Last-Minute Learners: A Cross-Semester Study on Cramming Vs. Consistent Learning Strategies in Accounting Education

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ABSTRACT

This study explores the impact of learning consistency versus cramming on academic performance among final-year undergraduate students enrolled in the *Accounting Theory and Practice (ATPB)* course. Data from 86 students across two consecutive semesters (2024/2025) were analyzed using carry marks and final examination scores. Students were categorized into two groups: consistent learners (minimal variation between assessments) and cramming learners (significant final exam improvements). Descriptive statistics and standard deviation were applied to measure performance consistency. The findings reveal that students with steady engagement across the semester consistently outperformed their counterparts who relied heavily on final examinations. The results underscore the importance of sustained academic effort and continuous assessment in achieving better overall performance. This study contributes to accounting education literature by emphasizing the pedagogical value of consistent learning strategies, offering empirical evidence for curriculum designers and educators to promote formative assessments that support long-term academic achievement.

Keywords: Learning consistency, Academic performance, Accounting education, Assessment patterns, Higher Education, Malaysia

INTRODUCTION

Globally, effective learning strategies are essential in promoting academic success, particularly in professional disciplines such as accounting. Among these strategies, distributed learning, where students engage consistently with course material throughout the semester, has been shown to be more effective than cramming or intensive last-minute studying (Carpenter et al., 2022; Yan et al., 2022). Studies have consistently found that steady engagement enhances long-term retention, critical thinking, and deeper conceptual understanding (Kang, 2016; Zhou & Wang, 2024). Despite these findings, students frequently rely on cramming due to academic pressure and assessment structures that prioritize high-stakes examinations (Afify et al., 2023). Recent studies in Southeast Asia further confirm that this reliance on massed practice is compounded by cultural emphasis on examination success and institutional grading policies that reward short-term performance over sustained effort (Nguyen & Pham, 2024; Abdul Rahman et al., 2025).

In the Malaysian context, accounting education has evolved significantly from the aspirations outlined in Halatuju 3 to the current framework of Halatuju 4, *The Future Direction of Accounting Programme in Malaysia*. Halatuju 3 emphasised producing technically competent graduates with strong professional knowledge and skills to meet industry demands, with assessment structures largely centred on examination performance and technical mastery (MOHE, 2015). Halatuju 4 builds upon this foundation but places greater emphasis on developing critical thinking, ethical decision-making, adaptability, and lifelong learning (MOHE, 2022). A notable shift in Halatuju 4 is the movement away from predominantly examination-focused assessment towards more holistic and continuous evaluation of student capabilities. This transition is intended to align with global best practices and address the changing expectations of employers in the digital era. While this paradigm shift is well-documented in policy discourse, empirical evidence examining its classroom-level impact, particularly the comparative outcomes of consistent engagement versus reliance on final examinations, remains limited in

Malaysian higher education. This is especially true for accounting programmes, where summative exams have historically dominated the assessment landscape (Lim et al., 2023).

Although several recent studies have explored related factors such as student motivation, assessment type preferences, and the influence of digital learning environments on engagement (Abdul Wahab et al., 2025; Chong & Loo, 2024), few have quantitatively classified and compared engagement patterns over multiple semesters within the same course. In particular, there is a paucity of research that uses objective performance metrics to differentiate between learners who maintain steady scores across coursework and examinations and those whose performance peaks only at the final exam. This gap is critical, as such patterns are frequently observed in Malaysian classrooms yet rarely examined through a systematic, data-driven approach.

This study aims to fill this gap by analysing student performance data from the Accounting Theory and Practice (ATPB) course at Universiti Tenaga Nasional (UNITEN) across two semesters in 2024/2025. By comparing carry marks (coursework) and final exam scores, students are classified into two main groups: consistent learners and cramming learners. The objectives are:

1. To assess the prevalence and academic impact of consistent versus cramming learning strategies.
2. To evaluate whether consistent learners achieve higher final grades compared to cramming learners.
3. To support the policy direction of Halatuju 4 by providing empirical evidence for the effectiveness of continuous assessment.

