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IMPROVEMENTS TO THE INTERACTIVE LEARNING MANAGEMENT SYSTEM FOR BUSINESS ADMINISTRATION STUDENTS IN STRATEGIC MANAGEMENT COURSES

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Abstract

Pamantasan ng Lungsod ng Pasig takes pride in the high employability of its graduates. In a knowledge-driven workplace, technical competence must be matched by the ability to determine, analyze, and resolve problems, an ability that supports decision-making at every level of an organization and that technology cannot replace. This study assessed whether the case study method improved the interactive learning management system of Business Administration students in Strategic Management (STRAMA) courses, defined here as problem determination, problem analysis, and problem resolution. An action research approach with a one-group pretest–posttest design was used. One hundred purposively selected students answered the same questionnaire before and after a case study intervention during the first semester of Academic Year (AY) 2022–2023. Data were analyzed using weighted means and a paired-samples t-test. Ratings increased in all three dimensions: problem determination (3.23 to 3.72), problem analysis (2.97 to 3.65), and problem resolution (2.88 to 3.53). The overall increase, from 3.03 to 3.63, was statistically significant, $t(29) = 9.78$, $p < .001$. Students perceived a significant improvement in their problem-solving competence after case-based learning, which supports integrating the case study method into strategic management instruction. Because the findings rely on self-reported ratings without a comparison group, they should be confirmed in controlled studies.

Keywords: *interactive learning management system, analytical skills, case study method, competencies, decision-making, problem solving*

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INTRODUCTION

The case study method is a highly adaptable teaching approach that draws on problem-based learning and promotes interactive learning (Psotka, 2012). By presenting content as a narrative accompanied by questions and activities that prompt group discussion and the solving of complex problems, case studies move learners beyond knowledge recall toward interactive learning, evaluation, and application (Barker, 2009). Case studies also foster interdisciplinary learning and highlight links between academic subjects and practical societal problems. This connection has been reported to increase students' motivation to participate in class activities, which in turn promotes learning and improves assessment performance (Pappas, 2020). For these reasons, case-based learning has long been popular in medical and business education.

Employers prefer graduates with higher-order thinking skills (Sulaiman, Rahman, & Dzulkifli, 2008). Beyond technical capability, analytical thinking enables individuals to make well-founded judgments based on pertinent, verified evidence. Jones and Pimdee (2017) likewise emphasized the emergence of knowledge-based economies, which developed and developing nations alike aim to build. As new technologies emerge, they can support but not replace human critical thinking, especially when decisions must be made. This is consistent with Bassham, Irwin, Nardone, and Wallace (2013), who indicated that higher education institutions are responsible for developing the critical thinking skills of the future workforce. Interactive learning content and learning management systems have also been discussed widely as ways of making learning more engaging (Ajami & Suleiman, 2014; Parikh, 2018; Seel, 2012).

Strategic management courses in a Business Administration program require students to identify problems, analyze them in light of internal and external factors, and select and monitor resolutions. Case-based instruction is designed to develop these competencies. Whether case-based instruction changes how students themselves rate these competencies, however, needs to be examined in the specific context of the program. Throughout this paper, interactive learning management system refers to students' interactive problem-solving competence, assessed through three dimensions: problem determination, problem analysis, and problem resolution.

The study therefore examined students of the Business Administration program enrolled in Principles of Strategic Management during the first semester of AY 2022–2023. It specifically aimed to:

1. describe the profile of the respondents;
2. determine students' self-assessed problem determination, problem analysis, and problem resolution before and after the case study intervention;
3. identify the strengths and weaknesses of students within each dimension; and
4. test whether the difference between pre-test and post-test ratings is significant.

The null hypothesis (H_0) states that there is no significant difference between students' pre-test and post-test ratings of their interactive learning management system.

