

Enhancing Students' Meeting Management Competencies through Simulation Activities in MICE Management Subject

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Abstract

The MICE (Meetings, Incentives, Conventions, and Exhibitions) industry requires graduates with both theoretical understanding and practical competencies, particularly in managing meetings. However, traditional lecture-based teaching methods often fail to provide students with sufficient hands-on experience, resulting in skill gaps that hinder their readiness for real-world applications.

This classroom research aimed to evaluate the effectiveness of simulation-based learning in enhancing meeting management competencies among undergraduate students enrolled in the 504310 MICE Management course at North-Chiang Mai University during the second semester of the 2024 academic year. Specifically, the study sought to (1) examine the improvement of students' skills after participating in simulation activities, and (2) analyze students' satisfaction and perceptions toward this instructional approach.

A pre-experimental research design was employed, using pre- and post-tests, satisfaction questionnaires, and observational checklists. Results revealed a statistically significant increase in students' meeting management skills, with mean scores rising from 7.36 to 12.41 ($t = 17.82$, $p < 0.05$). Students expressed high satisfaction with the simulation activities ($M = 4.43/5$), reporting that the sessions were engaging, relevant, and helpful in connecting classroom knowledge to practical contexts. These findings support the integration of simulation-based instruction in MICE education to foster both competence and confidence in future industry professionals.

Keywords: Simulation Activities, Meeting Management Skills, Student Engagement

Background and Statement of the problem

The MICE (Meetings, Incentives, Conventions, and Exhibitions) industry is a growing sector that plays a vital role in driving global tourism, economic development, and professional collaboration (Chan & Yeung, 2019; Wang & Tsai, 2020). Within this dynamic environment, effective meeting management is crucial and requires graduates who are well-equipped with both theoretical knowledge and practical skills (Goh & Lee, 2018).

Despite its importance, students in MICE-related programs often encounter difficulties in applying classroom theories to real-world scenarios due to a lack of hands-on learning opportunities (Wang & Tsai, 2020). Traditional lecture-based methods have been criticized for their limited capacity to foster practical competencies such as planning, communication, coordination, and problem-solving (Tiwari et al., 2021). To address this issue, educational researchers and practitioners have increasingly turned to experiential learning approaches, particularly simulation-based learning, as a means to bridge the gap between theory and practice.

Simulation-based learning replicates real-world conditions in a controlled setting, allowing students to engage in decision-making processes, team collaboration, and scenario-based problem-solving. It has demonstrated effectiveness in enhancing learner engagement and operational competencies across a range of disciplines, including healthcare, aviation, and hospitality (Cheng et al., 2020; Salas et al., 2020).

However, while promising, simulation-based learning also presents certain challenges. These include the need for substantial instructional planning, trained facilitators, and resource-intensive setups, which may limit its scalability in large classes or underfunded programs. These potential drawbacks underscore the need to assess its feasibility and effectiveness in specific educational contexts particularly in small classroom settings where intensive facilitation is possible.

This study addresses these concerns by applying simulation-based learning in a focused, small-classroom setting to enhance meeting management skills and under-explored competency within MICE education. While previous studies have examined experiential learning in tourism broadly, few have investigated its targeted impact on structured meeting planning and execution within MICE courses. Thus, this research aims to contribute to the existing body of knowledge by providing empirical evidence on how structured simulation activities can enhance students' readiness to manage real-world meetings in the MICE industry.

Objective

1. To evaluate the effectiveness of structured simulation activities in developing core meeting management skills.
2. To analyze students' perceptions, engagement, and satisfaction with simulation-based learning, using reflective feedback, satisfaction questionnaires, and classroom observation checklists.
3. To offer recommendations for integrating simulation activities in MICE education curricula.

Expected benefits

1. Enhanced student competencies in planning and managing meetings within the MICE context.
2. Improved student engagement and motivation through active learning.

Conceptual Framework and Literature Review

This research integrates key concepts and theories that provide a theoretical foundation for understanding the impact of simulation activities on skill development:

1. Simulation Activities: Contemporary Perspectives

Simulation Activities have emerged as a robust and dynamic pedagogical tool, effectively replicating real-world scenarios to facilitate the acquisition of practical skills and the application of theoretical knowledge within a secure and controlled learning environment. This approach has garnered substantial interest and application across a multitude of disciplines, primarily due to its proven ability to significantly boost learner engagement and foster experiential learning.

