

Research Article**FOSTERING MARKETING STUDENTS' CRITICAL THINKING SKILLS
THROUGH CASE METHOD**

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Abstract

Critical thinking is one of the most important skills that business students need to develop to survive the everchanging business environment but was given less attention in the higher education system in the Philippines. Hence, a study using the case method was conducted to improve the critical thinking skills of business students enrolled in the Marketing Management subject during the second semester of the academic year 2022-2023. A descriptive mixed method, classroom action research design anchored on David Kolb's experiential learning cycle theory was employed. With the use of two adopted survey questionnaires, data on students' attitudes toward critical thinking and the perceived effects of the intervention on their critical thinking ability were collected. Results showed highly significant differences before and after the implementation of the intervention on the student's attitudes toward critical thinking (p -value = 0.000), the perceived effects on their critical thinking ability (p -value = 0.000), and their critical thinking test scores (p -value = 0.000). A highly significant relationship (p -value = 0.006) between students' attitudes towards critical thinking and its perceived effects on their critical thinking ability was also noted. Students' attitude influences the perceived level of their critical thinking ability such that as their attitude increases, their perceived critical thinking ability also increases. Learning activities such as analyzing business cases and writing case material for existing businesses in the industry have the potential to improve the critical thinking skills of the students. Future researchers may also try to test the effectiveness of the case method in improving the critical thinking skills of students of other course programs. They may also try this case method as a teaching strategy in other subjects that require the development of the critical thinking skills of students. The concerned authority may opt to use the findings of this study in crafting a teaching-learning policy that aims to improve the critical thinking skills of undergraduate college business students.

Keywords: Business Education, Teaching-Learning Strategy, Case Analysis, Business Skills

Introduction

Critical thinking is one of the vital skills that business students need to develop to survive the ever-changing business environment they will be working in as a business practitioner discipline (Calma & Davies, 2020). Critical thinking of college graduates is one of the sought-after soft skills that employers consider when hiring employees (Nakatani & Wynekoop, 2020; Jones et al., 2018). Its value to students to become successful, not only in work, but also in education, and life was further confirmed by the recent study conducted by Sellars and colleagues in 2018.

However, a literature review conducted by Calma and Davies (2020) revealed that critical thinking in business education is an under-researched area compared to other fields. Specifically, they noted that there is very limited literature on the assessment and measurement of critical thinking and on improving the understanding of critical thinking in business learning and practices (Bandyopadhyay & Szostek 2019). Thus, incorporating critical thinking in business education will improve students' managerial practices (Bloch & Spataro 2014) and employability (Carr et al. 2018).

This skill has become increasingly important to help them cope with the uncertainties brought by the pandemic, and also to enable them to distinguish facts in a world proliferated with 'fake news' (Khidhir, 2018). Barrot et al. (2021) found that the pandemic had the greatest impact on the quality of students' learning experience. The prevalence of the COVID-19 pandemic over the past three years has caused a massive impact on higher educational institutions in the Philippines (Toquero, 2020). The different levels of community quarantines restricting face-to-face classes disrupted the traditional delivery of quality education. Virtual learning which has become a norm during the pandemic (Hoofman & Secord, 2021), limits teacher-learner activities and interaction, which thereby, caused adverse effects on the learners.

Several studies have noted the negative effects of such situations on students' learning outcomes, (Kuhfeld et al., 2020; Kuhfeld & Tarasawa 2020; Hoofman & Secord, 2021; Leeb et al. 2020; Singh et al., 2020; Becker et al., 2020; Lee, 2020; Rose, 2020), particularly on the development of their critical thinking skills, which has been identified as one of the most important outcomes of higher education courses (Dunne, 2015). For instance, Ijirana et al., (2022) noted the detrimental effects of the new educational system in Indonesia on their students' critical thinking ability. In the same case, students in the Philippines have also suffered the same dilemma due to an almost three-year academic loss caused by the restrictions imposed on face-to-face classes during the pandemic. This results in poor critical thinking ability of students as evidenced by the majority of unprepared graduates to face life and work in the 21st century (Basillote, 2022).

The country's gradual resumption of face-to-face classes is a good opportunity to improve the student's critical thinking skills and other learning outcomes that weakened due to the onslaught of the pandemic on students' learning. Teachers can take advantage of the various teaching-learning methodologies including the use of traditional lecture-discussion, problem-based learning, case-based learning, digital game-based learning, and mobile and computer-based learning (Hafeez, 2021) to address this learning gap.

