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The Perceived Influence of Case Method on Students' Performance and Critical Thinking in Business Studies

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Abstract. Business schools have globally applied the case method as an initiative to assimilate real-life business knowledge and skills. Researchers have found that the case method, compared to other teaching methods, provides an excellent opportunity for students to participate in the analysis of different business situations, as well as to invent solutions, generating interest and positive motivation towards learning. This study aimed to examine students' perceptions about the influence of the case method on students' performance and critical thinking. The sample included 141 freshman undergraduate students from Business Informatics and Economics programs at Epoka University enrolled in a management course that utilizes the case study method. Forty-seven questionnaires were analyzed through descriptive and inferential statistics. Questions were divided in three categories: general perception, performance, and critical thinking. The result showed a positive general perception of the case method. Additionally, the study found a positive perception on students' performance and critical thinking through the case study method.

Keywords: Case method; Performance; Critical thinking; Harvard Business School; Epoka University

1. Introduction

Throughout the years, teaching methods have undergone a massive change, and a movement has been noticed from teacher-focused methods to student-centered approach of learning and education (Davis & Wilcock, 2003). Nowadays, teaching

does not only consist of explanations, but it has taken the form of a conversation, as well as the shape of exchanging ideas between professors and pupils. This looks more like a leadership process that involves leaders (instructors) and followers (students), which by means of exchange of information may invert positions causing a “dancing relationship” with reciprocal influence. In other words, from unilateral teaching (i.e. professor to students) the logic becomes that of the learning co-creation. Different universities and countries have applied the case study learning strategy has been applied in several areas. Schools of law, business, and health have used cases as an alternative to teacher-based learning methodology and increased the interactivity of courses by using real-life industry problems where solutions are sought out by students (Lee et al., 2009). Business Schools have effectively used the case method as an initiative to assimilate real-life business knowledge and skills from previous experiences and problems that companies face daily.

Although the importance of the case method is relevant, especially in applied sciences, still research universities face difficulties in implementing such a method onto large classrooms. There are even more extreme views that consider case studies as “research destroyers”, accusing the case method as lacking research support and being superficial (Shugan, 2006). Yet, concepts are the building blocks of cases, and concepts are supported by theory, likewise the latter by research. Additionally, using the case method does not mean to abandon theory and research; in contrast, the practical sessions (supported by cases) and the theoretical ones (supported by research) can nurture each other by contributing to the capacity building of students. Recent movements in academia, coming from applied sciences universities, are designing integral approaches based on competence-oriented-research-education that enhances the learning process and organizational resilience (Schoiswohl, 2016).

The existing body of research provides limited evidence in understanding the benefits of the case study method. Moreover, among those few current studies none of them include a sample of business students. With regards to performance, only one article was located that considered the influence of case method (in biology courses) on improving student performance, knowledge, skills, and other learning achievements (Bonney, 2015). The empirical research investigating the relationship of the case method and critical thinking is more optimistic. In his paper, Grossman (1994) shows how psychology students are encouraged to think more critically about course theories when provided with case studies and team-based learning. The case method has proven to be successful in promoting critical thinking abilities, even in online classes (Brooke, 2006). In a more generalist perspective, Popil (2011) reveals the benefits of case method for assisting nurse educators in facilitating active learning, improving problem-solving skills of students, and developing critical thinking for healthcare professionals. However, what is missing are studies that combine simultaneously a general perception of students about the case method, and how the latter impacts performance and critical thinking. When business students seek such studies, we must especially be contented with general information coming from the case method platform of Harvard Business School. Consequently, not being able to find similar studies, the current research aimed to measure the perceived influence of the case study teaching method on students’ performance and critical thinking. The inclusion of

case studies as a core method in the learning process is a recent attempt at Epoka University (Department of Business Administration). The case method has been applied in teaching (e.g. teaching with cases) and research (e.g. master theses).

The main research question addressed to gather the data is structured in the following manner:

RQ1: What is the perceived influence of the case study teaching method on students' performance and critical thinking?

The objectives of this research are: to discover the *general students' perception* of the case study teaching method, to find out the perceived influence of case method on the *performance* of students (i.e., GPA), to find out the perceived impact of the case method on students' *critical thinking*. Figure 1 represents the research model of this study.

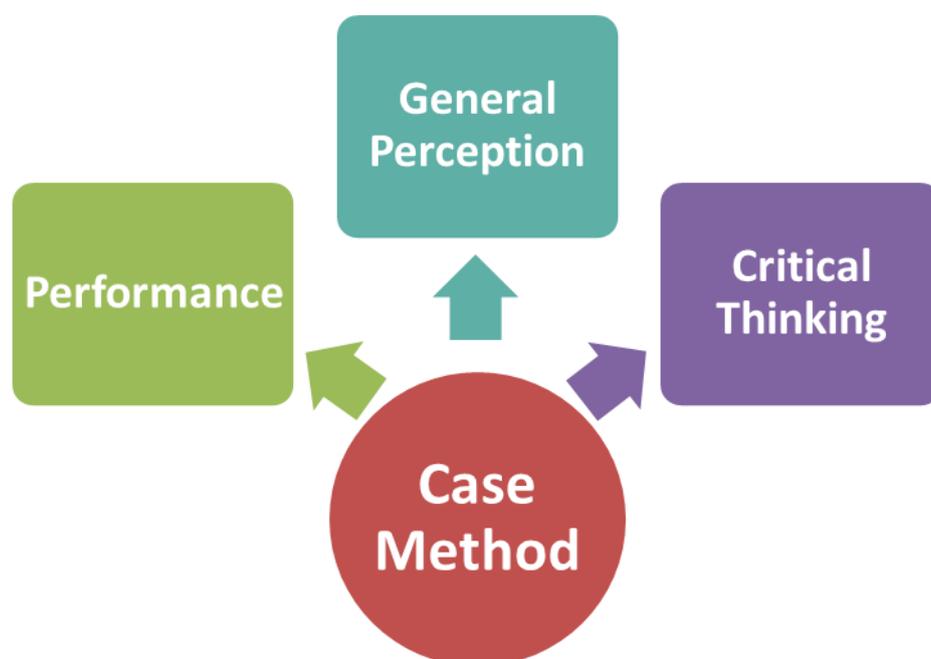


Figure 1: The research model

2. Origins of the case study method: from performance to critical thinking

A case study is a historical study of a situation that contains neutral, authentic and often incomplete text about a real-life business problem that managers face at a particular moment (Barnes et al., 1994). The presentation of cases usually takes a narrative form that encourages participation and requires a solution to a given problem. The content of a case study centers around the main actor (entity), it includes different types of data and analysis, and other small unique details must be captured, inferred and analyzed. These characteristics mean that it is the students themselves who need to tease the important elements out of the true sloppiness of contradictory and complex data that exist inside cases. Narrative cases provide the background of an issue, and it is in this background that the