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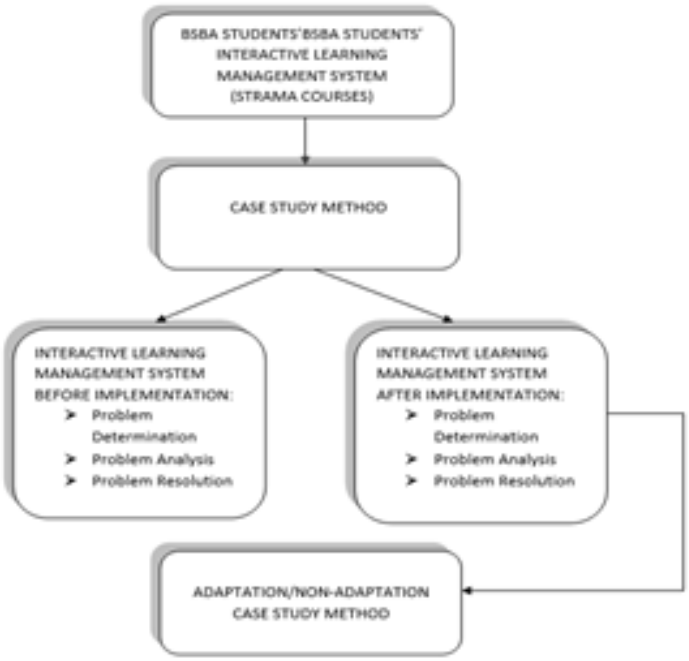
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METHODS

Research design

The study used action research and combined evaluative, investigative, analytical, and descriptive approaches. Action research aims to evaluate organizational, academic, or instructional issues and deficiencies and to help educators develop practical ways of addressing them quickly and efficiently. Specifically, a one-group pretest–posttest design was used: a questionnaire was administered at the start of the semester, the case study method was introduced as an intervention, and the same questionnaire was administered again afterward. The questionnaire was organized around three focus variables (problem determination, problem analysis, and problem resolution) so that weak points could be identified and addressed through additional class activities, primarily the case study method. Figure 1 shows the conceptual framework of the study.

Figure 1. Conceptual Framework



Participants and sampling

The participants were 100 Bachelor of Science in Business Administration (BSBA) students of the College of Business Administration and Accountancy who were enrolled in Principles of Strategic Management during the first semester of AY 2022–2023. Purposive sampling was used. The researcher pre-identified the participants because of their similar characteristics, which were expected to support the validity of the information drawn from their questionnaire responses. The respondents' profile is presented in Table 1.

Instrument

Students' interactive learning management system was measured through a self-evaluation questionnaire with 30 indicators, 10 for each of the three dimensions. Responses were described using the verbal interpretations Strongly Agree (SA), Agree (A), and Disagree (D). In the tables that follow, weighted means of 3.50 and above are interpreted as SA, 2.50 to 3.49 as A, and 1.50 to 2.49 as D.

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Procedure

At the start of the semester, a pre-test questionnaire was administered to establish the students' current level of interactive learning management system through self-evaluation. After the pre-test data were totaled, the case study method was used as an intervention. The class was given instances of corporate decision-making to discuss. After the activity, the same questionnaire was administered again to re-evaluate the students' interactive learning management system in light of their experience of making decisions through the case study method.

Data analysis

Pre-test and post-test data were compared and analyzed using the weighted mean and a paired-samples t-test at a 0.05 level of significance. The t-test was computed on the 30 indicator-level weighted means (10 per dimension), which is why it has 29 degrees of freedom. The 95% confidence interval and Cohen's d for paired samples were computed from the same paired data.

Ethical considerations

The respondents were informed of the purpose of the study, and their consent was requested. The investigation was carried out in a safe and controlled environment, the university campus, and no hazards to participants were anticipated. The study was conducted under the researcher's supervision with the chosen participants.

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RESULTS

Respondent profile

Table 1 shows the profile of the 100 respondents. Most were female (71%), aged 16 to 20 years (78%), fourth-year students (66%), and majoring in Marketing (78%).