Among these teaching-learning methods, Azid et al., (2020) found that the case-based teaching-learning approach can help develop students' skills in critical thinking, problem-solving, and decision-making. This method is a participatory, discussion-based, powerful, and active teaching and learning instructional tool (Ito & Takeuchi; 2020; Lima & Fabiani 2014) that involves engaging students in developing their skills in generic employability (Chan et al. 2018; Virtanen & Tynjälä 2019), critical thinking, communication, and group dynamics (cctl.illinois.edu, n.d.). It is also a student-centered teaching method (Aaboen et al. 2022) where a case will be given to the students for them to analyze and recommend potential solutions to it (University of Illinois Board of Trustees, 2020). Thus, enabling students to apply their theoretical knowledge to real-world scenarios (Ameta, Tiwari, and Singh, 2020) and relate their experiences to the learning process (Rizali et al., 2013).

It is in this note that this case-based teaching-learning method was utilized by the subject instructor to determine its effectiveness in improving the critical thinking skills of business students enrolled in the Marketing Management subject during the second semester of the academic year 2022-2023. Specifically, this action research has described the students' attitude toward critical thinking before and after the implementation of the case method; determined the effect of using the case method on students' perception of their critical thinking ability, and determined the relationship between students' attitudes towards critical thinking and their self-perceived effect of the case method on them. The findings of this study would contribute to the limited available literature on improving the critical thinking skills of business students in higher education.

Research Methodology

The study employed a descriptive mixed method, classroom action research design in determining the effectiveness of using the case method in improving the critical thinking skills of business students enrolled in Marketing Management subject during the second semester of the academic year 2022-2023.

The conceptual framework of this study was anchored on David Kolb's theory of the experiential learning cycle as shown in Figure 1. Experiential learning involves learning from experience (Cherry, 2022). This learning style takes a more holistic approach through a four-step learning process (Experience – Reflect – Think – Act) that is applied iteratively in every interaction of creating knowledge through the transformation of experience (Kolb, 2020).

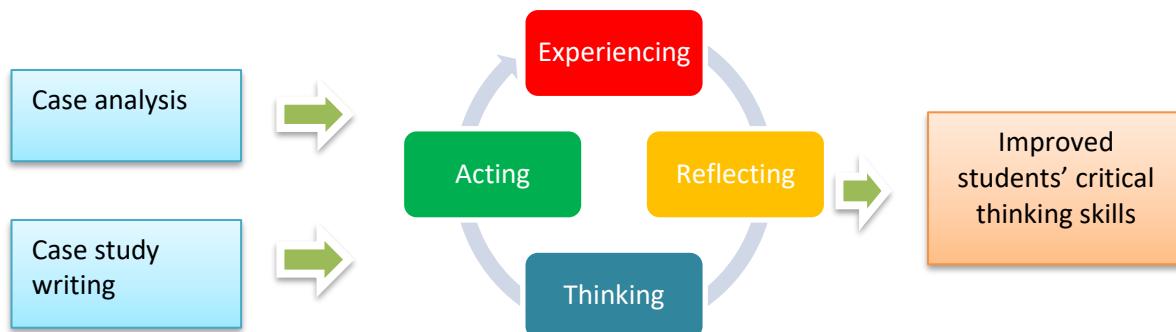


Figure 1 Conceptual framework of the study

In this study, the subject instructor used two different case-method teaching strategies to improve students' critical thinking skills. These approaches enabled students to see business problems and solutions through the lenses of a case analyzer and a case study writer.

The first strategy was executed through the conduct of a series of case analyses wherein students were assigned case study materials of different businesses which they were tasked to study, analyze, and then recommend possible solutions to its business problems. In this approach, students could learn to think critically through simulation such that students have **experienced** the role of the marketing manager of the assigned business and act accordingly as if they are. The facts given in the case data served as their basis for **reflection** which was done through group analysis and brainstorming. From their exchanges of ideas, the group of students will then **think** of all possible alternative courses of action that they can submit as recommendations to the management which will serve as the latter's basis of the appropriate **action** to take to solve the identified problems of the business under study.

The other strategy used in this study involves the students' actual writing of a case study material of their chosen existing business in the province. Students under this approach have **experienced** the actual gathering of data for their chosen business case directly from the business owners. Such experience taught them and made them **reflect** on the difficulties and opportunities that business owner faces in their day-to-day business operation in real-world scenarios. The data they gathered served as their basis for **thinking** about the root cause of the business problems highlighted in their written case study material. Knowing the root cause of the problem can lead them to a decision to **act** on determining the possible solutions they could recommend to the business owners.

Sampling procedure and data collection techniques

Among all the five sections of third-year students enrolled in the Bachelor of Science in Business Administration (BSBA), the BSBA 3A section obtained the lowest average score ($\bar{X} = 46.68$) on the Critical Thinking Test administered to them on the first day of class during the second semester of the academic year 2022-2023. Hence, this section was selected to undergo the intervention to improve their critical thinking skills.