students are given the ability to identify different alternatives and engage in evaluations as to why these results occurred over other more optimal solutions. According to Labov (1972), a case study typically addresses three questions: 1) "What was this about?"; 2) "What, who, when, and where?"; 3) "What happened then?". Case studies have an abstract and a title, orienting the reader to answer the three questions to present what happened and the problem that needs to be solved. Cases do not show the problem clearly, and they do not lead to a single answer. Compared to examples that are used in lectures and textbooks for discussion, cases are different in that they contain facts and descriptions but provide no analysis of the problem (Volpe, 2002, 2015). A good case study should be "the vehicle by which a piece of reality is brought into the classroom to be worked over by the class and the instructor. A good case keeps the class discussion grounded upon some of the stubborn facts that exist in real life situations" (Lawrence 1953, p. 215). This means that in large classrooms, it is very challenging to keep an interactive class discussion. While used widely in subjects such as business, law, and medicine, the case studies teaching methodology may also be an effective tool in many other areas. According to Davis (1993), an effective case study needs to tell a real story and raise an issue. It must contain elements of conflict, promote empathy, but does offer a clear right answer. Finally, it must encourage students to think critically, portray the actors as existing in moments of decision making, all the while providing enough data and be relatively concise. The case method originated back in 1870 at Harvard University. Christopher Columbus Langdell was the founder of the case methodology while he was the Dean of Harvard University Law School (Shugan, 2006). According to Shulman (1986), Professor Langdell believed that students should not memorize the laws written on the book, but instead they should be able to learn by applying the law in different situations. By using case studies, the students would be helped to improve their legal reasoning, as well as acquire skills that aid them in real life situations. Later in the early 20th century, the case method was adopted in the Harvard Business School. Motivated by the success that the case method had at Harvard Law School, the Harvard Business School (HBS) became the first Business educational institution to apply this method. A Harvard professor named Arch Shawn was responsible for the implementation of the case method to the Business School in 1911. The implementation of the case methodology in business schools emerged fast because of the lack of materials related to business theory (Buckles, 1998). Following the successful implementation of this method at Harvard University, the case study method become popular all over the world, with its application reaching not only in law or business but also in medicine and many other fields of study.

In his research, Cruikshank (1987) describes how the case method was implemented at the HBS. Professor Arch Shaw did not have a ready case to use with students, so he had to invite business managers in the class to share with the students their real-life dilemmas and problems. The case was divided in three sessions. In the first session, the manager would explain his problem and give answers to the students' questions related to the case. A second session was held a couple of days later where the students would deliver written recommendations of possible solutions after analyzing the problem. In the third session, the manager would discuss student recommendations. The method of providing the cases to

the students evolved throughout years at HBS. The cases were prepared before class hours and then delivered into a written format showing a real-world problem of mainly senior business executives. In an evaluation of the case study teaching method at HBS, Christensen and Hansen (1987) reflected on how this method empowered students to create their own framework of understanding, approaching and dealing with real-world business problems. According to Christensen and Hansen (1987) there are six core advantages in implementing a case method:

- a) The case method empowers students to find and build up their own structure for dealing with business issues.
- b) The case method imposes the opportunity of self-learning.
- c) Every class provides the students with new experiences.
- d) The case method creates an interface that connects teachers with the business world.
- e) The case method supports innovation and critical thinking.
- f) The case method is economically efficient.

Nadkarni and Stich (1969) explained the use of the case method by evaluating the effectiveness of the method as a tool for teaching management in McGill and Boston University. The authors based the study on their own experience in teaching management through using the case study method and support the theory by a conducting a questionnaire on the graduating students of McGill and Boston University. Study findings were different in the two institutions. At McGill University, what was observed was that the opportunities provided by the case study discussions helped students exchange ideas and made them more enthusiastic about the variety of cases and the situations that they had to deal with. Moreover, the study observed that students were highly motivated to deal with real life business situations compared to made up scenarios for teaching purpose. They furthermore appreciated the opportunity to make oral presentations or reports about the case, or to even play a role in the case discussions. Finally, students approved that the case study teaching method brings to them an exercise in finding the key issues that impact on real business situations.

On the other hand, at Boston University, the authors used a different case method. The cases handled at Boston University were focused primarily on the Top Management, and the attention in the case teaching method was more concentrated on identifying the problem than solving it. Thus, the manager had to extract the business problem in the environment they were operating in instead of the problem itself being presented straightforwardly. The cases were not as long as at McGill, but short and simple, with little quantitative data to prevent in-depth involvement with unneeded information. Students worked divided into teams and they had to handle the cases within the class. The instructor did not participate with the students, but he took notes and assisted them in clarifying the facts of the case. Nadkarni and Stich (1969) elaborate on the instructors' observations, as well as what they found through the questionnaires distributed to the students attending these classes. The main findings were that most of the

students faced difficulty and felt uncomfortable at the beginning of the course, but in the end, most of them lost that feeling and enjoyed the case studies assigned. They also found that students had a tendency to break the case into separated parts according to sales, finance and production and that those students lacking business experience always thought that there were singular right answers to each of the case studies, even when repeatedly told that no right answer existed. Finally, the students unanimously stated that the case method was a useful tool in learning management because of the opportunity it offered to relate to real business situations and to define the problems and tasks that top management faces.

Regarding performance, research concludes that business graduates, through the case methods, had acquired the knowledge and skills that a manager needed in order to define business problems properly, and find suitable solutions to them. While teaching, instructors should aim to develop both brain hemispheres of students. One of the problems with case studies is the belief that cases use only the qualitative methodology which is supposed to involve mostly the right brain. Consequently, future students' performance may suffer due to a lack of analytical skills. From the research perspective, case study research rather than a methodology is a strategy that involves both qualitative and quantitative methods and instruments (Yin, 2017). From a teaching viewpoint, "cases create opportunities for learning by flipping the hard and the soft – by being qualitative on quantitative cases and quantitative on qualitative ones.

In practice, this means teaching students to question the basis for numbers as well as the results of analysis: Where do the numbers come from? Can we trust them? When we have done our calculations, what do they mean and how much should we trust them? According to Andersen & Schiano (2014), it also means "how to do back-of-the-envelope numerical analysis, make assumptions, and use calculations to derive conclusions from descriptions that do not apparently lend themselves to numerical analysis" (p. 174). From a managerial perspective, in the future students will face real business contingencies that require critical decisions, in-depth evaluations (e.g., a SWOT analysis), and problem diagnosis (i.e., identifying the root causes of a problem). To anticipate such challenges, the case method helps students to build skills for analyzing decision scenario situations, evaluation scenario situations, and problem-diagnosis scenario situations (Ellet, 2018).

Cases still nowadays remain as narrative explorations of real-world business problems that help students accumulate experience in their academic years, and thus be more prepared for the issues that they might face as business managers or just as specialists. By applying the case method, both scientifically and artistically, students may develop their leadership potential through critical and creative thinking abilities (Greenhalgh, 2007).

Regarding critical thinking, this is a concept that has its roots from the teachings of Socrates, which were recorded by Plato. The idea of critical thinking has been defined differently by researchers because of its complex subject. Paul (1995) defines critical thinking as a determining process in which students systematically impose criteria and intellectual standards upon their thought. A shorter and more precise definition of critical thinking is described by Glaser (1941) as the process

of analyzing the facts to form a judgment. He also describes three main things that are involved in the ability to think critically. Firstly, an attitude of being disposed to consider in a thoughtfully the problems and subjects which come within the range of one's experiences. Secondly, the knowledge of the methods of logical inquiry and reasoning. Thirdly and finally, the skills in applying these methods. According to Sandstrom (2006), critical thinking can be promoted through active learning which includes, case studies, discussions, experiments, field trips, group debates, role play, and Socratic questioning. Daly (2002) shows the impact of the case study methodology on students' critical thinking. He reveals that this approach increases the written and oral communication skills of the students and makes them more collaborative and open-minded. Dealing with real life business situations, students can gain managerial skills, such as deciding, finding a solution, giving a presentation, negotiating and holding a meeting. According to Youngblood and Beitz (2001), the case method promotes critical thinking by triggering the cognitive processes.

3. Method

Design

This research has been designed through a quantitative approach, supported by a survey study and using simultaneously descriptive and inferential statistics for data analysis. Unlike other research types, this approach is structured, and the gathered data can statistically infer the population. The answers of the students were grouped together according to the type of questions. Questions were divided into three categories:

- i. The general perception that students have about case studies;
- ii. The perceived impact of case method on students' performance;
- iii. The perceived impact of case method on students' critical thinking.