Table 1. Profile of the respondents (N = 100)

Characteristic	f	%
Sex		
Male	29	29.0
Female	71	71.0
Age		
16–20 years old	78	78.0
21–25 years old	17	17.0
26–30 years old	3	3.0
31 years old and above	2	2.0
Year level		
Third year	34	34.0
Fourth year	66	66.0
Course major		
Entrepreneurship	10	10.0
Marketing	78	78.0
Accountancy	12	12.0

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Pre-test and post-test ratings by dimension

Table 2 summarizes the ratings. Before the intervention, students rated all three dimensions as Agree (A). After the intervention, all three dimensions were rated Strongly Agree (SA). The largest gain was in problem analysis (+0.68), followed by problem resolution (+0.65) and problem determination (+0.49).

Table 2. Summary of pre-test and post-test weighted means by dimension

Dimension	Pre-test WM	Int.	Post-test WM	Int.	Change
Problem determination	3.23	A	3.72	SA	+0.49
Problem analysis	2.97	A	3.65	SA	+0.68
Problem resolution	2.88	A	3.53	SA	+0.65
Overall	**3.03**	**A**	**3.63**	**SA**	**+0.61**

Note. WM = weighted mean; Int. = interpretation; SA = Strongly Agree; A = Agree. Change = post-test minus pre-test.

Problem determination

As shown in Table 3, the average weighted mean for problem determination rose from 3.23 (A) in the pre-test to 3.72 (SA) in the post-test. Nine of the 10 indicators increased. In the pre-test, the lowest-rated indicators were dissecting statements and factual data (2.73) and using an objective approach in determining problems (2.91). These showed the largest gains, at +0.83 and +0.96 respectively, and both reached SA in the post-test. The only indicator that declined was openness to collaboration with others (3.80 to 3.64), although it remained SA.

Table 3. Pre-test and post-test ratings on problem determination

Indicator	Pre-test WM	Int.	Post-test WM	Int.	Change
Identify arising or looming problems	3.71	SA	3.92	SA	+0.21
Utilize tools such as root cause analysis and fishbone analysis	3.16	A	3.56	SA	+0.40
Use an objective approach in determining problems	2.91	A	3.87	SA	+0.96
Dissect statements and factual data	2.73	A	3.56	SA	+0.83

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Indicator	Pre-test WM	Int.	Post-test WM	Int.	Change
Identify actual problems, not just symptoms	3.04	A	3.76	SA	+0.72
Verify data from reputable sources	3.32	A	3.89	SA	+0.57
Remain unclouded by emotions and subjectivity	3.34	A	3.64	SA	+0.30
Assess and organize information accurately	3.21	A	3.81	SA	+0.60
Remain open to collaboration with others	3.80	SA	3.64	SA	−0.16
Prioritize problems based on the need to address them immediately	3.06	A	3.51	SA	+0.45
Average weighted mean	**3.23**	**A**	**3.72**	**SA**	**+0.49**

Note. WM = weighted mean; Int. = interpretation; SA = Strongly Agree; A = Agree. Change = post-test minus pre-test.

Problem analysis

Table 4 shows that the average weighted mean for problem analysis increased from 2.97 (A) to 3.65 (SA). All 10 indicators improved. The lowest pre-test rating was for providing analyses based on available concepts, paradigms, and theories (2.16, D), which rose to 3.29 (A). The largest gains were for providing practical analyses of encountered problems (+1.23), providing analyses based on concepts and theories (+1.13), and using tools such as SWOT (+0.99). Two indicators remained at A in the post-test: using experience and an objective approach in interpretation (3.49) and analyses based on concepts, paradigms, and theories (3.29).