With permission secured from the Dean of the Institute of Management, and prior and informed consent obtained from the participants and their guardians, the researcher proceeded with the conduct of the study. Participants were also assured of the confidentiality of their information during their participation and were given the option of withdrawing at any time from participating in the study if in case they felt uncomfortable.

The study employed total enumeration as the sampling technique in determining the sample size of the respondents. Since this study is action research aimed at assessing the effectiveness of using the case method in improving the critical thinking skills of business students, all the BSBA 3A students who have enrolled in the Marketing Management (MKM 227) subject were tapped as respondents.

The attitude of students towards critical thinking was determined using an adapted questionnaire used by Sarigoz, (2012), which has been tested for its internal reliability with a Cronbach Alpha coefficient of 0.87. The questionnaire has 21 statements on critical thinking skills using a five-point Likert scale with the verbal interpretation as follows:

1= never

2= rarely

3= sometimes

4= Often

5= Always

To determine the effect of the case method on students' perception of their critical thinking ability, the study used the Critical Thinking Ability (CTA) Questionnaire based on Halpern's Self-Ratings of Critical Thinking Skills and Dispositions (1998), which was adapted from the instrument used in the study of Nakatani and Wynekoop (2020). The instrument was already tested for reliability with a Cronbach's Alpha of 0.84 indicating that it is reliable. It used a seven-point Likert scale, with the following verbal interpretation:

1 = Not at all descriptive of me

2 = Slightly descriptive of me

3 = Somewhat descriptive of me

4 = Neither nor descriptive of me

5 = Almost descriptive of me

6 = Descriptive of me

7 = Very Descriptive of me

Meanwhile, the effectiveness of using the case method in improving the critical thinking skills of business students was measured with the use of the Free Critical Thinking Test questionnaire developed by Assessment Day Ltd. in the United Kingdom (<https://www.assessmentday.co.uk/watson-glaser-critical-thinking.htm>). This test is based on the Watson-Glaser Thinking Appraisal (W-GCTA), one of the most common types of critical thinking tests originally developed by Goodwin Watson and Edward Glaser. The test is divided into five sections as follows:

Arguments Test	-	25 items
Assumptions Test	-	14 items
Deductions Test	-	21 items
Inferences Test	-	14 items
Interpreting Information Test	-	12 items
Total		86 items

Statistical analysis

Statistical tools used in this study are frequency count, percentage, weighted mean, paired-sample t-test, and Pearson Product Moment Correlation Coefficient. The Likert-type scale was utilized in the questionnaire to determine the students' perception and attitude as well as the effectiveness of the case method on their critical thinking skills. Each respondent has five (5) and/or seven (7) alternative responses for each statement. The final score for each construct was obtained by calculating the weighted mean score for each of the items under each construct. A reverse score was applied to negative statements. The numbers of the five-point scale are defined below:

- 4.21-5.00 - Always
- 3.41-4.20 - Often
- 2.61-3.40 - Sometimes
- 1.81-2.60 - Rarely
- 1.00-1.80 - Never

For the seven-point scale, the following evaluation of the computed weighted mean was used in the study:

- 6.16-7.00 = Very Descriptive of me
- 5.30-6.15 = Descriptive of me
- 4.44-5.29 = Almost descriptive of me
- 3.58-4.43 = Neither nor descriptive of me
- 2.72-3.57 = Somewhat descriptive of me
- 1.86-2.71 = Slightly descriptive of me
- 1.00-1.85 = Not at all descriptive of me

The increase in the student's learning activities and the outcome were measured based on the difference in their scores on the pre-test and post-test. Scores of business students in their case analysis based on the attached rubrics were also used in determining the improvement of their critical thinking skills. Students' feedback on the intervention used was also gathered through follow-up interviews for further improvement of the intervention used. Feedback from the students was presented in actual verbatim.

Results and Discussion

Students' attitude towards critical thinking before and after the intervention

With a p-value of 0.000 as shown in Table 1, results show that there is a highly significant difference in the attitude of the respondents towards critical thinking before and after the use of the case method in teaching Marketing Management subject.

Table 1 Differences in the attitude of respondents toward critical thinking

Variable	Mean	Std. Deviation	t-Value	p-value	Result
Attitude (before)	3.36	0.31			
Attitude (after)	4.05	0.30	5.99	0.000	Highly significant

Students' attitudes towards critical thinking before the case method implementation (mean 3.36, SD = 0.31) increased after the intervention was used for them (mean = 4.05, SD = 0.30). The increase in the mean rating of the students after the intervention indicates a change in their attitude toward critical thinking skills through the use of the case method as a teaching strategy in their subject.

