for learn (Prithishkumar & Michael, 2014) Integrated reading-writing instruction can enhance the development of both skills, making connections between reading and writing visible and supporting higher-order literacy skills. These learners benefit from strategies that involve extensive reading and writing activities, which help them process and retain information effectively.

Kinesthetic (K): Kinesthetic learners prefer hands-on experiences and learning through doing. They engage best with physical activities that allow them to apply the course content actively (Goldweber, 2011; Wood & Sereni-Massinger, 2016). Kinesthetic learning activities, such as roleplay, gaming, and reality-based scenarios, promote active learning and engagement, especially in online environments where traditional hands-on experiences may be limited (Califf, 2020). These learners show improved understanding and recollection of material when they can physically interact with the content, making kinesthetic learning a valuable approach in subjects that benefit from experiential exercises (Saehana et al., 2021). Table 1 represents four main learning styles of the VARK Model, which are the Visual, Aural (Auditory), Read/Write and Kinesthetic. Each learning style is explained by the description, learning method and examples.

Table 1 Learning Style of the VARK Model

Learning Style	Description	Learning Methods	Examples
Visual (V)	Learns best through seeing	Diagrams, charts, maps, graphs, symbols	Mind maps, flowcharts, and infographics
Aural/Auditory (A)	Learns best through listening	Lectures, discussions, audio recordings	Podcasts, group discussions, oral presentations
Read/Write (R)	Learns best through reading and writing	Text-based input and output	Lists, essays, manuals, and reading textbooks
Kinesthetic (K)	Learns best through doing and touching	Hands-on activities, simulations, and real-life examples	Experiments, role-playing, and field trips

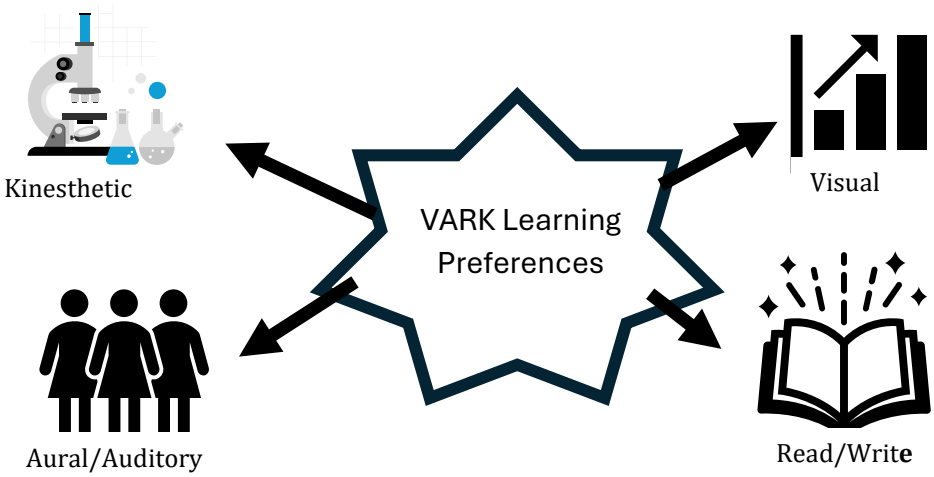

Figure 1. Learning Style of VARK Model

Figure 1 represents the VARK learning preferences, which categorise individuals based on how they best absorb and process information. It highlights four types of learners, which are Visual, Aural/Auditory, Read/Write and Kinesthetic.

2.2 Integration of VARK Learning Styles in Fostering Innovation

Innovation often arises from diverse perspectives and the ability to engage with information in multiple ways. By addressing different learning styles, VARK integration can stimulate creativity and critical thinking. Those who utilise instructional aids in ways that suit their distinct learning approaches commonly display a notably greater tendency to engage in the educational community. As an illustration, learners who classify themselves as kinesthetic, signifying that their optimal learning occurs via physical movement and tactile interactions, gain considerable advantages from engaging in practical activities that permit direct manipulation of materials, in contrast to learners identified as visual, who typically excel and deepen their understanding through diagrams, illustrations, and multimedia formats like videos (Pham, 2024; Rizki et al., 2024).

Such significant engagement with the material not only enhances a more profound relationship with the subject matter but also holds the potential to incite the emergence of innovative and creative ideas as these learners probe the complexities of concepts and scrutinise them with considerable depth and analytical thoroughness.

