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Enhancing student participation through a structured tracking and scoring system in tutorial classes

Haidy Henry Dusim[1]

[1]*Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA, Sabah Branch, Malaysia*

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ABSTRACT

Student participation in tutorial classes remains a persistent challenge in higher education, particularly in contexts where cultural norms and fear of negative evaluation discourage voluntary verbal engagement. This paper presents the design, theoretical basis, and initial implementation of a Structured Participation Tracking and Scoring System (SPTSS) in tutorial classes at a Malaysian public university. The study involved 77 undergraduate students enrolled in four tutorial groups under the course PAD321 at Universiti Teknologi MARA Kota Kinabalu. The system awards transparent, criterion-referenced points for observable participation behaviours including question-answering, peer discussion, task completion, and peer teaching. Drawing on active learning theory, self-determination theory, and gamification research, the SPTSS was developed around three core principles: transparency, fairness, and immediacy of feedback. Initial observational findings from Week 1 of implementation reveal encouraging trends, with 51 of the 77 students (66.2%) recording positive participation scores in their first tracked session. Preliminary evidence suggests that the system promotes more equitable participation, reduces reticence among previously silent students, and improves overall dynamics of tutorial sessions. Implications for tutorial pedagogy and future research directions are discussed.

1. INTRODUCTION

Active participation in tutorial classes is widely recognised as a cornerstone of quality higher education. The tutorial format is designed to be small-group, dialogic, and student-centred, and it depends

[1*]Corresponding author. *E-mail address*: haidy302@uitm.edu.my

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fundamentally on voluntary student engagement to achieve its pedagogical aims (Simon et al., 2024). Despite this, passive attendance remains a common phenomenon in university tutorials worldwide, with a significant proportion of students choosing to remain silent rather than contribute to class activities (Tenglet, 2023; Wansink et al., 2023).

This challenge is particularly pronounced in Malaysian and broader Southeast Asian higher education contexts, where collectivist cultural norms and hierarchical classroom traditions may reinforce student reticence (Mahruf et al., 2024). Research consistently shows that fear of negative evaluation, defined as the apprehension associated with being negatively judged in a social situation, is among the most powerful inhibitors of student participation across cultural settings (Downing et al., 2022; Araghi et al., 2025). When students perceive the potential social cost of being wrong as exceeding the academic benefit of contributing, silence becomes a rational default.

Structured accountability mechanisms, understood as systems that make student participation visible, consistently measured, and consequential, have been explored as a means of mitigating this dynamic. Transparent participation grading, point-based tracking, and formative feedback strategies have each demonstrated efficacy in raising both the frequency and quality of student contributions (Márquez et al., 2023; Simon et al., 2024). More recently, research on gamification in education has reinforced the motivational value of point-based systems, showing that even modest extrinsic incentives can shift classroom norms toward greater engagement when thoughtfully designed (Zeng et al., 2024; Gkika et al., 2024).

This paper presents the Structured Participation Tracking and Scoring System (SPTSS), developed and piloted at Universiti Teknologi MARA Kota Kinabalu in the PAD321 (Public Administration) course, and implemented across four tutorial groups involving a total of 77 undergraduate students. Section 2 reviews the relevant literature on student participation, barriers to engagement, accountability mechanisms, and gamification. Section 3 describes the research methodology, including research design, data collection procedures, and analytical approach. Section 4 describes the design and principles of the SPTSS. Section 5 outlines the implementation context. Section 6 presents preliminary observations. Section 7 offers discussion and implications, and Section 8 concludes with directions for future research.

2. LITERATURE REVIEW

2.1 The importance of student participation in tutorial settings

Class participation is a multidimensional construct encompassing behavioural, cognitive, and emotional dimensions of student engagement (Fredricks et al., 2004). In the tutorial context specifically, behavioural engagement manifested through verbal contributions, question-asking, peer interaction, and task completion is of primary concern, as it is both observable and directly tied to the interactive aims of small-group instruction.

