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E-PROCEEDING

EXTENDED ABSTRACT

UiTM *di hatiku*

اوسها تقوى موليا

E-PROCEEDING

EXTENDED ABSTRACT



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Welcome Message RECTOR, UITM KEDAH BRANCH

Assalamualaikum warahmatullahi wabarakatuh,

First and foremost, I would like to extend my deepest appreciation to the organising committee of i-SPIKE 2025 for their steadfast dedication and commitment in making this prestigious event a reality. My heartfelt congratulations to the committee for their tireless efforts in ensuring that i-SPIKE continues to grow as a meaningful and impactful platform for academics, researchers, students, and industry players worldwide.

The theme for this year, “Empowering Minds: Bridging Innovation, Knowledge and Education for a Sustainable Future,” is both timely and significant. It reflects our shared responsibility to not only embrace creativity and technological advancement, but also to ensure that innovation directly contributes to sustainable development, equitable education, and the well-being of future generations.

i-SPIKE 2025 provides a dynamic platform for showcasing innovations that address real-world challenges while opening new avenues for collaboration, engagement, and inclusivity. By bridging knowledge, innovation, and education, this symposium strengthens our collective capacity to design solutions that empower communities and inspire positive change.

I am truly impressed by the diversity and calibre of participants in this year’s event. The projects and ideas presented highlight the extraordinary creativity and determination of our innovators. I am confident that the insights and solutions shared here will pave the way for continuous advancement in teaching, learning, and innovation.

It is my sincere hope that you will find i-SPIKE 2025 an enriching experience, one that sparks new ideas, builds lasting collaborations, and strengthens our shared vision for a sustainable future. To all participants, I wish you every success, and to the winners, my warmest congratulations.

Once again, I thank the organising committee, partners, and contributors for their invaluable support. May i-SPIKE 2025 continue to inspire and empower minds for many years to come.

Professor Dr. Roshima Haji Said
Acting Rector
Universiti Teknologi MARA (UiTM) Kedah Branch

Welcome Message (i-SPIKE 2025 CHAIR)

It is my great pleasure to welcome you to the 4th International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2025 (i-SPIKE 2025). This year's theme, "Empowering Minds: Bridging Innovation, Knowledge, and Education for a Sustainable Future," reflects our collective commitment to advancing innovation and fostering meaningful collaboration across academia, industry, and communities.

i-SPIKE 2025 provides a platform for scholars, researchers, students, and practitioners from diverse fields to showcase their ideas, share knowledge, and inspire new solutions to global challenges. We extend our sincere appreciation to all participants and contributors whose efforts and dedication have made this symposium possible.

We hope that this e-proceedings serves not only as a record of the innovations presented but also as a valuable resource that continues to inspire long after the event.

Thank you.

Dr Junaida Ismail
Chair

4th International Exhibition & Symposium on Productivity, Innovation,
Knowledge, and Education 2025 (i-SPIKE 2025)

PREFACE

The 4th International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education (i-SPIKE 2025) marks yet another milestone in our ongoing commitment to fostering innovation, creativity, and collaboration across disciplines. Guided by this year's theme, "Empowering Minds: Bridging Innovation, Knowledge and Education for a Sustainable Future," the event provides a dynamic platform for students, educators, researchers, and professionals to share their ideas, showcase their innovations, and engage in meaningful knowledge exchange.

This year, we are pleased to report that i-SPIKE 2025 received approximately 50 initial submissions, with more than 35 projects successfully advancing to final presentation and exhibition. These projects reflect a rich diversity of innovation, ranging from educational technologies, digital applications, and gamified learning tools to sustainable materials, cultural heritage preservation, and community-focused solutions. Collectively, they embody the spirit of bridging innovation and education to address pressing societal and global challenges.

We sincerely thank all participants, reviewers, and committee members for their invaluable contributions in making i-SPIKE 2025 a success. It is our hope that this e-proceedings will not only serve as a record of the ideas and innovations presented, but also as an inspiration for future collaborations and advancements in the pursuit of sustainable knowledge and innovation.