Before the use of the case method, students gave the highest mean ($x=3.70$) rating to the item "*while a matter is explained, I can concentrate on the matter together with my thoughts*" in the questionnaire with a verbal interpretation of often. This implies that students oftentimes have this kind of attitude toward this particular aspect of their critical thinking skills. Students can focus their attention on dealing with any matter at hand provided that it is explained to them which indicates the need for further assistance for them to understand the matter at hand.

On the other hand, the item that has the lowest mean of ($x=2.67$) with a verbal interpretation of sometimes is "*when I encounter a matter, I consider it with prejudice without thinking*". This seems to indicate that students sometimes see and react to things and situations in a biased way without first understanding the whole story behind an issue.

Meanwhile, after the use of the case method, students gave the highest mean ($\bar{X} = 4.53$) rating to the item "*When I encounter a matter, I can be more elaborate, thanks to my thoughts*" in the questionnaire with a verbal interpretation of often. This seems to imply an increase in the confidence of the students in dealing with a matter which can be attributed to the experiences they got from using case method learning. The same is true with the findings in the study of Sarigoz (2012) wherein the item that students gave the highest rating is "*By means of my thoughts, I can make comments and can judge the matters*" which indicates that students have self-esteem regarding critical thinking.

Students' attitudes toward critical thinking changed as a result of the case method. In fact, some of them said:

“We were able to conquer our fear of data gathering and were able to write a comprehensive business case. We also learned the different parts of a case study.” –Group 3

Another student also noted that he learned to look at all angles of the case in analyzing it to arrive at a more concrete understanding of the problem and its root cause as a result of doing the case analysis activity.

Interestingly, the item that got the lowest mean of ($x=2.67$) before the intervention is also the same item that got the lowest mean rating of ($x=2.68$) after the case method implementation with a verbal interpretation of sometimes. This shows that students sometimes see and react to things and situations in a biased way without first understanding the whole story behind an issue. The same item was computed with the lowest mean rating in the study of Sarigoz (2012) which found that students tend to prejudice a matter without thinking, trusting their feelings unconsciously.

Perceived effects of case method on students' critical thinking ability

Table 2 shows an increase in the perceived effect of the case method on students' critical thinking skills before (mean=4.12, SD=0.65) with a verbal description of “*neither nor descriptive of me*”, and after (mean=5.36, Sd = 0.67) with a verbal interpretation of “*descriptive of me*” the intervention.

Table 2 Differences in the perceived effect of the intervention on the respondents

Variable	Mean	Std. Deviation	t-Value	p-value	Result
Effect (before)	4.12	0.65			
Effect (after)	5.36	0.67	7.33	0.000	Highly significant

With a p-value of 0.000, the computed change in the perceived effects is highly significant. This implies that the case method has caused a positive change in the way students perceived their critical thinking ability which could also be attributed to their change of attitude towards critical thinking.

When asked about the learnings they gained from the case study analysis and presentation, students shared the following:

“Case analysis activity challenged my critical thinking and problem-solving skills in a safe and open learning environment. I can now find solutions to complex problems with foresight and confidence.” – Student 6

“Case analysis developed my confidence in dealing with different problems and taught me an important lesson about trusting myself and my ability that I can solve them properly” – Student 22

“Analyzing different business cases makes it more rational and logical in looking at every situation.” – Student 10

However, the findings in the study of Nakatani and Wynekoop (2020) suggest that students tend to inflate their self-perceived critical thinking ability which was not supported by their lower critical thinking test

scores. In the case of students in this study, both their attitude towards critical thinking and the perceived effect of it on them have increased as a result of the intervention.

Effects of case method on students' performance in critical thinking test

With the computed p-value of 0.000 (SD= 3.95) using the Paired Sample T-Test (see Table 3), there is a highly significant difference between the student's total pre-test and post-test scores. A mean difference of 26.46 was observed between the students' mean scores in their pre-test and post-test.