The VARK model, which emphasises the importance of recognising and honouring the diverse learning styles that exist within individuals, naturally fosters stronger collaboration among students. When learners understand how they learn best, they are more likely to contribute meaningfully in group settings. For example, those who identify as auditory learners often thrive when leading discussions, using their listening and speaking strengths to guide conversations and deepen group understanding. Meanwhile, kinesthetic learners tend to shine in hands-on tasks, often stepping up to design and carry out experiments, bringing energy and practicality to the learning experience. This kind of integrative approach does not just make learning more engaging, but it creates a lively, inclusive environment where creative ideas and innovative solutions can flourish. As Wege & Michelle (2020) point out, such settings are especially powerful in nurturing the kind of dynamic thinking that education should aim to inspire.

By applying the VARK framework, adaptive e-learning platforms are able to deliver content in ways that align with each learner's unique preferences, whether they absorb information best through visuals, listening, reading, or hands-on activities. This kind of personalised learning experience does not just improve academic performance, but it also gives students the confidence to explore new ideas and experiment creatively within the learning styles that feel most natural to them (Ahmed et al., 2024; Manzoor et al., 2021).

The integration of the VARK model into e-learning systems can provide personalised content that aligns with individual learning preferences, leading to improved academic performance and innovation in problem-solving (Pantho & Tiantong, 2015). Therefore, assessing learners learning styles plays a crucial role in determining how well they grasp and apply innovative concepts. By understanding how each learners prefer to engage with information, whether through visuals, listening, reading, or hands-on experience, educators can tailor their teaching strategies to better support creative exploration and deeper mastery.

3. METHODOLOGY

The study was conducted at one of Malaysia's higher learning institutions, focusing on first-year learners enrolled in the Development Management Programme at the School of Government. A total of 68 learners participated in the study. It was conducted in the classroom through the distribution of questionnaires to learners during the first class of Semester A241. The participating learners came from diverse backgrounds in terms of religion, ethnicity, age, and academic qualifications. The data collected were analysed descriptively to gain an overview of the learners' learning patterns using the VARK model.

Based on the results obtained, Figure 2 shows that 55 respondents (80.9%) are female learners and 13 (19.1%) are male learners.

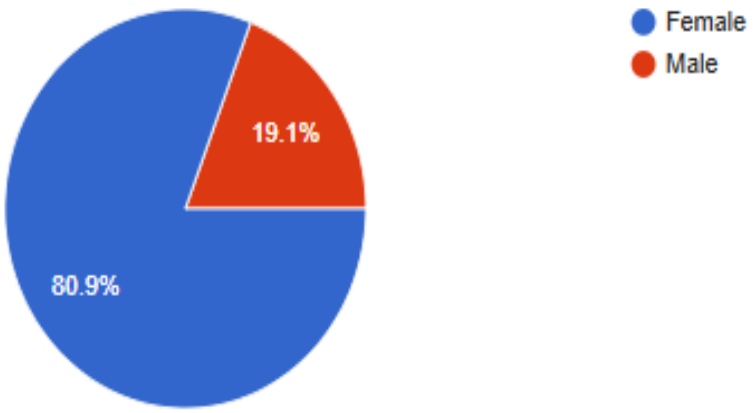

Figure 2. Gender of the Respondents

Figure 3 comprises 63 Malay respondents (92.6%), 3 Chinese respondents (4.4 %), 1 Siamese respondent (1.5%) and 1 Bugis respondent (1.5%). Therefore, it is apparent that the majority of the respondents were Malay respondents. No Indian respondents were recorded in the survey.

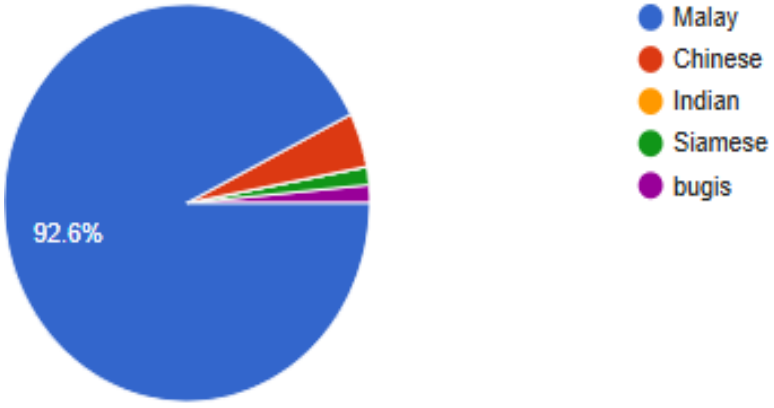

Figure 3. Race of the Respondents

4. RESULTS AND DISCUSSION

Based on the data collected through the survey, the following are the results of the study.