Assoc. Prof. Dr. Azlyn Ahmad Zawawi
Editor-in-Chief, i-SPIKE 2025 Proceedings

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CATEGORY 2
SS (ACADEMIC)

COLLABORATIVE INNOVATION LAB: RATE & REFLECT SIMULATION

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ABSTRACT

Collaborative learning has emerged as a fundamental pillar in modern education and professional development, fostering critical competencies such as teamwork, communication, and problem-solving. Despite its benefits, one of the most persistent challenges in group-based learning environments is the issue of free riding—where certain individuals contribute minimally to group tasks while reaping equal rewards. This behavior not only compromises the performance and productivity of the group but also raises concerns about fairness, demotivates high-performing members, and disrupts overall team cohesion. To address this problem, the proposed innovation introduces a Peer Assessment Evaluation Simulation specifically designed to identify, reflect on, and reduce free-riding behavior. The simulation immerses participants in structured, realistic group scenarios that demand active collaboration and collective decision-making. These simulated environments are intentionally crafted to reveal patterns of disengagement, while emphasizing the critical role of each member's contribution to the team's success. A central feature of this approach is integrating peer assessment and guided reflection. Participants are encouraged to evaluate their peers' performance and their own, fostering a culture of accountability and continuous improvement. The simulation creates a safe, low-stakes setting where learners can practice giving and receiving feedback, enhancing their ability to navigate complex interpersonal dynamics and respond effectively in team-based situations. Data collected from participant questionnaires revealed that feedback and guided reflection were consistently recognized as essential components of effective simulation design. Simulations that incorporated these elements were found to significantly improve participants' problem-solving skills, particularly in collaborative contexts. Through structured debriefings and reflective exercises, learners were able to critically examine their own behaviors, recognize areas for growth, and adopt more effective strategies for team engagement. This reflective process not only enhanced individual learning outcomes but also contributed to more cohesive team communication and improved decision-making under pressure.

Keywords: Collaborative, Peer Assessment Evaluation Simulation, free rider

INTRODUCTION

Collaborative learning is an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product (Laal and Ghodsi, 2012). In collaborative team settings, whether in educational or organizational environments, free-riding remains a significant challenge. Free-riding occurs when certain team members contribute substantially less effort compared to their peers, yet benefit equally from the group's overall success (Hall and Buzwell, 2012). This imbalance can lead to frustration, decreased motivation, and reduced effectiveness of the team as a whole. Addressing this issue is essential to ensure fair workload distribution and maximize collective productivity. Peer assessment has gained recognition as a practical and effective strategy to mitigate free-riding. According to Topping (2009), by empowering team members to evaluate each other's contributions using clear, predefined criteria, peer assessment enhances transparency and fosters accountability. This process encourages active participation from all members, discourages unequal effort, and promotes self-reflection, helping individuals recognize their strengths and areas for improvement. Moreover, peer assessment offers facilitators valuable insights into team dynamics, enabling fairer evaluations and timely interventions when necessary. Recent advances in technology have further transformed peer assessment practices. Digital platforms and learning management systems now enable efficient collection, analysis, and delivery of peer evaluations, often supporting anonymity to encourage honest and unbiased feedback. By fostering a culture of shared responsibility, constructive feedback, and mutual respect, peer assessment supports higher individual engagement and improved team performance (Brown and Lara, 2011).