Key Applications and Technological Advancements:

1.1 Decision-Making Simulations

Cheng et al. (2020) highlight the pivotal role of simulations in cultivating critical thinking and problem-solving proficiencies. These simulations present learners with complex, decision-driven scenarios, demanding analytical evaluation and strategic responses. Specifically, these simulations are invaluable within leadership and management training programs, enabling participants to navigate simulated challenges, refine their decision-making processes under pressure, and understand the consequences of their choices within a safe learning space. These could also be used to teach risk management, and ethical decision making within businesses.

1.2 Collaborative Simulations

Salas et al. (2020) emphasize the capacity of simulations to enhance teamwork and communication skills. By recreating scenarios that necessitate collective effort, these activities promote synergistic problem-solving and effective information exchange. Collaborative simulations are indispensable for training teams operating in high-risk environments, such as medical emergency rooms or aviation control centers, where seamless coordination and clear communication are paramount for optimal outcomes. They can also be used to train teams in remote work environments, and help to facilitate better virtual communication.

1.3 Adaptive Simulations

Graesser et al. (2021) introduce the concept of adaptive simulations, which leverage artificial intelligence to personalize the learning experience. These simulations dynamically adjust the difficulty level and scenario parameters based on individual learner performance. This personalized approach optimizes learning efficiency by ensuring that learners are consistently challenged at an appropriate level, thereby maximizing knowledge retention and skill development. These can be used for things like military training simulations, and for training complex industrial machinery operation, where the simulation can adjust to the learners pace.

The continuous evolution of simulation activities, driven by technological advancements and pedagogical research, underscores their significance in contemporary education and training. By providing realistic, engaging, and adaptable learning experiences, simulations empower learners to develop essential skills and knowledge that are directly applicable to real-world scenarios.

2. Simulation-Based Learning in Hospitality and Tourism Education

Simulation-based learning is increasingly integrated into hospitality and tourism education due to its ability to create realistic learning environments that mirror industry challenges.

Hsu and Chen (2020) highlight that experiential learning strategies, including simulation, significantly enhance students' event planning capabilities. Their case study demonstrated that student event planners gained confidence and improved problem-solving abilities through experiential tasks.

Chan and Yeung (2019) confirm that simulation-based learning fosters deeper student engagement, providing learners with opportunities to actively participate in practical tasks that mirror real-world scenarios.

Wang and Tsai (2020) emphasize improvements in practical skill application and critical thinking, noting that students who engage in simulation-based activities are better able to apply theoretical knowledge effectively.

Kolb and Kolb (2017) underline the effectiveness of simulation in enhancing students' decision-making capabilities, highlighting the critical role of reflective observation and active experimentation in the learning process.

Tiwari et al. (2021) further support these findings by stating that simulation activities significantly increase students' employability skills, preparing them for real-world professional challenges.

3. Simulation and MICE Education

Davidson and Rogers (2016) highlighted that the MICE industry demands a unique set of practical and interpersonal skills, particularly in meeting management. These include logistical planning, stakeholder communication, and on-site coordination, all of which are difficult to teach through conventional lectures alone. Simulation activities offer a valuable solution by allowing students to safely practice these essential skills in a risk-free, feedback-rich environment, thereby enhancing their readiness and adaptability for real-world event management scenarios.

4. Student Engagement and Skill Development through Simulation

Goh and Lee (2018) emphasized that Generation Z students, who constitute the majority of current hospitality students, prefer active, experiential, and technology-enhanced learning environments. Simulation effectively aligns with this preference by addressing their expectation for hands-on skill development, fostering higher levels of motivation and active participation in the learning process.

Chan (2012) also found that students who participated in realistic role-play scenarios developed stronger competencies in conflict management, teamwork, and leadership—skills essential for effective meeting management. Through these role-play scenarios, students not only practiced technical skills but also enhanced their interpersonal skills, enabling them to effectively manage complex interpersonal dynamics encountered in real-world meeting management.

5. Active Learning Approach and the Role of Simulation in Contemporary Education

The Active Learning Approach fundamentally shifts the educational paradigm from passive information absorption to active knowledge construction. This pedagogical strategy emphasizes student engagement through meaningful learning tasks that necessitate critical thinking and reflective practice. Simulation activities, with their immersive and decision-oriented scenarios, are particularly potent tools within this framework, fostering a dynamic and interactive learning environment. Core Principles and Integration with Simulation:

Fiorella & Mayer (2021) advocate for learning environments that promote deep student engagement throughout all stages of the educational process. Simulation powerfully achieves this by placing students within realistic, interactive scenarios where their actions directly influence outcomes. This engagement transcends mere participation; it compels students to actively construct their understanding through problem-solving, decision-making, and consequence analysis within the simulation.