4.1 Learning Style

Research indicates that learners generally support learning through visual strategies. A total of 39 learners (57.4%) identified as visual learners, revealing that they absorb information more fully when presented with graphs, charts, maps, and diagrams. 19 respondents (27.9%) preferred kinesthetic learning, which emphasises experiential methods that incorporate tactile participation and the use of various materials. Nine respondents (13.2%) preferred to acquire knowledge through auditory learning. Although the data about reading-based learning, characterised as the process of learning through reading and analysing text, were not explicitly quantified in percentages, it was acknowledged as a category, suggesting that it may represent either the least favoured option or a subset of other learning styles. In summary, this distribution underscores a pronounced preference for visual and experiential learning modalities among the student population in higher learning institutions, as illustrated in Table 2.

Table 2 Learning Style

Learning style	No. of Learner
Audio (learning through listening)	9
Kinesthetic (learning by doing, touching or manipulating materials)	19
Reading (learning by reading and analysing words)	1
Visual (learning by utilising graphs, charts, maps, diagrams, etc)	39
Total	**68**

4.2 Learning Method Preferences

Based on the data collected, the learning method preferences among learners in higher learning institutions show a strong inclination towards interactive or in-person activities. A majority of 38 respondents (55.9%) preferred in-class activities, such as group discussions, games, and role-playing. This was followed by a preference for traditional lecture or face-to-face instruction, which was favoured by 24 respondents (35.3%). Online learning methods were less popular, with synchronous (real-time) online learning preferred by only 6 respondents (8.8%). The data for asynchronous (not real-time) online learning was listed as a category, but no percentage was provided in this dataset. Overall, the results indicate a clear preference for engaged and collaborative learning environments over traditional passive lectures or fully online formats, as illustrated in Table 3.

Table 3 Learning Method Preferences

Learning Method Preferences	No. of Learner
Activities in class, e.g., group discussion, games, roleplay	24
Online learning (Synchronous - Real-time)	6
Traditional lecture (Face-to-face)	38
Total	**68**

4.3 Learning Time

Based on the provided data, preferences for learning times among learners show a distinct trend towards morning schedules. A total 32 learners (47.1%) preferred morning classes held between 8:30 am and 11:30 am. This is followed by 9 learners (13.2%) who identified as early morning learners, preferring study sessions between 5:00 am and 7:00 am. Preferences for afternoon classes (1:00 pm to 6:00 pm) were 7 learners (10.3%), while 20 learners (29.4%) preferred midnight study sessions between 12:00 midnight and 3:00 a.m. The results indicate that a strong majority of learners (76.5%), favoured morning learning hours, as illustrated in Table 4.

Table 4 Learning Time Preferences

Learning Time Preferences	No. of Learner
I am a midnight person (12midnight-3am)	20
I am an early morning person (5am-7am)	9
I like afternoon classes (1pm-6pm)	7
I like morning classes (8.30am-11.30am)	32
Total	**68**

4.4 Learners' Commitment to Their Educators

The qualitative data comprised two sections, one of which focused on learners' commitment to their instructors during lectures. To analyse the responses, the data were extracted using Taguette, a reliable web-based qualitative analysis tool that can be accessed at https://app.taguette.org/.