Instrument

A structured questionnaire was administered to undergraduate students of Epoka University that were confident with the case method, thus fulfilling the data collection purpose. The questionnaire was distributed to the students after they were familiarized with the case study method used by their respective lecturer in the course Management and Organization, performed during the spring semester of AY 2018-2019. Hence, students had enough experience to express general opinions about the method and to answer questions related to the impact that the teaching method had on their performance and critical thinking. The questionnaire included 15 statements constructed around key terms that aimed to find the perceived influence of case method on students' performance and critical thinking. Each item provided in the questionnaire was rated on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree". The items of the questionnaire were grouped in three categories. depending on the information each item was supposed to gather, each category contained five statements. Table

1 elaborates on the grouping of each item in their respective categories: General Perception, Performance, and Critical Thinking.

Table 1: Questions grouped per each category of evaluation

Questions	Categories
1, 3, 5, 9, 10	General Information
2, 4, 6, 7, 8	Performance
11, 12, 13, 14, 15	Critical Thinking

The general part of the questionnaire included statements targeted to discover the perception of students about the case study as a teaching method. It also included concepts such as effectiveness, interest towards the course, entertainment, fast material coverage, and quality of the teaching method. Regarding performance statements, the key terms used were participation, progress, involvement, effort, and results. The critical thinking statements in the instrument utilized key concepts such as creative-thinking, problem-solving, analytical skills, communication skills, and open mindedness. This questionnaire did not include statements which asked about other factors besides how students perceive the influence of case studies in their performance and critical thinking, since it would be out of the study's scope.

Sample

This study used a convenient sampling technique. To get the most accurate responses, the target sample included freshman undergraduate students of Epoka University, who have taken at least one business course that was developed and assessed with the case method. So, the sample included 141 freshman undergraduate students from Business Informatics and Economics programs, out of a population of around 250 freshman students registered at the Faculty of Economics and Administrative Sciences. Though the questionnaire was distributed to the whole sample, only 91 responses were received. From a total of 91 collected responses, only 47 were considered valid because some students did not provide their name at the end of the questionnaire. In this way we could overcome the limitation of data duplication. In addition, some students answered the questionnaire 2 or 3 times, each of them having different answers.

Analysis

The data analysis process was divided in four main steps. The first step showed the general student perception of the case study teaching methodology. The second one placed in focus how students' performance changed when using case studies in their courses. The third step monitored changes in critical thinking when the case method was applied. In the last step, results were compared together to find differences between categories.

4. Findings from the descriptive analysis

Q1: It is more effective than other teaching methods.

This item measured whether the students believed that the case study teaching method was more effective than other teaching methods. According to Figure 2, more than half of the students (53%) agreed, 23% stayed neutral (neither disagree nor agree), and 17% of students strongly agreed with this affirmation. Only 6% of the students disagreed with the statement that using case studies in classroom learning was not more effective than using the traditional teaching methodology.

According to the results (see Appendix I), the numerical average for answers of this statement was 3.808 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0,797, the lowest of all statements, which means that the answers of students were closer to the average and not unequally spread.

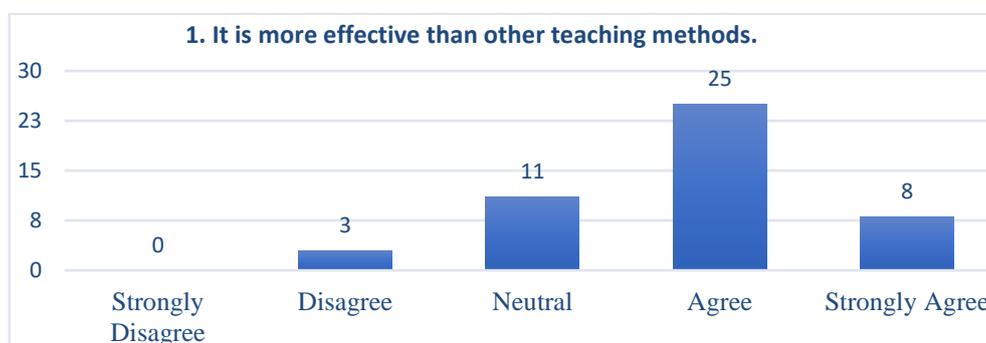


Figure 2: Case study method effectiveness

Q2: This method made me participate more in the course.

This item measured the students' belief that the use of case studies in their courses increased their participation. According to Figure 3, 40% of them agreed that when professors have used case studies to explain the lesson, they have found themselves participating more in the course. 38% of the students strongly agreed with the affirmation, 19% decided to stay neutral on their answer, and only 2% showed a disagreement with the statement.

According to the descriptive statistics table (see Appendix I), the numerical average of answers for this item was 4.148 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0.807, which is relatively low, which means that the answers of students were closer to the average, and not unequally spread.

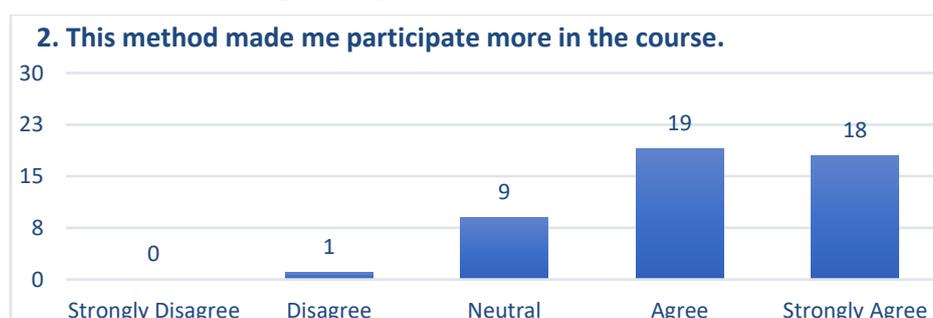


Figure 3: Motivation to participate

Q3: *My interest in the course topics has been increased.*

This statement measured whether the case study method increased the students' interest in the course topics. According to Figure 4, 40% strongly agreed with the statement, 30% of the students still agreed that cases increased their interest on the course, while 23% chose to stay neutral, 2% strongly disagreed, and 4% disagreed with the statement.

Based on the results, the numerical average of answers for this item was 4.021 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 1.010, which means that the answers of students were spread, but mostly they are closer to the average.

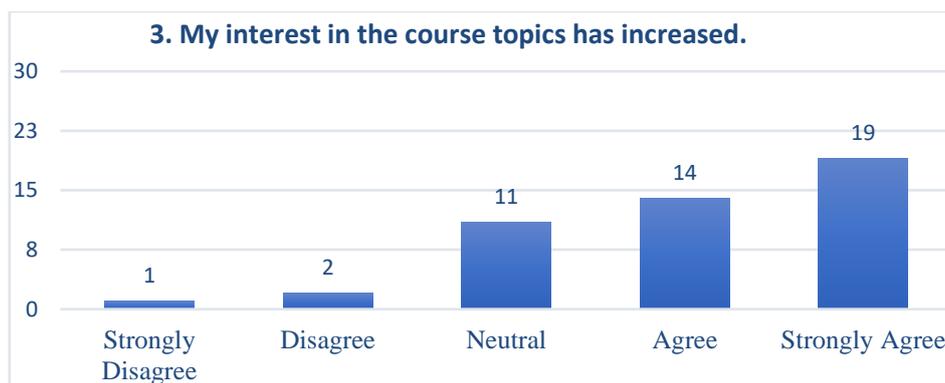


Figure 4: Interest in the topics of the course

Q4: *I made progress achieving course objectives.*

This item measured the students' belief whether they made progress achieving the correspondent course objectives with the use of case studies. According to Figure 5, 53% agreed with the statement, and 19% strongly agreed. Meanwhile, 21% stayed neutral and were not sure if the cases were the factor that has helped them in the progress of achieving course objective. Finally, 4% disagreed and 2% strongly disagreed, thus showing that using cases may not be the most important factor that may help students to make progress in the course objectives.