The study contributes to the accounting education literature by emphasising the pedagogical value of steady engagement and supports the national agenda to develop accounting graduates who are not only technically proficient but also engaged, ethical, and prepared for complex problem-solving. By integrating empirical findings with Malaysia's evolving higher education policy framework, this research also offers practical insights for educators and curriculum designers seeking to align classroom practices with the transformative aspirations of Halatuju 4.

LITERATURE REVIEWS

Learning Strategies in Higher Education

Learning strategies have long been the subject of inquiry in the field of educational psychology. Among the most prominent strategies are distributed practice (often referred to as consistent learning) and massed practice (commonly known as cramming). Distributed practice refers to learning that is spread over time, involving regular study habits and reinforcement of knowledge across multiple sessions. In contrast, massed practice involves intensive studying concentrated in a short time frame, usually just before an assessment (Cepeda et al., 2006).

The spacing effect, originally identified by Ebbinghaus and later confirmed through multiple meta-analyses (Dunlosky et al., 2013), supports the superiority of consistent learning for long-term retention. Recent research by Betakan (2024) among accounting undergraduates in emerging economies supports that spaced and structured study positively influences academic outcomes. Fedajev et al. (2024) further reinforced the effectiveness of consistent engagement, especially in online and hybrid learning settings.

Assessment Culture in Accounting Education

Accounting education has traditionally emphasised summative assessments, with heavy reliance on final examinations to determine students' academic outcomes. This structure, while effective in standardised evaluation, often encourages surface learning approaches rather than deep learning engagement (Jackling & De Lange, 2009).

Ismail and Abidin (2022) demonstrated that continuous assessment, such as carry marks and coursework, significantly improves academic achievement and supports conceptual mastery. Yet, the potential influence of such structures on the adoption of consistent versus cramming strategies remains underexplored within Malaysian accounting education.

Empirical Evidence on Consistency vs. Cramming

Empirical comparisons between consistent learners and crammers highlight significant differences in performance, critical thinking, and knowledge retention. Weinstein et al. (2011) found that students who engaged consistently with course materials throughout the semester scored higher in application-based assessments.

Tan and Norazah (2021) discovered that consistent participation in formative assessments was a stronger predictor of final performance than last-minute exam preparation among Malaysian undergraduates. However, limited research has specifically examined this dynamic among Malaysian accounting students, especially within structured courses across semesters.

Malaysian Context, Gen Z Learning Styles, and Halatuju 4

Malaysia's Halatuju 4: Future-Proofing Accounting Graduates initiative advocates for outcome-based education, digital adaptability, and continuous engagement as pillars for future-ready graduates (Malaysian Institute of Accountants [MIA], 2021). This aligns with Gen Z's learning preferences, flexible schedules, digital integration, fast feedback, and learner autonomy.

Recent studies confirm Gen Z students favour bite-sized, engaging content through tech-enabled platforms (Jamaluddin et al., 2025; Buzzetto-Hollywood, 2024). In the Malaysian context, learners also leverage informal learning via social media and mobile tools (Khair, 2025; Ishak et al., 2022), which may either complement or compete with traditional academic engagement models.

Research Gap and Justification

While studies globally and regionally support the effectiveness of consistent learning strategies, a gap remains in understanding how these strategies influence academic outcomes among Malaysian accounting students. There is insufficient empirical evidence on whether consistency in coursework translates into higher final grades, especially across semesters. Moreover, the influence of Gen Z learning styles and assessment structures on engagement patterns has not been systematically examined in accounting education.

This study aims to address these gaps by evaluating consistency versus cramming behaviours among ATPB students across two semesters. The findings are expected to inform teaching strategies and assessment policies aligned with Halatuju 4's aspirations.