Table 3 Differences in the critical thinking pre-test and post-test scores of respondents

Critical Thinking Tests		Mean	Std. Deviation	t-value	p-value	Result
Pair 1	Argument Test	-9.11	2.06	-26.82	0.000	highly significant
Pair 2	Assumption Test	-4.32	1.31	-20.03	0.000	highly significant
Pair 3	Deduction Test	-5.81	1.94	-18.21	0.000	highly significant
Pair 4	Inferences Test	-3.97	1.46	-16.53	0.000	highly significant
Pair 5	Interpreting Info Test	-3.24	1.23	-15.99	0.000	highly significant
Pair 6	Total Pre-test - Post-test Score	-26.46	3.95	-40.76	0.000	highly significant

Among the five component tests, the students achieved the highest improvement in the argument test after recording an increase of 9.11 points from the mean scores of students in their pre-test ($\bar{X} = 13.2$), thus resulting in the students' post-test mean score for the 25-item argument tests to $\bar{X} = 22.3$. In terms of the assumption test, an increase of 4.32 mean difference was noted from the pre-test mean score of $\bar{X} = 7.2$ which became $\bar{X} = 11.5$ in their post-test.

Likewise, the table also shows an increase of 5.81 mean difference between the pre-test and post-test mean scores of the students in deductions tests. In the same manner, an increase of 3.2 mean difference from the pre-test mean score of students ($\bar{X} = 7.1$) resulted in a mean score of $\bar{X} = 11.1$ in their post-test for inferences tests. An increase of 3.2 mean difference was also noted from the mean score of the students in their pre-test ($\bar{X} = 6.6$) on interpreting information, after obtaining a mean score of $\bar{X} = 9.9$ in their post-test.

The highly significant difference between the scores of pre-tests and post-tests of the students on the administered critical thinking test can also be attributed to the noted improvement in their performance in each of the five sections of the critical thinking tests administered to them. The increase in the students' post-test mean scores for the 25-item argument tests indicated an improvement in their critical thinking ability in analyzing an argument on whether it is strong or weak. Students have also shown improvement in their critical thinking ability in terms of assessing a statement whether an assumption has or has not been made and also in deducing whether the conclusion made follows or does not exactly follow the given statements. In terms of making inferences, the results also show an improvement in the critical thinking ability of the students in

assessing the degree of truth of the presented inferences. Students' critical thinking ability in interpreting information on whether the proposed conclusions logically flow beyond a reasonable doubt from the information given to them also indicates an improvement based on the results of their test scores.

The result of this study is consistent with the findings of Azid et al. (2020) that the case-based teaching-learning approach can help develop students' skills in critical thinking, problem-solving, and decision-making. Bonney (2015) also concluded that a case study is significantly more effective than other teaching modalities at increasing student examination performance in science courses. The same is true with the findings of Bi et al. (2019) who concluded that the case-based learning method is more effective in improving the problem-solving ability of graduate students in medical oncology.

Relationship between students' attitude toward critical thinking and perceived effects on critical thinking ability

With a computed p-value of 0.006, results showed a highly significant relationship and low positive correlation ($R=0.468$) between the attitude of the respondents towards critical thinking and the perceived effect of the use of case method as a teaching strategy for Marketing Management subject to third-year BSBA students. This suggests that as the attitude of students toward critical thinking increases, their perceived effects of the intervention on their critical thinking ability also increase.

Table 3 Relationship between students' attitude towards critical thinking and perceived effects on critical thinking ability

Variable	Mean	Std. Deviation	R-Value	R Square	p-value	Result
Attitude (after)	5.36	0.67				
Perceived Effect (after)	3.85	0.29	0.468*	0.219	0.006	highly significant

a: dependent variable: Effects of Intervention (After)

b: Predictors: Attitude towards critical thinking (after)

The findings seem to indicate that the use of the case method in improving the critical thinking skills of students was effective as evidenced by the positive change both in their attitude and perceived critical thinking ability.

Conclusions

Students' attitude toward critical thinking influences the perceived level of their critical thinking ability. Learning activities such as analyzing business cases and writing case materials of existing businesses in the industry have the potential to improve the critical thinking skills of the students. Business students' critical

thinking skills can be improved with the use of the case method in studying a business subject like Marketing Management for undergraduate college students. The findings of this study could serve as a basis for educators and policymakers in devising and crafting a policy on the adoption of the case method as a teaching strategy for improving the critical thinking skills of students across all courses in higher education.

Suggestions

Future researchers may also try to test the effectiveness of the case method in improving the critical thinking skills of students of other courses aside from business-related courses. They may also replicate this study using a larger sample size to improve the generalizability of its results. They may also try this case method as a teaching strategy in other subjects that require the development of the critical thinking skills of students. The concerned authority may opt to use the findings of this study in crafting a teaching-learning policy that aims to improve the critical thinking skills of undergraduate college students. The policy could revolve around how the educators will use the two approaches of case method such as case analysis and case study writing. Educators may use case analysis by giving sample case materials based on real-world scenarios in their respective fields to be studied and analyzed by the students. The other way is by teaching and guiding the students on how to write case study materials from case conceptualization to data gathering, to case analysis, and up to packaging of the entire case study materials.

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