Research consistently links active participation with improved academic achievement, deeper conceptual understanding, and the development of higher-order thinking skills (Márquez et al., 2023).

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Márquez et al. (2023) identified class participation as encompassing preparation before class, attendance, contribution to discussions, and frequent small tasks, all of which serve as evidence of student engagement with course content. Tao and Chen (2024) further confirmed this through a meta-analysis that teacher-student verbal interaction is significantly associated with academic achievement, underscoring the bidirectional value of participatory classroom dynamics. In tutorial classes, where the instructor-to-student ratio is lower and dialogue is expected, students' failure to participate represents a particularly significant pedagogical problem. When students attend but remain silent, tutorials effectively devolve into passive learning experiences, undermining the rationale for their provision (Simon et al., 2024).

2.2 Barriers to participation

A substantial body of research has documented the barriers that prevent students from participating voluntarily in higher education classrooms. Fear of negative evaluation is consistently identified as the dominant barrier, defined as the apprehension of being judged unfavourably by peers or instructors when making verbal contributions (Downing et al., 2022). Studies conducted in active-learning science courses found that fear of negative evaluation causes students to overthink their responses and frequently choose non-participation over engagement (Downing et al., 2022).

In Asian educational contexts, these barriers are compounded by culturally embedded deference to authority and the legacy of lecture-centred pedagogy, which frames silence as an expression of respect rather than disengagement (Araghi et al., 2025; Mahruf et al., 2024). Research in Chinese universities has found that social anxiety, particularly anxiety about being negatively evaluated by peers or instructors, significantly predicts classroom silence, with collectivist interpersonal norms reinforcing avoidance behaviours (Liu et al., 2025). Araghi et al. (2025) found that in a transnational engineering programme, the fear of making mistakes (56%) and low confidence in public speaking (51%) were the most frequently cited barriers to participation, consistent with literature on English-medium instruction in Asian educational settings.

Additional barriers include unclear expectations about what participation entails and the absence of structured incentives to engage. Where students perceive participation as optional and not formally assessed, they are less likely to invest effort in it (Márquez et al., 2023). The presence of subjective or opaque grading criteria for participation has also been shown to reduce motivational salience (Simon et al., 2024).

2.3 Structured accountability and formative assessment

Structured accountability mechanisms, understood as systems that make participation visible and consequential, have been widely explored as interventions to promote student engagement. Formative assessment practices, including participation grading, in-class quizzes, and structured discussion protocols, have demonstrated efficacy in increasing both the frequency and quality of student contributions (Márquez et al., 2023).

Simon et al. (2024) reviewed current approaches to assessing class participation in both physical and virtual spaces. They noted that technology-enabled formative assessment with organised point collection systems has emerged as an effective approach for tracking and rewarding student effort. They observed that assessing participation not only documents engagement but also functions as a signal to students that their

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contributions are valued and consequential, thereby increasing the motivational stakes of tutorial attendance.

Critically, Márquez et al. (2023) found that the clarity and transparency of participation grading criteria are significant moderators of the motivational effect. When students understand precisely how their participation is being assessed, they report reduced anxiety and greater willingness to contribute. This finding is consistent with cognitive evaluation theory, which holds that feedback enhances intrinsic motivation when it is informational rather than controlling (Deci & Ryan, 2000).

2.4 Gamification in higher education

Gamification, understood as the application of game design elements such as points, badges, and leaderboards to non-game educational contexts, has gained substantial traction in higher education as a strategy for improving student motivation and engagement (Deterding et al., 2011). A comprehensive meta-analysis of studies published between 2008 and 2023 by Zeng et al. (2024) found a consistent positive relationship between gamification and academic performance, engagement, and motivational outcomes across diverse educational levels and disciplines.

A systematic review of gamified learning strategies by Caballero-Hernández et al. (2023), following PRISMA 2020 methodology and analysing 40 studies, confirmed that game elements such as points and rankings are among the most widely used components in educational gamification and have a positive influence on student motivation to learn; however, the authors note that long-term effects may diminish over time as novelty effects dissipate.