Table 4. Pre-test and post-test ratings on problem analysis

Indicator	Pre-test WM	Int.	Post-test WM	Int.	Change
Utilize experience and an objective approach in interpretation	2.89	A	3.49	A	+0.60
Collaborate with teammates to come up with credible analyses	2.99	A	3.55	SA	+0.56

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Volume 1 Issue 3 Pages 2106-2118

Indicator	Pre-test WM	Int.	Post-test WM	Int.	Change
Consider internal factors that may influence decision-making	3.12	A	3.87	SA	+0.75
Consider external factors	3.26	A	3.61	SA	+0.35
Utilize tools such as SWOT in determining implications	2.79	A	3.78	SA	+0.99
Provide analyses based on available concepts, paradigms, and theories	2.16	D	3.29	A	+1.13
Provide practical analyses of encountered problems	2.68	A	3.91	SA	+1.23
Ensure that analyses are anchored on firsthand information	3.06	A	3.51	SA	+0.45
Apply learned concepts from previous subjects	3.47	A	3.66	SA	+0.19
Organize information and analyze its interrelationships	3.29	A	3.84	SA	+0.55
Average weighted mean	**2.97**	**A**	**3.65**	**SA**	**+0.68**

Note. WM = weighted mean; Int. = interpretation; SA = Strongly Agree; A = Agree; D = Disagree. Change = post-test minus pre-test.

Problem resolution

Table 5 shows that problem resolution had the lowest pre-test rating of the three dimensions, 2.88 (A), and rose to 3.53 (SA) in the post-test. All 10 indicators improved. Three indicators were rated D in the pre-test: providing long-term resolutions (2.06), monitoring and evaluating once a problem has been solved (2.15), and considering contingency plans (2.36). Their post-test ratings were 3.47, 3.04, and 3.38 (all A), corresponding to gains of +1.41, +0.89, and +1.02. Monitoring and evaluation remained the lowest-rated indicator across the whole questionnaire in the post-test.

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Volume 1 Issue 3 Pages 2106-2118

Table 5. Pre-test and post-test ratings on problem resolution

Indicator	Pre-test WM	Int.	Post-test WM	Int.	Change
Weigh the pros and cons of recommended resolutions	2.89	A	3.51	SA	+0.62
Provide long-term resolutions to problems	2.06	D	3.47	A	+1.41
Recommend simple and realistic resolutions	3.15	A	3.67	SA	+0.52
Provide time-bound resolutions	3.23	A	3.71	SA	+0.48
Provide two or more options for resolution	3.36	A	3.64	SA	+0.28
Monitor and evaluate once the problem has been solved	2.15	D	3.04	A	+0.89
Consider contingency plans	2.36	D	3.38	A	+1.02
Adopt consensus in resolving problems	3.26	A	3.66	SA	+0.40
Consider everyone's take on how to handle or resolve issues	3.03	A	3.57	SA	+0.54
Base resolutions on manuals or tangible materials	3.31	A	3.65	SA	+0.34
Average weighted mean	**2.88**	**A**	**3.53**	**SA**	**+0.65**

Note. WM = weighted mean; Int. = interpretation; SA = Strongly Agree; A = Agree; D = Disagree. Change = post-test minus pre-test.

Test of the hypothesis

The paired-samples t-test at a 0.05 level of significance (Table 6) yielded a computed t of 9.78, which exceeds the two-tailed critical value of 2.045 (df = 29; $p < .001$). The mean rating rose from 3.03 (SD = 0.42) to 3.63 (SD = 0.20), a mean difference of 0.61 (95% CI [0.48, 0.73]), with a large effect size (Cohen's d = 1.79). The null hypothesis is therefore rejected: there is a significant increase in students' interactive learning management system across problem determination, problem analysis, and problem resolution after the case study method was implemented.

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Volume 1 Issue 3 Pages 2106-2118

Table 6. Paired-samples t-test of pre-test and post-test ratings

Statistic	**Pre-test**	**Post-test**
Mean	3.03	3.63
Standard deviation	0.42	0.20
Variance	0.178	0.038
Observations (indicators)	30	30
Pearson correlation	0.611	
Mean difference (post − pre)	0.61	
95% confidence interval of the difference	[0.48, 0.73]	
Hypothesized mean difference	0	
Degrees of freedom	29	
t statistic	**9.78**	
t critical (two-tailed, α = .05)	**2.045**	
p (two-tailed)	1.09×10^{-10}	
Effect size (Cohen's d, paired)	1.79	

Note. The unit of analysis is the 30 indicator-level weighted means (10 per dimension), not individual respondents.