According to the results (see Appendix I), the numerical average of answers for this item was 3.829 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0.867, which is relatively low, which means that the answers of students were closer to the average and not unequally spread.

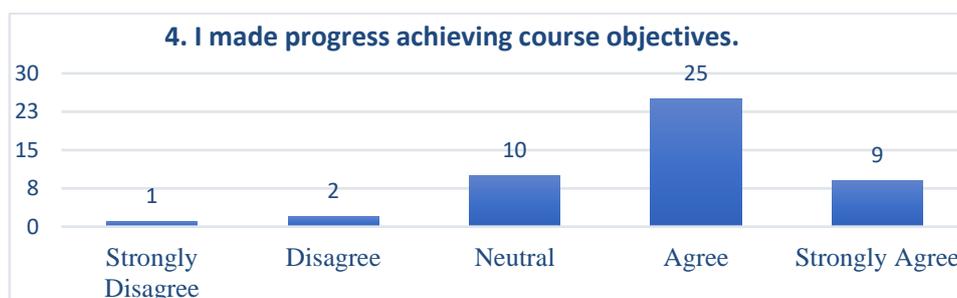


Figure 5: Progress in achieving course objectives

Q5: *The lesson is more enjoyable.*

This item measured the students' enjoyment of the lesson when using case studies. According to Figure 6, 43% strongly agreed with the statement, 38% agreed, and 15% remained neutral. Only 4% disagreed with the statement, thus showing that when professors use case studies most of the class finds the lecture more enjoyable.

According to the results (see Appendix I), the numerical average of answers for this item was 4.191 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0.850, which is relatively low, meaning that the answers of students were closer to the average, and not unequally spread.

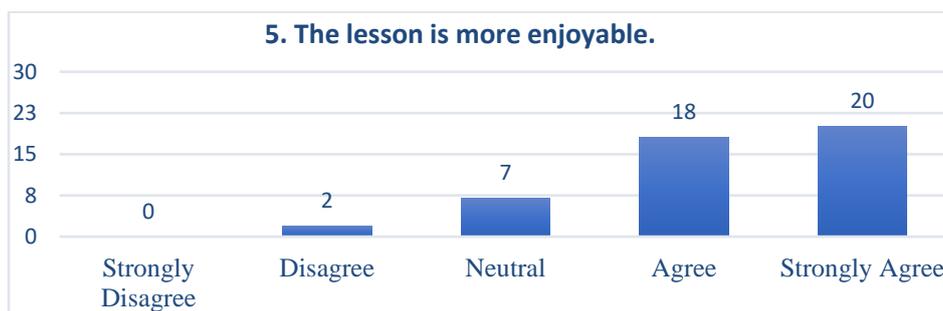


Figure 6: Lesson satisfaction

Q6: *I got more involved on what I was studying.*

This item measured the students' involvement on the content they were studying through the use of case studies. According to Figure 7, 45% of respondents strongly agreed, and 36% agreed with this statement. Only a small number of students (17%) chose to neither disagree nor agree with the statement, while only 2% answered that the use of case studies as a teaching methodology has not impacted their involvement in what they are studying.

According to the results (see Appendix I) the numerical average of answers for this item was 4.234 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0.813, which is relatively low, which means that the answers of students are closer to the average, and not unequally spread.

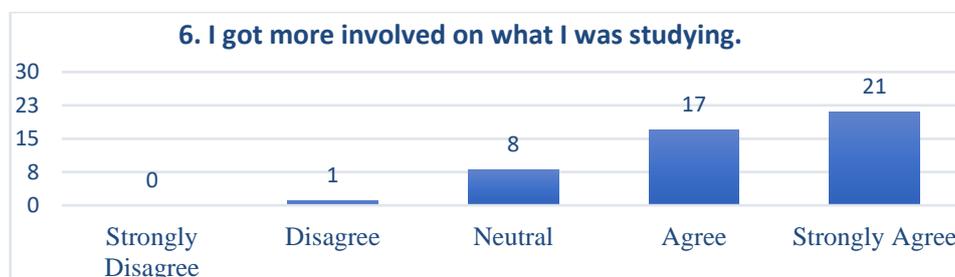


Figure 7: Involvement in the study process

Q7: *I studied and put more effort in the course.*

This item measured students' belief on the level of effort they put in the course. According to Figure 8, 42.5% of respondents strongly agreed with the statement, 42.5% agreed, 11% remained neutral, 2% disagreed and finally, 2% strongly disagreed.

Based on the results (see Appendix I), the numerical average of answers for this item was 4.212 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0.883, which is relatively low, meaning that the answers of students are closer to the average and not unequally spread.

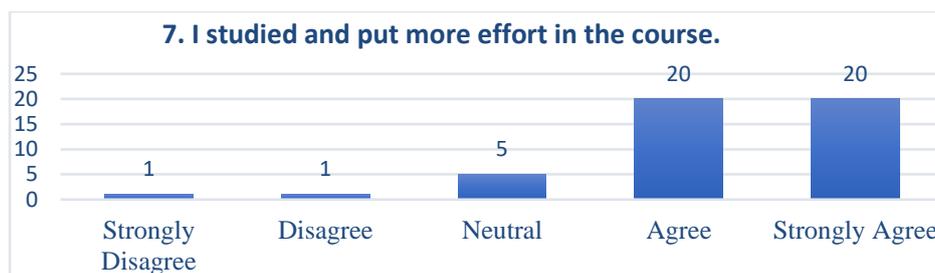


Figure 8: Study efforts

Q8: *It helped me reach high results.*

This item measured the students' belief that the case study method helped them achieve better results. According to Figure 9, 34% of students agreed and 6% strongly agreed that case method has helped them reach high results. Nevertheless, the highest percentage of students (43%) were neutral to this question and answered neither agree nor disagree. The rest (17%) disagreed and strongly disagreed that case method has helped them reach high results. Referring to the results (see Appendix I), the average of answers for this item was 3.191 out of 5, the lowest average among all other statements. The standard deviation was 1.035, which is high, meaning that the answers of students are unequally spread.

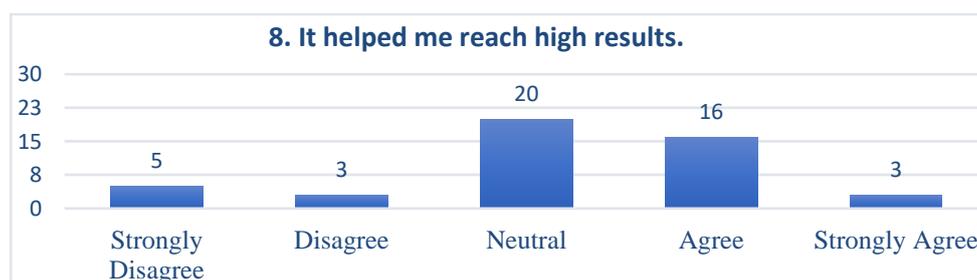


Figure 9: Performance in terms of GPA

Q9: *The pace at which all the materials of the course were covered was fast.*

This item measured the students' belief that the use of case method was more efficient with the timing of lectures, through explaining the course content at a faster pace than traditional teaching. According to Figure 10, most of the students, (62%) agreed and strongly agreed. 32% were not sure about this statement and neither agreed nor disagreed. Finally, 6% assumed that the pace at which the materials of the course were covered was not fast.

Regarding the results (see Appendix I), the numerical average of answers for this item was 3.829 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0.916, which shows that most of the answers are close to the average.