Gkika et al. (2024) examined gamification in a statistics tutorial context, finding that a points-based system increased student engagement in pre-lecture activities, with sustained effects observed across two academic years. Similarly, Guo et al. (2025), in a randomised controlled trial examining the combined effects of points, badges, and challenges, found that gamified platforms enhanced cognitive, emotional, and motivational learning outcomes compared to control conditions.

Within the Malaysian higher education context, recent empirical work has directly examined the impact of gamification point systems on student classroom performance. A study conducted at a Malaysian public university across multiple academic semesters found that the introduction of a gamification point system was associated with a significant shift in grade distribution toward higher achievement categories, with the proportion of students earning the highest grades increasing markedly after implementation (Saleem & Mirza, 2024). The authors attribute this effect to gamification's capacity to increase learning motivation and foster intrinsic enthusiasm for study.

From a theoretical standpoint, gamification in education is most commonly grounded in self-determination theory (Deci & Ryan, 2000), which posits that motivation is optimised when three basic psychological needs are satisfied: competence, autonomy, and relatedness. Points-based systems, when designed to reward effort rather than solely to correct it, address the need for competence by ensuring all students have a realistic pathway to a reward. Peer interaction components address the need for relatedness, while student control over when and how to contribute addresses autonomy (Zeng et al., 2024; Sciandrone et al., 2025).

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3. METHODOLOGY

3.1 Research design

This study adopts a Design-Based Research (DBR) approach (also referred to as educational design research), which is particularly suited to the development, implementation, and iterative refinement of educational interventions in authentic classroom settings (Anderson & Shattuck, 2012; McKenney & Reeves, 2018). DBR is characterised by its dual focus on solving practical pedagogical problems while simultaneously generating theoretical insights, making it appropriate for the present study, which aims both to address the problem of student reticence in tutorial classes and to contribute to the literature on participation assessment and gamification in higher education. Within the DBR framework, the current paper reports on the first cycle of implementation, which focuses on the design rationale, initial deployment, and preliminary observation of the SPTSS. Subsequent cycles will involve systematic data collection, analysis, and refinement of the system based on empirical feedback.

3.2 Data collection procedures

Data for this study were collected through two primary means. First, structured instructor observation was conducted during each tutorial session using the SPTSS participation tracking spreadsheet (see Appendix A). The tracking sheet recorded individual student participation scores in real time against the criterion-referenced rubric described in Section 4. This yielded a systematic record of participation frequency and type for each of the 77 students across all four tutorial groups during Week 1 of implementation. Second, informal post-session observations were recorded by the instructor as field notes documenting student reactions, verbal enquiries about the scoring system, and observable changes in session dynamics. These field notes serve as qualitative supplementary data complementing the quantitative participation scores.

It is acknowledged that the current study only reports the data from the first week of implementation. Pre-implementation baseline data on participation rates, while not formally collected using a standardised instrument before the current study, are informed by the instructor's accumulated teaching experience across prior semesters in the same course, which consistently indicated low voluntary participation rates in tutorial sessions. A formal pre- and post-implementation survey instrument measuring student participation anxiety and perceived engagement is planned for the subsequent cycle of this DBR study, which will enable direct pre-post comparison and stronger causal inference.

3.3 Observation protocols

To ensure systematic and consistent recording of participation, a structured observation protocol was established before implementation. The protocol defined observable participation behaviours operationally (see Table 1 in Section 4) and specified the point values associated with each behaviour. All scoring decisions were made by the instructor in real time during tutorial sessions using the standardised rubric. To reduce observer bias, the following procedural safeguards were employed: (a) scoring criteria were operationally defined in advance and applied consistently across all four groups; (b) the same instructor conducted and scored all four tutorial groups, ensuring evaluator consistency; and (c) participation scores were recorded immediately during each session rather than retrospectively, minimising recall bias. It is acknowledged that single-observer scoring introduces a risk of observer bias that cannot be fully eliminated

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without inter-rater reliability procedures. Future cycles of this DBR study will incorporate a second observer for a subset of sessions to establish inter-rater reliability coefficients and strengthen the trustworthiness of observations.