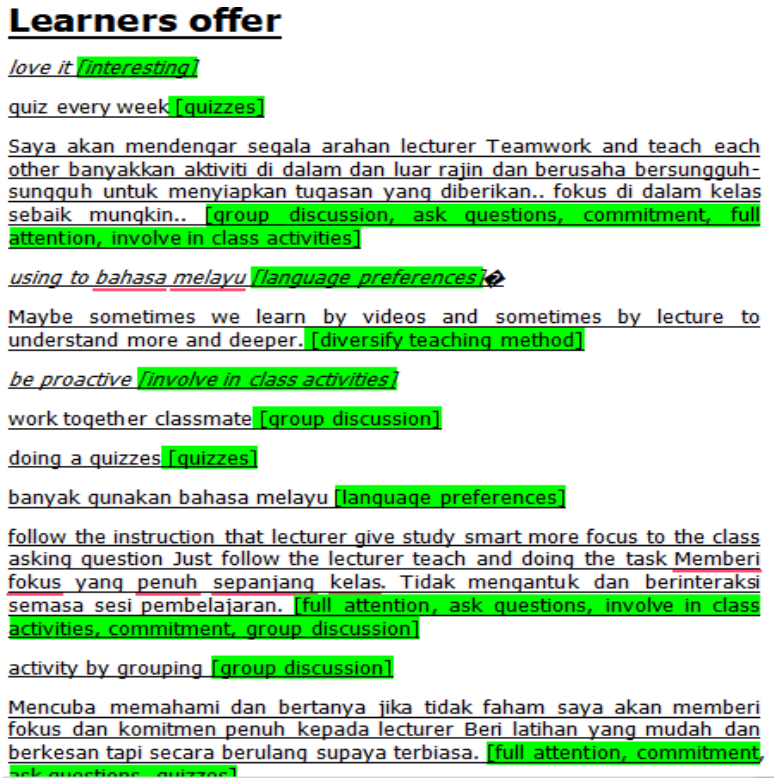

Figure 4. Learners' Commitment

Based on the data extracted using Taguette, learners' commitments to their educators during class were ranked and summarised as follows (see Figure 4). The most frequently mentioned commitment was giving full attention, which was highlighted 14 times. This was closely followed by involvement in class activities (13 mentions) . The third most common response was a general sense of commitment itself (9 mentions). Other notable commitments included making the class interesting (7 mentions) and asking questions (7 mentions). Learners also expressed a willingness to participate in quizzes (5 mentions) and achieve good results (4 mentions). Additional responses pointed to commitments such as teamwork, peer teaching, following instructions, being proactive, collaborating with classmates, using the Malay language, and staying alert to avoid drowsiness.

Therefore, based on the result obtained, these responses indicate a strong emphasis by learners on active participation, attentiveness and interactive engagement to support their educators in making the subject more engaging. The contributions and commitments demonstrated by learners are essential in enhancing the overall teaching and learning process.

4.5 Learners' Expectation Towards Their Educators

Based on the qualitative data extracted using Taguette, learners' expectations of their educators during class can be ranked by frequency of mention. The most frequent expectation was for the class to be interesting (11 mentions). This was closely followed by language preferences, specifically the use of Malay language (10 mentions). The third most common expectation was for understandable teaching and learning (9 mentions). Learners also frequently expected a sporting educator (8 mentions), a clear explanation (6 mentions), and diversified learning styles (5 mentions). Additional expectations included achieving good grades (3 mentions), and fun learning (1 mention), as illustrated in Figure 5.

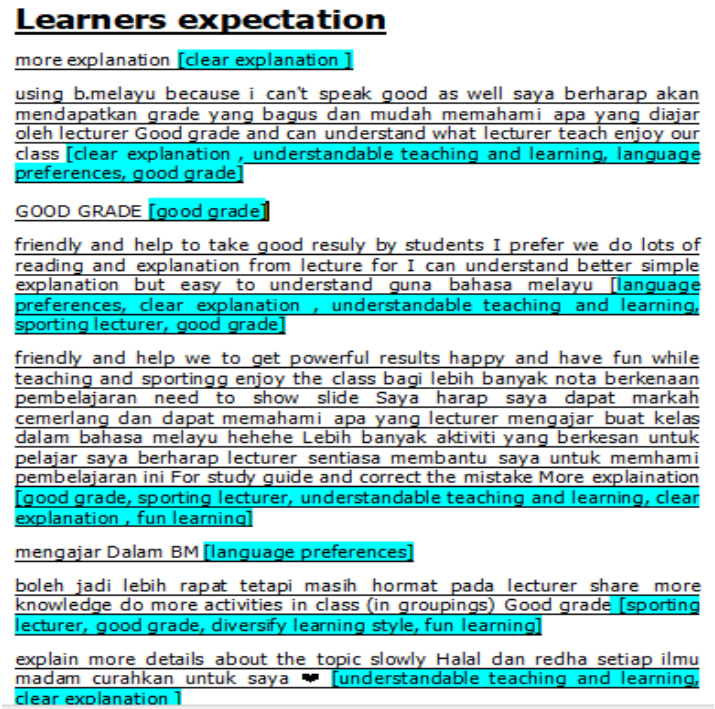

Figure 5. Learners' Expectation

Qualitative responses further elaborate on these expectations, emphasising a desire for educators to teach in the Malay language for better comprehension, provide detailed and slower explanations, foster a friendly yet respectful relationship, use effective activities and slides, share more knowledge, and create a fun and engaging classroom environment. The results indicate that learners prioritise clarity, engagement, cultural-linguistic accessibility, and academic support from their educators.