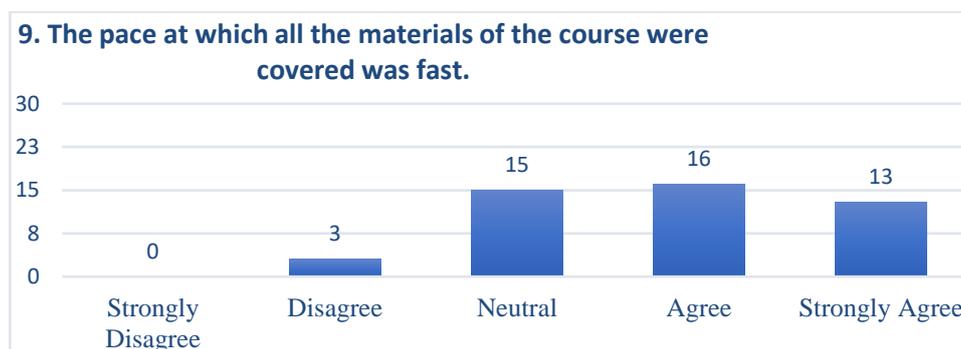


Figure 10: Efficiency of the case study method

Q10: *The quality of the methodology was high.*

This item measured students' belief regarding the quality of the methodology of the case study. 36% of the students agreed and strongly agreed that the methodology has had a high quality for them, 32% stayed neutral, and 22% stated that the methodology was not of high teaching quality.

The average of answers for this item was 3.255 out of 5, which means that the answers of the students are slightly positive. The standard deviation of this question is 1.131 the highest among all questions, meaning that the answers of students are spread unequally but most of them are closer to the average.

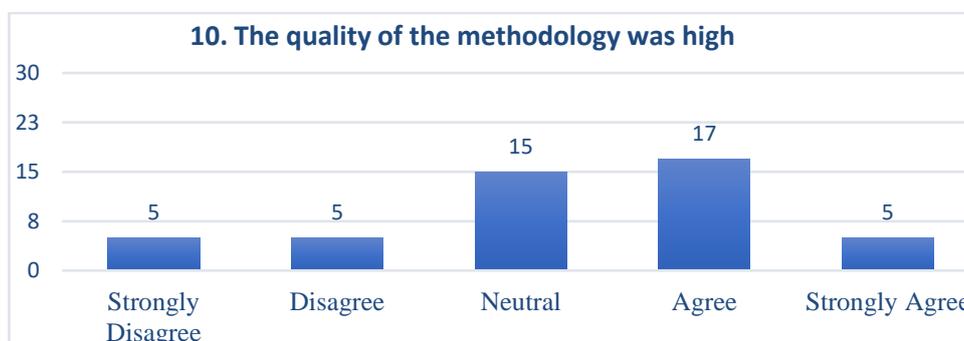


Figure 11: Perceived quality of case-based teaching methodology

Q11: *I improved my creative thinking.*

This item measured students' belief regarding improvement of their critical thinking due to the case study method. Most of the students agreed and strongly agreed that case method had an impact on the improvement of their creative thinking. More specifically, 38% of students strongly agreed, 36 % agreed, 17% neutral, and 9% disagreed. From these responses, we can see a total of 74% of students thinking that case method has an influence on the improvement of their creative thinking.

The numerical average of answers for this item were 4.042 out of 5, which means that the students' answers were significantly positive. The standard deviation was 0.954, which means that most of answers were closer to the average.

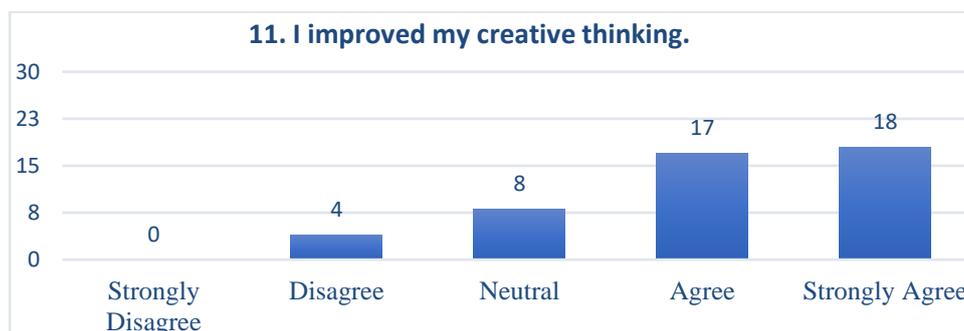


Figure 12: Case study influence on critical thinking

Q12: *I can identify problems and find solutions faster.*

This item measured the students' belief that the case study teaching method aided them in identifying problems and findings solutions faster. According to Figure 13, 23% of them strongly agreed, 43% agreed, 30% remained neutral, and only 4% disagreed. Most respondents (66%) believed that case method has improved their ability to identify problems and find solutions.

The numerical average of answers for this question was 3.851 out of 5, which means that the answers of the students are significantly positive. The standard deviation was 0.833, which is relatively low, which means that the answers of students are closer to the average and not unequally spread.

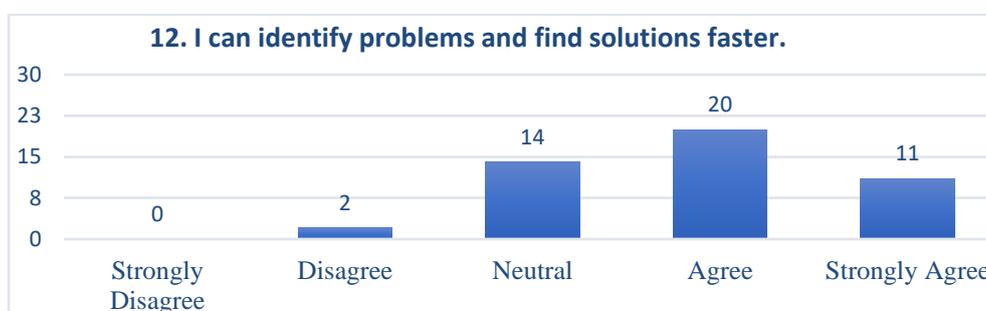


Figure 13: Problem diagnosis and resolution

Q13: *I improved my analytical skills.*

This item measured the students' belief that the case study method improved their analytical skills. Most of the students agreed and strongly agreed that case study method has had a positive impact. According to Figure 14, 36% of students strongly agreed, 38 % of them agreed while 21% were neutral and only 4% disagreed.

The numerical average of answers for this item was 4.063 out of 5, meaning that the answers of the students are significantly positive. The standard deviation was 0.869, which is relatively low, which means that the answers of students were closer to the average and not unequally spread.

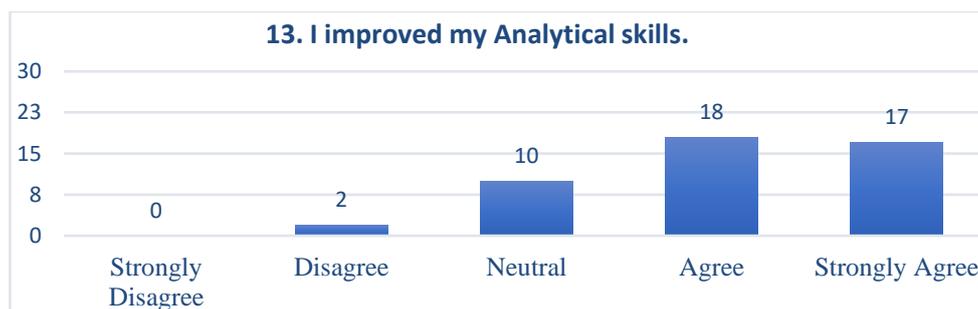


Figure 14: Case study influence on analytical skills

Q14: *This methodology made me more open minded.*

This item measured students' belief that the case study methodology made them more open minded. According to Figure 15, the majority of the students agreed and strongly agreed that the case study method has made them more open minded towards other people's opinion: 45% of students strongly agreed, 17 % of them agreed, 30% were neutral, and only 8% responded with disagree or strongly disagreed. So, 62% of the students considered the case method to be influential on their open-mindedness, while 38% were not sure if the method had an impact on being open minded.