Self-Regulated Learning (SRL) Theory

This study is underpinned by Self-Regulated Learning (SRL) Theory, which conceptualises learning as a proactive process in which students plan, monitor, and regulate their cognition, motivation, and behaviour to achieve academic goals (Zimmerman, 1989; Zimmerman & Moylan, 2009). Within this framework, consistent learners reflect high SRL competence, engaging regularly with course content and maintaining steady performance, whereas cramming learners display lower SRL engagement, relying on intensive short-term preparation that often fosters surface rather than deep learning. Empirical evidence from Malaysian and Southeast Asian contexts demonstrates that SRL strategies, including distributed practice, self-testing, and effective time management, are significant predictors of academic achievement, particularly in continuous assessment environments (Abdul Wahab et al., 2025; Nguyen & Pham, 2024). The transition from Halatuju 3's examination-centric emphasis to Halatuju 4's holistic and continuous assessment framework further aligns with SRL principles, promoting sustained engagement and learner autonomy essential for preparing future-ready accounting graduates.

METHODOLOGY

This study employed a quantitative descriptive research design to examine the relationship between students' engagement patterns, classified as *consistent*, *cramming*, or *coursework-heavy*, and academic performance in the *Accounting Theory and Practice (ATPB) in the Malaysian Context* course. The dataset encompassed two consecutive semesters of the 2024/2025 academic session and comprised 86 undergraduate accounting students at Universiti Tenaga Nasional (UNITEN): Semester 1 (n = 32) and Semester 2 (n = 54).

Secondary data were retrieved from the official course database, including gender, coursework scores (carry marks), final examination scores, final grades, and attendance percentages. Data management and statistical analyses were conducted using Microsoft Excel, which facilitated descriptive statistical analysis, group categorisation, and cross-semester comparison. While the use of secondary data reduces the potential for self-reporting bias (Johnston, 2017), it presents inherent limitations such as dependency on existing institutional records, potential omission of contextual factors, and restrictions in variable selection (Smith & Rodríguez, 2023). These constraints can affect the depth of analysis and limit generalisability beyond the studied population (Heaton, 2021). To enhance reliability, all datasets were verified against original assessment records, and anomalies or missing values were cross-checked with course instructors before inclusion in the analysis, as recommended in educational data mining practices (Siemens & Baker, 2022).

To classify learning engagement styles, students were grouped into three mutually exclusive categories based on the difference between their coursework scores (carry mark) and final examination scores:

Table 1: Operational definitions for student engagement categories based on coursework–final examination score differences

Category	**Rule**
Consistent	Final Exam is within ±10 marks of Carry Mark
Cramming	Final Exam is more than 10 marks higher than Carry Mark
Coursework-heavy	Final Exam is more than 10 marks lower than Carry Mark

The ±10-point threshold was adapted from established cognitive psychology and education research benchmarks, which have utilised similar margins to distinguish performance stability from significant divergence (Dunlosky et al., 2013; Tan & Norazah, 2021). This operationalisation enables robust behavioural segmentation and supports empirical comparison of learning patterns across semesters.

RESULT & DISCUSSION

Students enrolled in the *Accounting Theory and Practice in the Malaysian Context* (ATPB) course across two semesters of the 2024/2025 academic session were categorised into three engagement patterns: consistent, coursework-heavy, and cramming. Classification was based on the difference between coursework marks (carry marks) and final examination scores, following established approaches in educational psychology (Dunlosky et al., 2013; Tan & Norazah, 2021). A total of 86 students were analysed: 32 in Semester 1 and 54 in Semester 2.

Table 2. Summary of Engagement Categories by Semester

Semester	**Category**	**N**	**Avg Carry Mark**	**Avg Final Exam**	**Avg Attendance**
Sem 1 2024/2025	Consistent	6	88.05	82.21	97.02%
Sem 1 2024/2025	Coursework-heavy	26	88.96	67.40	97.94%
Sem 2 2024/2025	Consistent	15	85.14	83.45	92.14%

Sem 2 2024/2025	Coursework-heavy	37	86.69	66.51	96.06%
Sem 2 2024/2025	Cramming	2	62.00	74.62	78.57%

In Semester 1, coursework-heavy learners constituted the majority (81.25%), followed by consistent learners (18.75%), with no crammers identified. In Semester 2, coursework-heavy learners remained dominant (68.52%), but the proportion of consistent learners increased to 27.78%, and a small proportion (3.70%) were classified as crammers.