3.4 Analytical procedures

The analytical approach for the current paper is primarily descriptive. Participation scores recorded in Week 1 were aggregated at the group level to produce participation rates, defined as the proportion of students in each group who recorded a score greater than zero in the first tracked session. These rates are reported in Table 2 in Section 6. Qualitative field notes were analysed thematically, with themes identified inductively from the instructor's observations of student behaviour and session dynamics. Findings are presented as preliminary observational evidence and are explicitly framed as illustrative rather than confirmatory. Inferential statistical analysis will be applied in subsequent cycles when longitudinal participation data across the full 14-week semester are available.

4. SYSTEM DESIGN: THE STRUCTURED PARTICIPATION TRACKING AND SCORING SYSTEM (SPTSS)

4.1 Design principles

The SPTSS was developed around three core pedagogical principles derived from the literature on effective participation assessment (Márquez et al., 2023; Simon et al., 2024):

(i) Transparency**.** All scoring criteria are communicated to students at the commencement of the semester via the course syllabus and an explicit in-class briefing. Students understand exactly which behaviours earn points and how points are aggregated toward their final grade.

(ii) Fairness**.** The system rewards effort and engagement, not only correct answers. All students, regardless of academic ability, have equal opportunities to earn participation points by attempting to answer questions, contributing to discussions, or completing in-class tasks.

(iii) Immediacy**.** Scores are recorded during each session and communicated to students at regular intervals. This immediacy of feedback strengthens the reinforcement effect and maintains motivational salience across the semester.

4.2 Scoring criteria

Participation points are awarded for the following observable classroom behaviours, recorded by the instructor using the participation tracking sheet during each tutorial session:

Table 1. SPTSS Scoring Rubric

Participation Behaviour	Points Awarded
Answering a question (correct)	3 points
Answering a question (attempted, incorrect)	1 point
Contributing to group discussion	2 points
Completing an in-class task on time	2 points
Asking a relevant question	2 points

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Peer teaching or explaining to classmates	3 points

The differentiated point values reflect the relative cognitive and social effort associated with each behaviour. Peer teaching and correct answers receive the highest reward, while attempted answers receive a minimum baseline reward to reduce fear of being wrong. This design choice directly addresses the barrier of fear of negative evaluation identified in the literature (Downing et al., 2022).

4.3 Assessment integration and weighting

Participation scores are compiled across all tutorial sessions and contribute to the student's overall course grade. A weighting of 10 to 15 per cent of the total course mark is recommended, sufficient to motivate engagement without placing undue evaluative pressure on students. This weighting is consistent with practices recommended in the literature on participation grading in higher education (Márquez et al., 2023).

4.4 Tracking tools

The SPTSS was implemented using a structured participation tracking spreadsheet, a sample of which is reproduced in Appendix A. The tracking sheet records student names, student identification numbers, and weekly participation scores across 14 tutorial weeks, with a running total column updated after each session. The template is designed to be accessible to instructors with minimal technical resources, requiring only a standard spreadsheet application for implementation.

5. IMPLEMENTATION CONTEXT

The SPTSS was implemented in tutorial classes for the course PAD321 (Public Administration) at Universiti Teknologi MARA Kota Kinabalu, Sabah, Malaysia. UiTM is a Malaysian public university with a mission to provide higher education access to the Bumiputera community, with a strong emphasis on professional and administrative disciplines. The Faculty of Administrative Science and Policy Studies, within which the current study is situated, delivers programmes in public administration, policy studies, and related fields.