As per results, the numerical average of answers for this item was 3.680 out of 5, which means that the answers of the respondents were significantly positive. The standard deviation was 0.911, which means that most of the answers are close to the average.

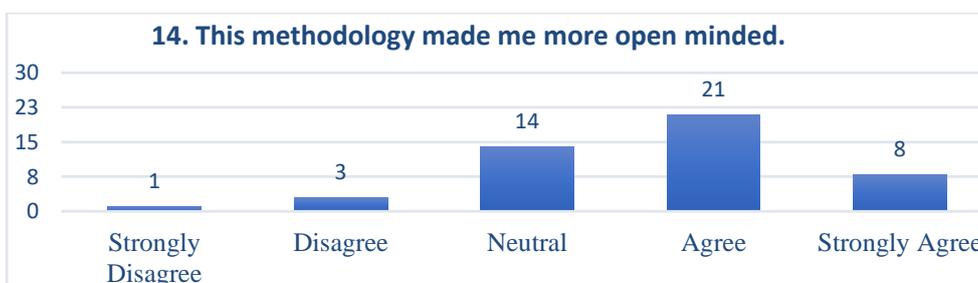


Figure 15: Case study influence on open-mindedness

Q15: *This methodology improved my communication skills.*

The final item in the questionnaire measured the students' belief that the case study methodology improved their communication skills. According to Figure 16, most of the students agreed and strongly agreed with this statement. In synthesis, 34% of students strongly agreed, 40 % of them agreed, 19% were neutral, and only 6% disagreed. Hence, 74% of the students thought that case study method has had a positive influence regarding communication, while 25% of them were not sure or disagreed with this statement.

The numerical average of answers for this item was 4.021 out of 5, which means that the answers of the students were significantly positive. The standard deviation was 0.896, which means that the answers of students were closer to the average, and not unequally spread.

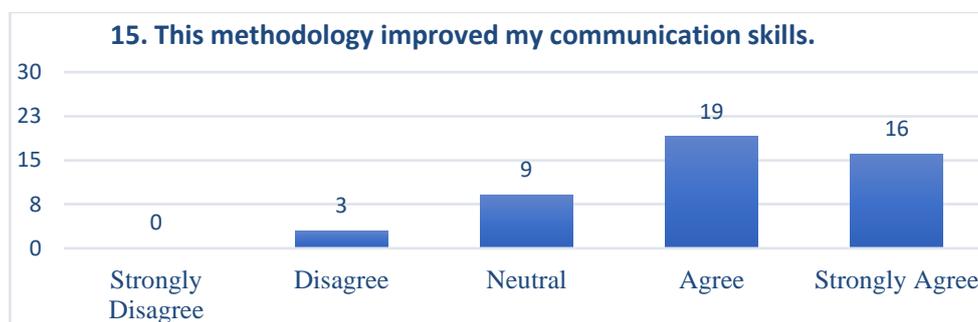


Figure 16: Case study and communication skills

5. Findings from the inferential analysis

General perception about case method

Items 1, 3, 5, 9 and 10 referred to the general perception of the students about how they perceive case study as a teaching method for their studies. Figure 17 shows a graphical representation of the overall average for those questions. The averages of these statements are over 3. This means that students' general perception about the case study teaching method is mostly positive.

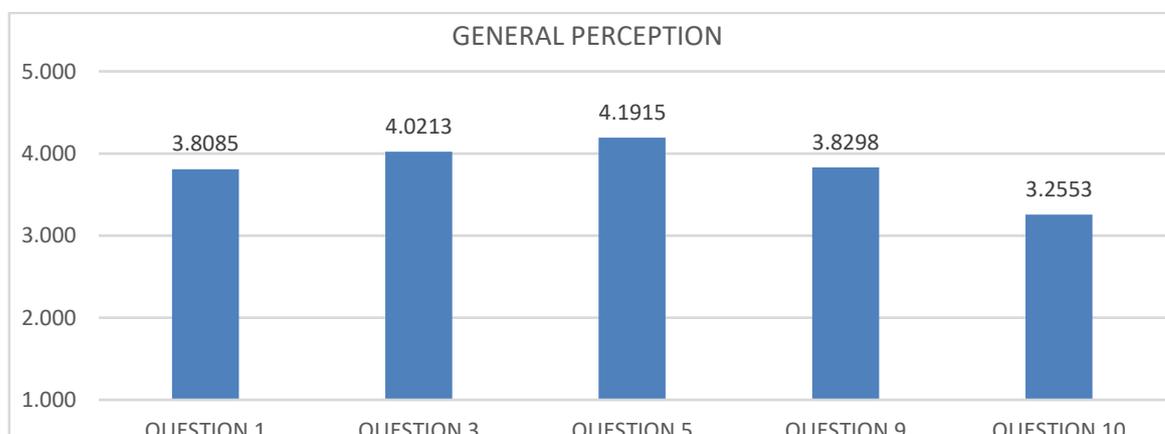


Figure 17: The general student's perception of case study method

In addition to the previous analysis, a hypothesis T-test was conducted for each category of statements. The results of the one-tailed T-test for the general perception items are shown in Table 2.

Table 2: Hypothesis T-test on general perception of students about case study teaching method

Mean	3.821276596
Variance	0.124400181
Observations	5
Hypothesized Mean	3
df	4
t Stat	5.206716634
P(T<=t) one-tail	0.0032431
t Critical one-tail	2.131846786
P(T<=t) two-tail	0.0064862
t Critical two-tail	2.776445105

The hypotheses that have been tested are disclosed as follows:

$H_0: \mu \leq 3$: Business students have a negative or neutral perception about the case study teaching method.

$H_1: \mu > 3$: Business students have a positive perception about the case study teaching method.

The rejection region for this test is: Reject H_0 if $t > 2.132$ (t Critical one-tail) or $p\text{-value} > \alpha$ (0.05). In table 2, the t-Stat = 5.206 can be noticed, which is greater than t-Critical one-tail = 2.132 and the p-value = 0.0032

As a result:

Reject H_0 because $t = 5.206 > 2.132$ and $p\text{-value} = 0.0032 < 0.05$

To conclude this test, we can say that there is enough evidence to infer that the average answers of students are significantly greater than 3 which means that students have a positive perception about the case study teaching method.

As a conclusion related to the general statements, we can say that business students think that the case study teaching method:

- a. Is more effective than other teaching methods.
- b. Increased their interest in the course.

- c. Made the course more enjoyable.
- d. Fastened the pace at which the materials of the course are covered.
- e. Has had a high quality of learning.

Case method and students' performance

Items 2, 4, 6, 7 and 8 referred to the perceived influence of case study method on students' performance. Figure 18 shows a graphical representation of the overall average for those statements. The numerical averages of these items are over 3 which means that students perceived the influence of the case study teaching method on their performance mostly as positive.

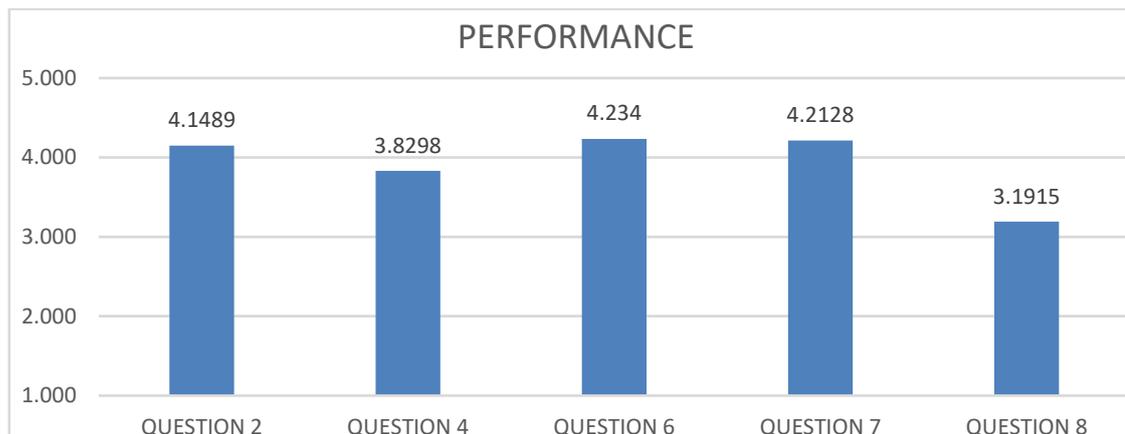


Figure 18: Perceived influence of case study teaching method on students' performance

In addition to the previous analyses, a hypothesis T-test was conducted for the performance related statements. The results of the one-tailed T-test are shown in table 3.