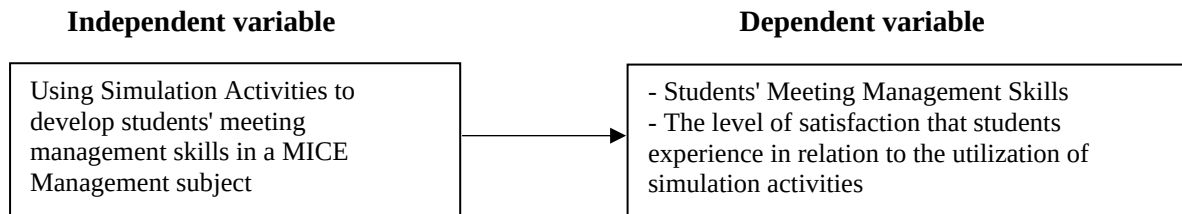
Graham (2020) highlights the advantages of blended learning, which combines online and offline modalities to enhance flexibility and adaptability. Simulation activities seamlessly integrate into this model, offering both virtual and physical learning experiences. Online simulations provide accessibility and convenience, allowing students to practice at their own pace and revisit scenarios as needed. In-person simulation exercises, such as role-playing or physical simulations, offer hands-on, collaborative learning opportunities.

Savery (2021) reinforces the importance of problem-based learning, where students tackle real-world challenges to develop critical thinking and practical application skills. Simulation activities directly align with this principle by presenting students with authentic, context-rich scenarios. This method increases the student's ability to transfer learned knowledge, and makes the learning more applicable to their future careers.

These theoretical foundations support the argument that simulation activities are effective tools in bridging the gap between theoretical knowledge and practical skills in MICE education, offering rich opportunities for both cognitive and social development.

Conceptual Framework

The conceptual framework of this study consists of independent and dependent variables as follows:



Research Methodology

1. Research Design: This study employed a pre-experimental one-group pre-test and post-test design to evaluate the effects of simulation-based learning on students' meeting management skills. Although effective for classroom research, this design does not include a control group, which may limit the ability to fully isolate the impact of the intervention.

2. Scope of the Research: The research focused on enhancing meeting management competencies through structured simulation activities within the 504310 MICE Management course during the second semester of the 2024 academic year at North-Chiang Mai University.

3. Population and Samples: The target population consisted of undergraduate students enrolled in the Aviation Business and Tourism Management program. The sample comprised 14 students registered in the 504310 MICE Management course. A purposive sampling method was used, as all participants were directly involved in the instructional intervention. The relatively small sample size may limit the generalizability of the findings, and this is acknowledged as a limitation of the study.

4. Scope of Studied Variables:

- Independent Variable: Simulation Activities
- Dependent Variable: Students' Meeting Management Skills

5. Time of the Research: The research was conducted over a 7-week period during the second semester of the 2024 academic year. Data collection activities, including pre-tests, simulations, and post-tests, were organized between Weeks 1 to 7.

6. Hypothesis: The implementation of simulation activities will significantly enhance the meeting management skills of students enrolled in the 504310 MICE Management course.

Research Instruments

The main instruments employed for this study were as follows:

1. Pre-test and Post-test on Meeting Management Skills: The researcher designed assessment tools to evaluate students' skills before and after participating in the simulation activities. There were 6 tasks simulating different meeting scenarios (e.g., event planning, client meetings, stakeholder coordination, logistics planning, crisis communication, and evaluation sessions).

2. Content of Simulation Activities: The instructional simulation units were divided into 6 sessions:

- Unit 1: Introduction to Meeting Types and Objectives
- Unit 2: Planning and Preparation for Meetings
- Unit 3: Managing Communication and Roles
- Unit 4: Problem-solving and Conflict Resolution
- Unit 5: Conducting and Controlling Meetings
- Unit 6: Evaluation and Feedback of Meeting Outcomes

3. Meeting Management Assessment Form: The assessment form was used to evaluate students' performance in simulation tasks. It consisted of five components: Planning & Organization, Communication Effectiveness, Coordination, Problem-Solving, and Leadership. The evaluation was based on a four-level performance rubric: Excellent, Good, Fair, and Needs Improvement.

4. Student Satisfaction Questionnaire: This five-point rating scale questionnaire consisted of 10 items designed to gather students' opinions regarding the effectiveness of the simulation activities, their satisfaction, motivation, and perceived learning benefits.