The study involved 77 undergraduate students enrolled in four tutorial groups, designated PAD3215G1 through PAD3215G4. Group 1 comprised 15 students, Group 2 comprised 21 students, Group 3 comprised 21 students, and Group 4 comprised 20 students. These group sizes are consistent with typical tutorial group configurations at Malaysian public universities and are considered conducive to interactive small-group instruction. Tutorial sessions were conducted weekly to supplement the course's main lecture component. Each session lasted approximately 50 to 60 minutes. In terms of demographic composition, all 77 participants were undergraduate students enrolled in the same academic year and the same Bachelor's degree programme within the Faculty of Administrative Science and Policy Studies, taking PAD321 as a core course requirement. Detailed demographic data such as age and gender were not formally collected as part of this study, as the focus of data collection was on participation behaviour rather than individual learner characteristics; this is acknowledged as a limitation in Section 7.3.

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Students were informed of the SPTSS during the first tutorial session of the semester. The scoring rubric (Table 1) was distributed and explained clearly, with particular emphasis placed on the fact that attempted answers, even if incorrect, would earn a participation point. This framing was deliberately adopted to reduce fear of negative evaluation and to signal that the system rewards effort rather than solely academic correctness, consistent with recommendations in the participation assessment literature (Downing et al., 2022; Márquez et al., 2023).

Regarding research ethics and consent, no separate consent procedure was required as the SPTSS was implemented as part of normal instructional practice within the author's own tutorial classes, consistent with standard pedagogical activity rather than a separate research intervention requiring participant recruitment. Students were informed at the outset of the semester that their participation would be tracked and scored as part of the course assessment, and continued enrolment and attendance in the tutorial constituted implied consent to this standard instructional practice. No identifiable student data beyond aggregate participation scores are reported in this manuscript, and individual student records (as in Appendix A) are anonymised by student identification number for this publication.

The instructor maintained a participation tracking spreadsheet during each session, recording individual student contributions against the established criteria in real time. The spreadsheet was structured to record weekly scores across 14 tutorial weeks, enabling cumulative running totals to be monitored and communicated to students at biweekly intervals throughout the semester.

6. PRELIMINARY OBSERVATIONS

While formal data collection and analysis are ongoing, initial observations from the first week of SPTSS implementation across all four tutorial groups reveal several encouraging trends. These observations are qualitative and instructor-based; they are offered here as preliminary evidence to inform the system's theoretical framing and to provide a basis for future empirical investigation.

6.1 Overall first-week participation rates

Across all four tutorial groups, a total of 51 out of 77 students (66.2%) recorded positive participation scores in Week 1. Table 2 presents a breakdown of first-week participation rates by group.

Table 2. Week 1 Participation Rates by Tutorial Group

Tutorial Group	Total Students	Students with Score > 0 (W1)	Participation Rate (%)
Group 1 (PAD3215G1)	15	7	46.7%
Group 2 (PAD3215G2)	21	14	66.7%
Group 3 (PAD3215G3)	21	18	85.7%
Group 4 (PAD3215G4)	20	12	60.0%
Total	77	51	66.2%

Group 3 recorded the highest first-week participation rate at 85.7%, with 18 of 21 students earning scores above zero. Group 1 recorded the lowest rate at 46.7%, with 7 of 15 students participating. Week 1

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individual scores ranged from 0 to 5 points across all groups, with higher scores achieved by students who answered questions correctly or engaged in peer explanation activities.

6.2 Increased voluntary participation

Across all four tutorial groups, students who had previously remained silent during instructor questioning made attempts to answer during the first SPTSS-tracked session. The awarding of one point for attempted answers, regardless of correctness, appeared to reduce the reticence typically associated with fear of being wrong. This is consistent with literature indicating that when evaluation criteria explicitly reward effort, students perceive the cost of participation as meaningfully reduced (Downing et al., 2022; Araghi et al., 2025).

6.3 Greater equity in participation

The tracking sheet facilitated the instructor's ability to identify students who had not yet contributed and to direct questions toward them in a structured and non-threatening manner. This mirrors the equity-promoting approach described in recent research on equitable classroom dialogue, which finds that when instructor attention is systematically distributed, the tendency for a small subset of active students to dominate discussion is significantly reduced (Hu et al., 2024; Moser et al., 2022). In Group 1, for instance, the instructor was able to identify the eight students with zero scores from the first session and addressed them individually in subsequent activities during the same tutorial.