4.6 Summary of the Results

Based on the data extracted through the survey, the results can be summarised follows:

Learners exhibited a strong preference for visual and kinesthetic learning styles, indicating a need for teaching methods that incorporate diagrams, hands-on activities, and interactive elements. Therefore, there is an apparent demand for active and interactive classroom environments. A majority of learners preferred in-class activities, such as group discussions and games, which significantly outweighed their preferences for traditional lectures or online learning formats. Further, educators also need to give full attention to learners' learning time. Learners tend to show a significant inclination towards morning schedules. Combined, learners preferred learning between 5:00 am and 11:30 am, suggesting that scheduling key classes in the morning could align better with student concentration and energy levels. Learners were primarily committed to engaging through full attention and active involvement in class activities. This commitment was supported by their expressed willingness to ask questions, participate in quizzes, and work collaboratively to support their educators. The top expectations from educators were for classes to be interesting and delivered in a language that is easily understood, particularly Malay. Learners also highly valued clear explanations and a supportive educators, highlighting a need for clarity, accessibility, and engaging delivery. The results present picture of learners who are engaged and committed to learning but have specific preferences for how that learning is facilitated. They thrive on interaction, visual and hands-on learning, morning classes, and clear, interesting instruction delivered in a linguistically accessible manner. Catering to these preferences could significantly enhance learning effectiveness and student satisfaction. From an innovation perspective, learners demonstrated a strong desire to engage in creative processes within development management education. Through collaborative learning in development management courses, they were able to work alongside peers to generate new ideas and co-create innovative products, applying their knowledge in meaningful and practical ways.

These findings are summarised in Figure 6, which illustrates the model of learners' learning style preferences.

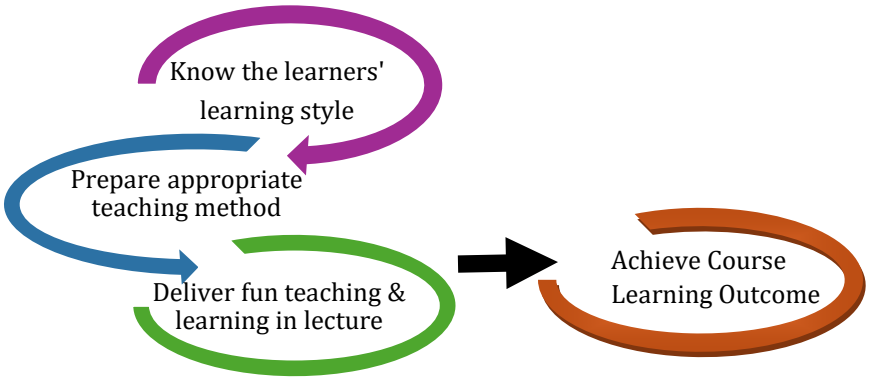

Figure 6. Model for Learners' Learning Style Preferences

5. CONCLUSION

The VARK model is a powerful approach to creating effective and inclusive learning environments. By understanding and addressing the diverse learning styles of learners, educators can enhance learning outcomes and ensure that all learners have the opportunity to succeed. The key principles of identifying learning styles, incorporating diverse teaching strategies, promoting multimodal learning and providing continuous feedback and assessment are essential in achieving this goal. Incorporating the VARK model into development management programmes can significantly enhance learning outcomes by catering to individual learning preferences. The integration of technology and outcome-based frameworks further supports personalised learning, leading to improved learner engagement and academic success. A well-integrated approach to teaching and learning has the power to significantly enhance learners' knowledge, deepen their understanding, and spark genuine interest in pursuing innovation within the learning process. When instructional methods are thoughtfully aligned with learners' needs and styles, they create a more engaging and supportive environment that encourages curiosity, creativity, and the confidence to explore new ideas. However, successful implementation requires comprehensive faculty training and ongoing curriculum development to address the diverse needs of learners.

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