5. Instrument Validation and Reliability: Content validity of all instruments was reviewed by three experts using the Index of Item-Objective Congruence (IOC), with all items scoring between 0.75 and 1.00 (overall IOC = 0.95). For reliability, the Student Satisfaction Questionnaire was piloted with a similar student group (n = 15) and yielded a Cronbach's alpha of 0.87, indicating good internal consistency.

Data Analysis

1. Compute the average scores derived from the meeting management assessment for students in the sample group, both prior to and following the simulation-based intervention. Analyze the scores to assess the progress in meeting management proficiency before and after the experiment, employing the Paired-Samples t-test for statistical examination.

2. Analyze the data acquired from assessing the development of students' meeting management skills and summarize the findings in a systematic order.

3. The qualitative data from the concluding section of the satisfaction questionnaire, consisting of learners' opinions and suggestions, were analyzed to discern their satisfaction and feedback regarding the simulation-based learning experience.

4. To assess students' satisfaction with the learning process through simulation activities, data from five-point rating scale responses were analyzed for the mean ($\bar{x}$) and standard deviation (S.D.). The following criteria were applied for interpretation (Srisa-ard, 2002)

Mean Score Range	Interpretation
4.51 – 5.00	Most satisfactory
3.51 – 4.50	More satisfactory
2.51 – 3.50	Average satisfactory
1.51 – 2.50	Less satisfactory
1.00 – 1.50	Least satisfactory

Research Results

The study analyzed both quantitative and qualitative data to evaluate the effectiveness of simulation-based learning in improving students' meeting management competencies.

1. Quantitative Results

A paired samples t-test was conducted to compare students' pre- and post-test scores (n = 14). The findings showed a statistically significant improvement in performance:

Table 1 shows the mean and standard deviation of students' meeting management skill scores before and after the experiment (n = 14):

Assessment Phase	Mean ($\bar{x}$)	S.D.	t	Sig. (1-tailed)
Pre-Experiment	7.36	1.52		
Post-Experiment	12.41	1.64	17.82	0.000

As shown in Table 1, a paired samples t-test was performed to determine if there was a significant difference in students' meeting management skill scores between the pre-experiment and post-experiment phases. The results indicated a statistically significant improvement in students' scores at the 0.05 significance level (t = 17.82, sig. = 0.000).

As revealed in Table 2, the results indicated that students' satisfaction toward the use of simulation activities to develop meeting management skills was at a "more satisfactory" level ($\bar{x}$ = 4.43, S.D. = 0.20). The three highest mean scores were: item 2, "Active participation in simulation-based learning is highly intriguing" ($\bar{x}$ = 4.62, S.D. = 0.47); item 4, "Simulation is an effective method to practice meeting management" ($\bar{x}$ = 4.60, S.D. = 0.48); and item 6, "The simulation improves the ability to manage meetings

in diverse real-life situations” ($\bar{x}$ = 4.55, S.D. = 0.46). The lowest mean score was item 1, “The atmosphere of participation in simulation-based activities” ($\bar{x}$ = 4.18, S.D. = 0.43).

Table 2 shows the mean and standard deviation for each item in the satisfaction questionnaire (n = 14):

Evaluation List	$\bar{x}$	S.D.	Meaning
1. The atmosphere of participation in simulation-based activities.	4.18	0.43	More satisfactory
2. Active participation in simulation-based learning is highly intriguing.	4.62	0.47	Most satisfactory
3. The simulation activities are interesting for developing meeting management skills.	4.39	0.50	More satisfactory
4. Simulation is an effective method to practice meeting management.	4.60	0.48	Most satisfactory
5. Simulation-based learning enhances confidence in managing real meetings.	4.35	0.45	More satisfactory
6. The simulation improves the ability to manage meetings in diverse real-life situations.	4.55	0.46	Most satisfactory
7. Simulation activities contribute to overall improvement in meeting management skills.	4.36	0.52	More satisfactory
8. The method and time allocation of activities align with the study topic.	4.30	0.40	More satisfactory
9. Students wish to integrate simulation-based activities into other courses.	4.48	0.49	More satisfactory
10. Overall, students express satisfaction with the simulation-based learning process.	4.51	0.44	Most satisfactory
Total	4.43	0.20	More satisfactory

Summary of the Study

This classroom research aimed to investigate the use of simulation activities to enhance students' meeting management skills in the 504310 MICE Management subject. The research was conducted with 14 students during the second semester of the academic year 2024 at North-Chiang Mai University.

The study implemented six simulation units that covered core meeting management topics including planning, communication, coordination, and evaluation. Pre-test and post-test assessments, along with observation checklists, satisfaction questionnaires, and student reflections, were employed as research instruments.