6.4 Visible student motivation

Anecdotal evidence from student interactions following the first session suggests that students are conscious of their participation status and interested in their accumulated scores. Several students enquired about how scores would be communicated back to them and whether scores from each session would be made visible. This responsiveness to points-based tracking is consistent with gamification research showing that even modest and non-monetary rewards can function as effective motivational stimuli in educational settings (Gkika et al., 2024; Guo et al., 2025).

6.5 Improved session dynamics

Tutorial sessions under the SPTSS exhibited more interactive dynamics than comparable sessions before implementation, with students appearing more prepared and attentive to opportunities to contribute. This aligns with research on teacher-student interaction in university classrooms by Islam et al. (2025), who found significant positive associations between structured interactive teaching and student participation, as well as between timely constructive feedback and student motivation.

7. DISCUSSION

7.1 Theoretical interpretation

The preliminary findings from the SPTSS implementation can be interpreted through multiple complementary theoretical lenses. From the perspective of self-determination theory (Deci and Ryan, 2000), the system addresses all three basic psychological needs identified in the framework. Competence is supported by rewarding effort: students who attempt but fail to answer correctly still receive a point,

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reframing participation as a low-risk activity rather than a test of academic ability. Relatedness is addressed through the explicit valuation of peer discussion and peer teaching in the scoring rubric. Autonomy is maintained through the voluntary nature of contributions; students are not compelled to participate but are given clear and consistent incentives to do so.

From a gamification perspective, the SPTSS incorporates the core motivational mechanics identified in the literature, namely points as immediate feedback, transparent criteria as a goal-setting framework, and running totals as progress indicators (Zeng et al., 2024; Sciandrone et al., 2025). Importantly, the system avoids some of the pitfalls identified by Caballero-Hernández et al. (2023), notably over-reliance on competitive leaderboards, which can increase anxiety and demotivate students who are performing poorly relative to peers. By anchoring rewards to individual effort rather than relative standing, the SPTSS is designed to be inclusively motivating across all 77 students in this cohort.

The equity-promoting effect observed in preliminary data, whereby the tracking sheet enabled more equitable distribution of instructor attention across all four tutorial groups, aligns with research on classroom dialogue interventions by Hu et al. (2024), who developed a participatory visual learning analytics approach to improving participation equity in collaborative problem solving. The SPTSS represents a lower-technology analogue of such approaches, adapted to the resource contexts of Malaysian public universities.

7.2 Implications for tutorial pedagogy

The SPTSS offers several practical implications for tutorial instruction in higher education. First, the low resource requirements of the system make it accessible to instructors across disciplinary and institutional contexts. The tracking spreadsheet template (Appendix A) can be adapted for use in any tutorial course with minimal technical expertise and no requirement for dedicated software or institutional infrastructure. Second, the transparency of the system provides a pedagogical scaffold for students who may be unfamiliar with participatory expectations, particularly those in their first year of higher education.

Third, the system creates a structured record of individual student engagement that can inform tutorial instruction over time. By reviewing weekly scores across the 77 students in this study, the instructor can identify students who are consistently disengaged and proactively provide additional encouragement or targeted support. This is consistent with the broader formative assessment literature, which emphasises the value of ongoing monitoring in supporting student learning (Simon et al., 2024).

The preliminary outcomes of the SPTSS align with and extend findings from comparable studies in the participation grading and gamification literature. Márquez et al. (2023), whose study across Spanish business school courses found that structured participation grading was associated with higher academic performance and greater student preparation, reported similar patterns of increased voluntary engagement when students were aware that their contributions were being tracked and graded. The SPTSS findings are also broadly consistent with Gkika et al. (2024), who reported that a points-based gamification system in a university statistics tutorial context produced sustained increases in student engagement in pre-session activities, with the effect persisting across two academic years rather than dissipating after initial novelty. Furthermore, Simon et al. (2024), reviewing participation assessment practices across both physical and virtual classrooms, identify criterion-referenced, transparent scoring as a best-practice feature of effective

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participation grading systems, directly validating the design logic of the SPTSS. Taken together, these comparisons suggest that the SPTSS is not an idiosyncratic intervention but rather a contextually adapted instantiation of principles that have demonstrated efficacy across diverse educational settings.