Table 3: Hypothesis T-test for the performance of students

Mean	3.923404255
Variance	0.193888637
Observations	5
Hypothesized Mean	3
df	4
t Stat	4.689220927
P(T<=t) one-tail	0.004691587
t Critical one-tail	2.131846786
P(T<=t) two-tail	0.009383173
t Critical two-tail	2.776445105

The hypotheses that have been tested are disclosed as follows:

$H_0: \mu \leq 3$: Students perceived the influence of the case study teaching method on their performance as negative or neutral.

$H_1: \mu > 3$: Students perceive the influence of the case study teaching method on their performance as positive.

The rejection region for this test is: Reject H_0 if $t > 2.132$ (t Critical one-tail) or $p\text{-value} > \alpha$ (0.05). At the table 4.2.1, we can find the t Stat = 4.689 which is greater than t Critical one-tail = 2.132 and the $p\text{-value} = 0.0047$.

As a result:

Reject H_0 because $t = 4.689 > 2.132$ and $p\text{-value} = 0.0047 < 0.05$

To conclude this test, we can say that there is enough evidence to infer that the average answers of students are significantly greater than 3 which means that business students perceive the influence of the case study teaching method on their performance as positive.

As a conclusion related to the performance statements, we can say that business students think that the case study teaching method:

- a. Made students participate more in the course.
- b. Made students achieve their course objectives.
- c. Motivated students to get more involved in what they were studying.
- d. Motivated students to put more effort in the course.
- e. Helped students to achieve high results.

Case method and students' critical thinking

Items 11, 12, 13, 14 and 15 referred to the perceived influence of case study method on students' critical thinking.

Figure 19 shows a graphical representation of the overall average for those statements. The averages of these items are over 3, which means that students perceive the influence of case study teaching method on their critical thinking as mostly positive.

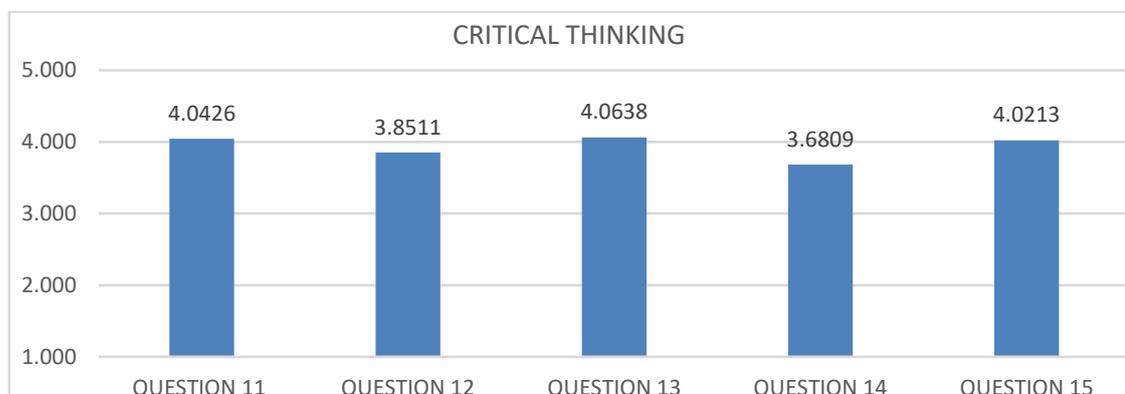


Figure 19: Perceived influence of case study teaching method on students' critical thinking

Table 4: Hypothesis T-test for the critical thinking of students

Mean	3.931914894
Variance	0.026799457
Observations	5
Hypothesized Mean	3
df	4
t Stat	12.72911644
P(T<=t) one-tail	0.000109715
t Critical one-tail	2.131846786
P(T<=t) two-tail	0.000219431
t Critical two-tail	2.776445105

In addition to the previous analyses, a hypothesis T-test was conducted for the critical thinking questions. The results of the one-tailed T-test are shown in table 4.

The hypotheses are as follows:

$H_0: \mu \leq 3$: Students perceive the influence of the case study teaching method on their critical thinking as negative or neutral.

$H_1: \mu > 3$: Students perceive the influence of the case study teaching method on their critical thinking as positive.

The rejection region for this test is: Reject H_0 if $t > 2.132$ (t Critical one-tail) or $p\text{-value} > \alpha$ (0.05). At the table 4.2.1, we can find the t Stat =12.729 which is greater than t Critical one-tail=2.132 and the p-value=0.0001 As a result:

Reject H_0 because $t=12.729 > 2.132$ and $p\text{-value}=0.0001 < 0.05$

To conclude this test, we can say that there is enough evidence to infer that the average answers of students are significantly greater than 3 which means that business students perceive the influence of case study teaching method on their critical thinking as positive.

As a conclusion related to the critical thinking statements, we can say that students think that case study teaching method:

- a. Improved their creative thinking.
- b. Helped them identify problems and find solutions faster.
- c. Improved their Analytical skills
- d. Improved their Communication skills.
- e. Made them more open-minded.

6. Discussion

The case study learning methodology provides a versatile style where the lecturer can use real-life business problems to develop critical thinking skills of students. In their research findings, Christensen and Hansen (1987) described six elements of the case method that have a high importance. Out of them, one aspect is closely related with the current research findings of the present study: “the case method supports innovation and critical thinking.”

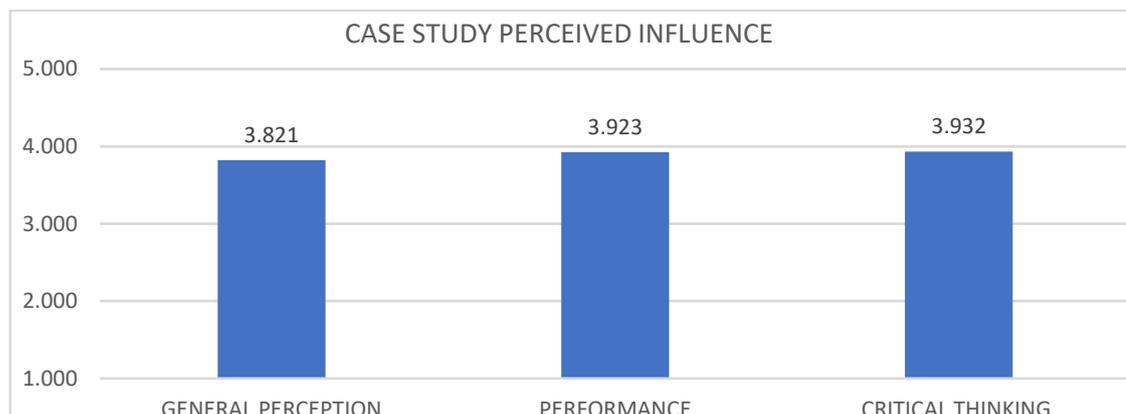


Figure 20: General perception of case study influence as a teaching method

This was expected to happen as critical thinking does not happen without facing a real experience. Case studies are experiences that unfold the best practices to be replicated (with adaptation) or worst practices to be avoided. Facing such experiences, students learn why and how they should act in a defined manner.