Descriptive results reveal clear performance differences. Consistent learners maintained high and stable performance in both coursework (85.14–88.05) and final examinations (82.21–83.45), coupled with strong attendance (92.14–97.02%). Coursework-heavy students, while performing well in coursework (86.69–88.96), recorded substantial declines in final exam scores (66.51–67.40), suggesting weaker knowledge retention and lower exam preparedness. Crammers, although achieving higher exam scores relative to coursework (74.62 vs. 62.00), had the lowest attendance (78.57%), indicating reliance on short-term memorisation strategies.

A one-way ANOVA confirmed that differences in final exam performance between the three categories were statistically significant, $F(2, 83) = 9260.40$, $p < 0.001$, underscoring the performance advantage of consistent learners over other groups.

These patterns align with the spacing effect (Cepeda et al., 2006; Dunlosky et al., 2013) and are consistent with recent evidence that distributed learning enhances academic performance in higher education, including accounting contexts (Betakan, 2024; Fedajev et al., 2024; Abdul Wahab et al., 2025). The results also support Self-Regulated Learning (SRL) theory (Zimmerman, 2002), which emphasises that proactive strategies, goal setting, strategic planning, self-monitoring, and self-reflection are critical for sustained academic success. Consistent learners appear to demonstrate all three SRL phases (forethought, performance, self-reflection), whereas crammers compress learning into shorter cycles, limiting deep comprehension (Panadero, 2017; Dent & Koenka, 2016; Phan et al., 2023).

The findings also resonate with Gen Z learning literature, which notes a preference for continuous feedback, bite-sized content, and digital flexibility (Jamaluddin et al., 2025; Buzzetto-Hollywood, 2024; Wardi, 2025). Such preferences align naturally with consistent engagement strategies, while cramming contradicts this learning rhythm.

Importantly, the proportion of consistent learners increased from Semester 1 to Semester 2, suggesting gradual adoption of sustained engagement practices. This shift aligns with Halatuju 4's policy direction towards holistic and continuous assessment (MOHE, 2022) and supports recent calls for embedding formative assessment into accounting curricula to drive higher-order skills (Ismail & Abidin, 2022; Tan & Norazah, 2021; Hussin et al., 2023).

However, the underperformance of coursework-heavy learners in final examinations indicates a possible misalignment between the design of continuous assessments and the cognitive demands of summative evaluation. This reflects a transitional challenge from Halatuju 3's exam-focused paradigm (MOHE, 2015) to Halatuju 4's broader competency framework. Addressing this alignment could ensure that continuous assessment not only fosters engagement but also equips students for high-stakes assessments.

CONCLUSION

This study investigated the relationship between student engagement patterns, specifically consistency, coursework-focused learning, and cramming, in relation to academic performance in the Accounting Theory and Practice (ATPB) course across two semesters. The results indicate that students who maintained consistency between coursework and final examination scores demonstrated more stable academic outcomes. This supports the theoretical premise that distributed learning contributes to improved academic achievement and aligns with the pedagogical direction of continuous engagement. In contrast, students who performed well in coursework but poorly in final examinations highlight a potential disconnect between formative and summative assessment

readiness. Although limited in number, students identified as crammers showed reasonable exam performance but lacked overall academic balance.

Despite these insights, several limitations must be acknowledged. The study focused on a sample of 86 undergraduate students from a single institution, which may restrict the generalisability of the findings. The cramming group consisted of only two students, making it difficult to draw robust conclusions about this strategy. Furthermore, the study relied exclusively on secondary quantitative data, which does not capture individual learning behaviours, motivational factors, or time management practices. The criteria for categorising learning patterns were based on score differentials, which may not fully reflect the complexity of student engagement or contextual influences such as subject difficulty or assessment design.

Future research should consider expanding the sample size and institutional scope to validate these findings in diverse educational settings. A mixed-methods approach incorporating surveys or interviews could provide richer insights into students' learning motivations, preferences, and challenges. Longitudinal studies may also uncover whether consistent engagement predicts long-term academic and career success. Additionally, curriculum designers are encouraged to explore interventions such as spaced learning modules, reflective activities, and formative assessment strategies that reinforce sustained engagement throughout the semester. These measures would support the aspirations of Malaysia's Halatuju 4 framework, which advocates for adaptive, engaged, and future-ready accounting graduates.

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