7.3 Limitations and future research directions

Several important limitations must be acknowledged in interpreting the preliminary findings of this study. First, the current paper reports observational data from only the first week of SPTSS implementation across 77 students in four tutorial groups. These observations are qualitative, instructor-based, and not subject to independent verification. The absence of a control group and validated pre-post survey instruments means that causal claims about the effects of the SPTSS cannot yet be made.

Second, instructor bias effect represents a significant limitation. As the SPTSS was designed, implemented, and evaluated by the same instructor, there is an inherent risk that enthusiasm for the intervention may have influenced both the implementation quality and the interpretation of observational outcomes. This is a recognised limitation in practitioner research and will be addressed in future cycles through the inclusion of an independent observer and the use of validated student self-report instruments (McKenney & Reeves, 2018).

Third, the Hawthorne effect presents a plausible threat to the validity of the current findings. Students who are aware that their participation is being tracked and scored may modify their behaviour in response to the observation itself, rather than as a genuine reflection of increased intrinsic motivation. This effect is well-documented in educational intervention research and is particularly salient in the first weeks of a new system's implementation (Cook & Campbell, 1979). Longitudinal data across the full 14-week semester will help to distinguish sustained engagement from novelty-driven reactivity.

Fourth, and relatedly, the novelty effect of gamification is a recognised limitation in gamification research. Caballero-Hernández et al. (2023) note that while gamified systems consistently produce positive short-term effects on motivation and engagement, these effects sometimes diminish as the novelty of the point system fades over time. The present study cannot rule out the possibility that the encouraging Week 1 participation rates partly reflect novelty-driven enthusiasm rather than a durable shift in participation norms.

Fifth, the study is limited by its single-course implementation within one faculty at one Malaysian public university. The extent to which findings generalise to other courses, disciplines, institutional contexts, or cultural settings remains unknown. The SPTSS was designed for a public administration tutorial context and may require adaptation for disciplines with different participation norms or assessment cultures. Cross-institutional and cross-disciplinary replication is a priority for future research.

Sixth, the study reports only Week 1 observational data and does not include a formal pre-test/post-test comparison or a comparison with participation data from previous cohorts of the same course. While the instructor's prior teaching experience across earlier semesters suggested consistently low voluntary participation, this impression was not captured using a standardised instrument and therefore cannot serve as a reliable quantitative baseline. The absence of systematically recorded prior-cohort data represents a significant limitation, as it precludes direct statistical comparison between SPTSS and non-SPTSS conditions. Future implementations should retain participation records from a comparable non-SPTSS

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cohort or apply the SPTSS to only some tutorial groups within the same semester, to enable a more rigorous comparative analysis.

Future research should address these limitations through: (a) formal pre-semester and post-semester surveys measuring participation anxiety, engagement, and perceptions of fairness; (b) comparison of participation rates across SPTSS and non-SPTSS tutorial groups within the same course; (c) longitudinal tracking of participation trajectories across the full 14-week semester; (d) incorporation of a second independent observer to establish inter-rater reliability; and (e) cross-institutional replication in diverse cultural and disciplinary contexts.

8. CONCLUSION

This paper has presented the design, theoretical foundations, methodological basis, and preliminary implementation of the Structured Participation Tracking and Scoring System (SPTSS) for tutorial classes. Positioned within a Design-Based Research framework and grounded in active learning theory, self-determination theory, and gamification research, the SPTSS provides a transparent, fair, and accessible framework for promoting student engagement in higher education tutorials.