Another study has shown that: “case study teaching increases student perception of learning gains” (Bonney, 2015). This falls in line with the findings of the current study that general perception on case studies by Epoka University business students is positive (as shown in Figure 20). Typically, students are attracted by practical affairs as they think they will be useful to them in the future. Thus, instead of being intimidated by new situations in a job interview or as employees in front of job demands, they afford these challenges with higher self-confidence and self-efficacy (Bandura, 1997). The emergent phenomenon of applied science universities in some countries is not casual. They teach students with a “hands-on-work” to prepare them to successfully overcome future business challenges. Whenever it is possible to engage students in informative and focused classroom discussion, the application of the case method may facilitate learning (Kunselman & Johnson, 2004).

As Flynn and Klein (2001) reported in their research, the case study teaching method increases students’ motivation to participate in class discussions by enhancing their learning and performance. The findings of his study strongly connect with the findings of this study, which have shown the high impact that case method has on students’ participation and performance. Case studies are fit to the collaborative learning schema (Barkley et al., 2014) that generates more interactionism. According to Lewin (1951), it is precisely the interactionism property that produces the internal and external dynamics of a group. Consequently, there is more participation, which is a precondition for evaluating performance. Hence, if you don’t give students the chance to participate and learn

by the “trial-and-error” technique (typical of case studies), they won’t have the opportunity to perform. Performance is a direct consequence of participation. As a result, they will not understand the tolerance to error (typical of innovations). Also, they won’t be able to assess their own and others’ performances. Likewise, they will struggle to understand which best practices to replicate and which worst practices to avoid. As today’s knowledge students and tomorrow’s knowledge workers (Drucker, 1959), if they do not possess the appropriate theoretical and practical knowledge, they may cause significant harm to organizations and society. In other words, this remains a big responsibility for business schools. As quoted by Ghoshal (2005, p. 76, 87), “by propagating ideologically inspired amoral theories, business schools have actively freed their students from any sense of moral responsibility...in essence, social scientist carries an even greater social and moral responsibility than those who work in the physical science because, if they hide ideology in the pretense of science, they can cause much more harm”. This is an actual global concern since education strictly relates with values, and the way we teach can directly influence what Barile (2009) labels as “categorical values”. That is why the education is a “curved road” (Alimehmeti & Hysa, 2012).

Nadkarni and Stich (1969) studied the case method in a management setting in an experiment with Boston University business students. Their findings support the results of the present research. Specifically, they concluded that most of the students face difficulty and feel uncomfortable at the beginning of the course with the case method, but at the end most of them lost that feeling and enjoyed the assigned case studies. Similar behaviors have been shown by business students of Epoka University that during the course either dissolved or were not shown anymore. Coherently, based on the students’ surveys related to the course method and instructor, students’ satisfaction was high (see also figure 6), and the class GPA was relatively high, thus showing a net separation between good grades and bad grades (with few intermediate grades). Hence, this method also created an unintentional self-classification of students: the engaged group and the careless group.

Moreover, from a close perspective with Nadkarni and Stich (1969), Reynolds (1980) supports the results of this study by showing the reasons why the case method is effective in teaching management. According to him, there are five reasons and one of them is: “Students enjoy them [cases] more and are willing to put more hours in learning”. This statement supports the research results as disclosed in figure 3, 6, and 8, where motivation to participate, learning satisfaction, and study efforts have all been increased.

In synthesis, the general perception of students about case studies and the perceived influence that they have on performance and critical thinking is positive. The results of this study are backed-up by the relevant literature. The overall average of answers for each category (i.e., general perception, performance, and critical thinking) which resulted to be higher than 3, prove that the perceived influence is positive for all three categories. Based on the results of the hypothesis t-test, there was ample evidence to infer that the average answers of students are significantly greater than 3, thus reinforcing the graphical findings,

and concluding that the influence of case study teaching method is perceived as positive on students' performance and critical thinking.

7. Conclusions

This study aimed to find how students perceived the influence that case studies have in their performance and critical thinking. The analysis done in the study was divided into three steps: first, getting the general perception that students have on case study methodology; second, finding the perceived influence of case study method on students' performance; third, finding the perceived influence of case study method on students' critical thinking. The study found that students, in general, regarded the influence of the case method as positive, meaning that the use of case studies instead of teacher-centered lessons is more effective and helps students reach a higher performance, improving their critical thinking regarding real-life business situations.

Besides the strong potential of this research, there are present some unavoidable limitations. Based on literature, there is a gap for Albania since no conducted studies regarding teaching methodologies and especially case study methods, only some reports undertaken from international organizations provided information about Albanian Higher Education. Moreover, the estimates may be biased since our evaluations were focused only on a sample of 47 students enrolled in business courses at Epoka University. Our assessments can be conservative and may not show the full picture of the effect of case studies as a learning methodology.

Nevertheless, besides using a more significant sample than 30 participants, and fulfilling the assumption of normality, a larger sample size could give better comparable results. For the future, we recommend further studies in Albania and the whole region of Western Balkans involving more students' groups and higher educational institutions. Furthermore, future studies can focus on finding the differences of how students perceive the influence of case study teaching method in both undergraduate and graduate levels.

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Appendixes

Appendix I: Descriptive statistics of each question

	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7
Mean	3.808	4.148	4.021	3.829	4.191	4.234	4.212
Median	4	4	4	4	4	4	4
Maximum	5	5	5	5	5	5	5
Minimum	2	2	1	1	2	2	1
Std. Dev.	0.797	0.807	1.0105	0.867	0.850	0.813	0.883
Skewness	-0.426	-0.524	-0.809	-0.877	-0.801	-0.693	-1.383
Kurtosis	2.903	2.433	3.111	4.237	2.920	2.576	5.444
Jarque-Bera	1.442	2.782	5.151	9.026	5.046	4.113	26.685
Probability	0.486	0.248	0.076	0.010	0.080	0.127	0.000
Sum	179	195	189	180	197	199	198
Sum Sq. Dev.	29.276	29.957	46.978	34.638	33.276	30.425	35.872
Observations	47	47	47	47	47	47	47

Q 8	Q 9	Q 10	Q 11	Q 12	Q 13	Q 14	Q 15
3.191	3.829	3.255	4.0425	3.851	4.063	3.680	4.021
3	4	3	4	4	4	4	4
5	5	5	5	5	5	5	5
1	2	1	2	2	2	1	2
1.035	0.916	1.131	0.954	0.833	0.869	0.911	0.896
-0.627	-0.172	-0.514	-0.691	-0.173	-0.523	-0.548	-0.590
3.103	2.050	2.616	2.5201	2.301	2.410	3.316	2.562
3.101	1.998	2.357	4.192	1.191	2.825	2.549	3.104
0.212	0.368	0.307	0.123	0.551	0.243	0.279	0.211
150	180	153	190	181	191	173	189
49.276	38.638	58.936	41.914	31.957	34.808	38.212	36.978
47	47	47	47	47	47	47	47

Appendix II: Sorted questions according to the highest mean

Nr.	Question	Mean
6	I got more involved on what I was studying.	4.234
7	I studied and put more effort in the course.	4.212
5	The lesson is more enjoyable.	4.191
2	This method made me participate more in the course.	4.148
13	I improved my Analytical skills.	4.063
11	I improved my creative thinking.	4.042
3	My interest in the course topics has been increased.	4.021
15	This methodology improved my communication skills.	4.021
12	I can identify problems and find solutions faster.	3.851
4	I made progress achieving course objectives.	3.829
9	The pace at which all the materials of the course where covered was fast.	3.829
1	It is more effective than other teaching methods.	3.808
14	This methodology made me more open minded.	3.680
10	The quality of the methodology was high.	3.255
8	It helped me reach high results.	3.191