Quantitative analysis using a paired samples t-test revealed a significant improvement in students' meeting management skills following the simulation-based learning intervention. The mean score increased from 7.36 (S.D. = 1.52) to 12.41 (S.D. = 1.64), with a t-value of 17.82 and significance level of 0.000, indicating high effectiveness of the approach.

In addition, students reported high levels of satisfaction with the learning process. The average satisfaction score across all items was 4.43 (S.D. = 0.20), interpreted as “more satisfactory.” The most positively rated aspects were active engagement, effectiveness of simulation, and the relevance of simulation to real-life scenarios. These findings support the integration of simulation-based strategies in MICE and other experiential learning curricula.

Discussions

1. Students who learned meeting management through simulation activities had significantly higher post-experiment scores compared to their pre-experiment results.

The research results revealed that the students' meeting management skills after using simulation activities were significantly higher than before, with a t-value of 17.82 and significance at the 0.05 level (sig. = 0.000). This indicates that simulation-based learning effectively improved students' skills, supporting the study hypothesis. These findings align with the work of Hsu and Chen (2020), who found that experiential learning in event management enabled student planners to improve their planning, problem-solving, and collaboration skills. Their study demonstrated that realistic simulations helped students gain practical experience in handling event logistics, working with stakeholders, and making critical decisions in high-pressure environments. Specifically, students' self-assessed confidence improved significantly, with mean scores increasing from 3.21 to 4.27 on a 5-point scale after the simulation-based activities.

Chan (2012) also emphasized that simulation exercises in hospitality education develop essential soft skills, including communication, teamwork, and leadership—skills directly transferable to meeting

management contexts. The study reported that students rated their improvement in teamwork at an average of 4.35, communication skills at 4.22, and leadership at 4.10 on a 5-point scale. These findings reinforce the importance of using simulation in building practical and interpersonal competencies. The improvement in this study's post-test scores supports the theory of experiential learning by Kolb (1984), which advocates for learning through experience, reflection, and application.

Furthermore, Ab Aziz et al. (2022) examined the application of simulation-based training in tourism and hospitality programs and reported a statistically significant improvement in students' competency, especially in operational planning and guest handling. The study showed that students' average pre-test score was 3.11, which increased to 4.35 after the simulation activities on a 5-point scale, indicating notable improvement. These results validate the effectiveness of simulation in bridging theoretical knowledge with practical, job-related skills. Their study concluded that simulation exercises served as effective tools to bridge theoretical knowledge with on-the-job practices.

2. Students were satisfied with the simulation-based learning activities at a satisfactory level.

The study found that students' satisfaction with simulation-based learning was at a "more satisfactory" level ($\bar{x} = 4.43$, S.D. = 0.20). This supports the research hypothesis and is consistent with previous findings. According to Goh and Lee (2018), Generation Z students in hospitality and tourism programs prefer learning environments that are interactive, participatory, and closely aligned with real-world practices. Simulation activities provide these elements, thus fostering higher levels of engagement and satisfaction.

Hsu and Chen (2020) further noted that students appreciated how simulation tasks allowed them to connect theoretical knowledge with practical experience, enhancing their learning outcomes. Their research reported an overall student satisfaction score of 4.31 out of 5. Students particularly valued aspects such as 'linking theory to practice' ($\bar{x} = 4.45$), 'engagement and interactivity' ($\bar{x} = 4.42$), and 'realistic learning experience' ($\bar{x} = 4.39$), indicating that simulation activities effectively aligned with learners' expectations and learning preferences. Their study found that 85% of students reported increased motivation, and over 90% agreed that the activities improved their preparedness for real event work. Likewise, Harun et al. (2021) found that students in event management programs expressed high levels of satisfaction with simulated role-play activities. The study reported that students' overall satisfaction level was 4.38 out of 5, with specific satisfaction ratings of 4.41 for the realism of the activities, 4.36 for engagement and participation, and 4.32 for skill improvement. These results reflect students' positive perception of simulation-based learning and its effectiveness in preparing them for future careers. The students perceived the learning environment as enjoyable and relevant to their future careers. The high satisfaction scores in this study—particularly in items related to realism, engagement, and skill development—reflect these observations and support the continued use of simulation in MICE education.

Recommendations

Based on the research findings of this study, some suggestions were proposed here for future research.

1. Incorporate simulation activities into the core MICE curriculum to bridge theory and practice effectively.
2. Use simulation as an assessment tool to measure real-world competencies in meeting and event planning.
3. Enhance the realism of simulations by incorporating real client cases and time-bound decision-making.

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