Introduction to Peer Assessment Simulation– Rate and Reflect Peer Review

Peer assessment evaluation through simulation offers a wide range of benefits that contribute to both personal growth and team development (Lertsakulbunlue and Kantiwong, 2024). It enhances critical thinking and reflection by encouraging participants to observe and evaluate their peers' contributions thoughtfully, leading to deeper insights into effective teamwork. It also significantly improves teamwork and communication skills, as participants engage in giving and receiving constructive feedback—an essential part of managing group dynamics. Therefore, it is essential for a leader to effectively manage and address the diverse needs, behaviors, and contributions of team members. A leader must be capable of handling challenges efficiently and making wise, informed decisions, particularly in group settings where dynamics can be complex (Winterton et al., 2020). Thus, the simulation serves as a practical tool to present realistic team scenarios and provides explanations to help participants understand the context. Following each scenario, a related question is posed to assess the participant's judgment and decision-making. This process not only evaluates the ability to respond appropriately to team challenges but also offers insights into managing interpersonal dynamics and improving team performance. As group-based learning and teamwork continue to grow in relevance, the importance of implementing thoughtful and well-designed peer assessment systems becomes increasingly clear.

METHODOLOGY

This study utilizes a simulation-based peer assessment approach and a structured questionnaire to evaluate collaborative performance in a controlled, scenario-driven environment. The simulation provides realistic team interaction contexts, while the questionnaire captures participant evaluations and reflections on peer behaviors.

RESULT AND DISCUSSION

Table 1. Demographic Summary

CATEGORY	RESULTS
GENDER (FEMALE)	17
GENDER (MALE)	5
PEER ASSESSMENT EXPERIENCE (YES)	22
PEER ASSESSMENT EXPERIENCE (NO)	-
PREVIOUS GROUP WORK EXPERIENCE (EXCELLENT)	7
PREVIOUS GROUP WORK EXPERIENCE (GOOD)	7
PREVIOUS GROUP WORK EXPERIENCE (AVERAGE)	8
PREVIOUS EXPERIENCE (EXCELLENT)	7
PREVIOUS EXPERIENCE (GOOD)	7
PREVIOUS EXPERIENCE (AVERAGE)	8
ROLE IN SIMULATION (FASILITATOR)	2
ROLE IN SIMULATION (TEAM LEADER)	6
ROLE IN SIMULATION (TEAM MEMBER)	14

Table 2. Reflection on Team Collaboration

QUESTION	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE
THE SIMULATION HELPED ME RECOGNIZE THE IMPORTANCE OF COLLABORATION	10	9	2	0	1
I WAS ABLE TO IDENTIFY DIFFERENT ROLES AND BEHAVIORS WITHIN A TEAM	12	9	0	0	1
THE SIMULATION ALLOWED ME TO REFLECT ON MY OWN STRENGTHS AND WEAKNESSES	12	9	0	0	1
THE ACTIVITY HELPED ME UNDERSTAND HOW TO MANAGE GROUP DYNAMICS AND CHALLENGES	13	8	1	0	0
I EFFECTIVELY MANAGE MY TIME TO BALANCE WORK AND PERSONAL LIFE	12	9	0	0	1

The Collaborative Innovation Lab: Rate & Reflect Simulation was generally well-received by participants, with strong recognition of its value in enhancing teamwork skills. The majority of respondents highlighted that the activity improved their understanding of collaboration, helped them identify different team roles, and encouraged self-reflection on personal strengths and weaknesses. While most participants responded positively, a small proportion expressed neutral or negative experiences, particularly in areas of collaboration and time management. This suggests that while the simulation is effective for many, there may be opportunities to improve engagement strategies and provide additional guidance on time and role management. Overall, the results indicate that the simulation is an effective tool for enhancing teamwork awareness and encouraging reflective learning among participants. While the simulation successfully promotes collaboration and self-assessment, there remains potential for further refinement to better support all learners, particularly in addressing diverse learning styles and team dynamics.

CONCLUSION

Overall, the simulation creates a risk-free environment where participants can explore different roles and decision-making processes. The findings underscore the potential of simulation-based peer assessment as a practical intervention to mitigate free-riding behaviours while strengthening essential collaborative skills. By combining realistic group scenarios with structured feedback and reflection, the peer assessment evaluation simulation demonstrates its value in cultivating accountability, enhancing team performance, and preparing learners for the demands of real-world teamwork.

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