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DISCUSSION

The main finding is that students rated their interactive learning management system significantly higher after the case study intervention, and the gain appeared in all three dimensions. This is consistent with the view that case-based learning moves students from recalling knowledge toward interactive learning, evaluation, and application (Barker, 2009; Psotka, 2012), and it is in line with the expectation that institutions should develop the thinking skills that employers look for in graduates (Bassham et al., 2013; Sulaiman et al., 2008).

In problem determination, the pre-test ratings were weakest on indicators that call for systematic, evidence-based work: dissecting statements and factual data and using an objective approach. These are the indicators that showed the largest gains. A plausible explanation is that case discussions require students to separate facts from assumptions and to look beyond symptoms to underlying problems, though the present design cannot isolate which feature of the intervention produced the change. The slight decline in openness to collaboration, from an already high 3.80 to 3.64, may reflect a ceiling effect or students' firsthand experience of the difficulties of group work during case discussions. The study did not examine this, and the interpretation should be treated as tentative.

In problem analysis, the largest gains were in practical analysis, analysis based on concepts and theories, and the use of tools such as SWOT. This suggests that cases gave students an occasion to apply strategic management frameworks to concrete business situations. Even so, theory-based analysis remained among the lowest-rated post-test indicators (3.29), which indicates that students still need more explicit guidance in linking concepts and theories to case facts.

Problem resolution started as the weakest dimension. Students initially tended to rate themselves lowest on the long-term and forward-looking aspects of resolving problems, namely long-term resolutions, contingency planning, and monitoring and evaluation. Although these indicators improved considerably, monitoring and evaluation of resolutions remained the lowest post-test indicator (3.04). A possible reason is that classroom case discussions typically end at the recommendation stage, so students seldom see how their chosen options work out. Case activities that include follow-up or outcome analysis may help address this.

Implications and recommendations

Based on the findings, the following are recommended:

1. Adopt and incorporate the case study approach into the current curricula of the Business Administration program, particularly in strategic management modules.

2. Emphasize decision-making and analysis tools, such as SWOT and root cause analysis, in strategic management topics so that students gain a thorough situational understanding of how to address business problems.

3. Give particular attention to the indicators that remained weakest after the intervention: monitoring and evaluating resolutions, contingency planning, long-term resolutions, and analysis grounded in concepts and theories.

4. Encourage instructors to make full use of online and offline library resources, including scientific publications, so that students have a foundation and starting point for their problem-solving abilities.

5. Provide on-campus training, workshops, or seminars to improve students' interactive learning management system, and suggest off-campus activities that help them develop this ability.

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6. Conduct further studies on other techniques or activities that may enhance students' interactive learning management system.

Limitations

Several limitations should be considered. First, the design had no comparison group, so the gains cannot be attributed to the case study method with certainty; maturation, other coursework, and repeated exposure to the questionnaire may also have contributed. Second, the outcomes were self-reported perceptions rather than performance measures, and students may have recalibrated their self-assessments after the intervention. Third, the t-test was computed on 30 indicator-level means rather than on individual student scores, so the result describes change in the ratings of the indicators and does not directly estimate variation among students. Fourth, the sample was purposively selected from one college and was predominantly female and Marketing majors, which limits generalization. Future studies should use a comparison group, student-level analysis, and objective measures of problem-solving performance, such as rubric-scored case analyses.

CONCLUSION

Students' self-assessed problem determination, problem analysis, and problem resolution were all higher after the case study method was implemented. The overall increase, from 3.03 (Agree) to 3.63 (Strongly Agree), was statistically significant, and the null hypothesis of no difference was rejected. The largest improvements occurred in the indicators that were weakest at the start, particularly objective determination of problems, practical and theory-based analysis, and long-term resolution and contingency planning. These findings suggest that the case study method is a promising way to strengthen the interactive learning management system of Business Administration students in strategic management courses. Given the design limitations, controlled studies are needed to confirm the effect.

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