Initial observational findings from a Malaysian public university context, involving 77 undergraduate students across four tutorial groups (Group 1: 15 students; Group 2: 21 students; Group 3: 21 students; Group 4: 20 students), indicate that the system produced encouraging early outcomes within the first week of implementation. A total of 51 of the 77 students (66.2%) recorded positive participation scores in their first SPTSS-tracked session, with Group 3 recording the highest first-week engagement rate at 85.7%. Preliminary observations further suggest that the system promotes greater equity in participation, reduces student reticence, and improves tutorial session dynamics. While these findings are preliminary and require rigorous empirical validation, they are theoretically coherent and consistent with the broader literature on structured participation, accountability and gamification in education.

The SPTSS represents a practical, low-cost pedagogical intervention that can be implemented by individual instructors without institutional resources or technological infrastructure beyond a standard spreadsheet application. As higher education continues to grapple with student disengagement, particularly in the aftermath of disrupted learning during the COVID-19 pandemic, simple but well-designed accountability systems offer a promising avenue for revitalising the participatory culture of the tutorial classroom. Future work will seek to validate and refine the SPTSS through systematic empirical investigation across the full semester and beyond.

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10. CONFLICT OF INTEREST STATEMENT

The author declares that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declares the absence of conflicting interests.

11. AUTHORS' CONTRIBUTIONS

Haidy Henry Dusim: Conceptualisation, methodology, formal analysis, investigation, writing—original draft, writing—review and editing.

12. DATA AVAILABILITY

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

13. ETHICS STATEMENT

The authors declare that this research did not involve human or animal subjects in a manner requiring formal ethics committee approval. Participation data were collected as part of normal instructional practice within the author's own tutorial classes. All procedures were performed following the institutional Safety, Health, and Environmental (HSE) protocols of Universiti Teknologi MARA (UiTM).

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15. APPENDIX

A. APPENDIX A: PARTICIPATION TRACKING TEMPLATE

The following table reproduces the participation tracking template used in this study for Group 1 (PAD3215G1). An identical template structure is maintained for each of the four tutorial groups, with weekly scores recorded in columns W1 through W14 and a cumulative total updated after each session.

Table A1. Participation Tracking Template: Group 1 (PAD3215G1), Week 1 Data (N = 15)

Institution: UiTM Kota Kinabalu | Faculty: Administrative Science and Policy Studies | Course: PAD321 | Group: PAD3215G1

Bil	No. Pelajar	Nama	W1	W2	W3	...	W13	W14	Total
1	2024776699	AIRANI ROSELINDA BINTI ANDREW WEDDY MAJANGGIM	2			...			2
2	2024936567	DAISY JIMMY GIDDAH	2			...			2
3	2024745355	DAYANG NUR AISYAH BINTI ZULAZMIZUL @ AZLI	1			...			1
4	2024792435	DAYANG NUR FATIHA BINTI NORIZAL	0			...			0
5	2024991227	EAGAN ARISTO LANSING	3			...			3
6	2024936035	ESTER BINTI JENIOL	2			...			2
7	2024936489	IZZAH ATIRAH BINTI IRWAN	2			...			2
8	2024530447	LYDIA FARHANA BINTI REMIN	0			...			0
9	2024924443	NUR AFREENA	0			...			0
10	2024776831	NUR PUTRI NATASHA BINTI RUSLI	0			...			0
11	2024912765	NUR SHAZIERAH BALQIS BINTI RAJIS	0			...			0
12	2024789467	NURIZZAH BINTI HUSSIN	2			...			2
13	2024572967	SITI NUR AISYAH BINTI ABDUL HASHIM	0			...			0
14	2024789547	SITI NUR SYARENA BINTI HAMDIH	0			...			0
15	2024530435	SITI NUR ZUHLAIKAH	0			...			0

Empty cells in columns W2 through W14 indicate weeks not yet recorded at the time of writing. Scores are entered by the instructor during each tutorial session and transferred to a group summary sheet for periodic communication to students. The template is maintained independently for all four tutorial groups across the full 14-week semester.