

**Commerce Division
Discussion Paper No. 83**

**HONOURS' STUDENTS
PERCEPTION OF THE
USEFULNESS OF CASE
STUDIES FOR LEARNING**

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July 2000

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ISSN 1174-5045
ISBN 1-877176-60-5

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Abstract

Recent accounting and finance education literature indicates a trend towards increasing use of case studies. The literature in this field is primarily descriptive, with no empirical evidence on the use or effectiveness of the method. This study examines students' perceptions of the use of case studies in a finance course and the potential influences of gender and prior academic performance on such perceptions. The study focuses, in particular, on students' perceptions about whether case studies develop particular skills suggested in the literature.

The questionnaire-based study was conducted in a post-graduate (Honours) class at a South African university. Analyses of the results reveal significant differences in students' perceptions of the benefits of the use of cases. Gender and prior academic performance-based differences in perception were also found. The study is useful for educators who use, or intend to use, case studies in delivering a course, as it highlights issues, such as the learning objectives of the course, which need to be addressed prior to curriculum design.

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1. Introduction

The use of case studies for imparting certain thinking skills and knowledge to students is widespread in education, being employed extensively in medical, legal and business education (Bonk and Smith 1998). In accounting and finance, case studies are considered to be valuable teaching tools, because of the opportunity they present for mimicking real-life practical problems and situations, enabling students to develop and/or improve upon a range of skills required for day-to-day business decisions. Several studies have identified a broad range of skills and abilities that could be imparted, developed or improved through the use of case studies (Bonner 1999, Saudagaran 1996, Knechel 1992, Campbell and Lewis 1991). Little, however, has been done to investigate and report on the relative usefulness of case studies in meeting course objectives from the point of view of the principal stakeholders - students. This study is aimed at measuring students' perceptions of the relative usefulness of the case method as a tool for developing a set of desirable skills in students.

A questionnaire was employed to collect data on students' perceptions of the usefulness of case studies for developing thinking skills and imparting knowledge. Data were analysed to determine the greatest benefits derived from the use of case studies, as ranked by the students. Nonparametric statistical tests were used to isolate possible differentials in the ranking of the benefits of case studies in developing and imparting individual and sub-scaled skills and knowledge. Cross-gender and prior performance statistical analyses were also conducted. The results of the analyses show that students perceive the major benefit of the use of case studies to be exposure to real-world complexity, particularly with respect to decision-making. Cross-gender and prior academic performance differences in student perceptions were also found. The findings of the study can assist educators to design more effective teaching approaches.

The rest of the paper is organised as follows. Relevant literature on the subject is reviewed next. This is followed by a presentation of the research design and methodology. The results of the study are then reported and discussed, followed by a summary and conclusion. Suggestions for further research are presented in the final section.

2. Literature Review

This section provides a review of the literature relating to the use of case studies. Case studies have been used in education¹ for many years, their use being particularly widespread in management education (Fulmer 1992; Wines, Carnegie, Boyce and Gibson 1994). They are closely associated with the Harvard Business School, which published the first book of written cases in 1921 (Shapiro 1984). Numerous definitions of case studies are found in the management education literature. Easton (1992), defines a case study as a, “[means] to provide practice in problem solving and decision making in a simulated situation The case method is primarily a vehicle for developing skills; skills which are a vital part of a decision maker’s armoury together [these skills] can be described in one phrase - creative problem solving.” Shapiro (1984) similarly describes the essence of case teaching as the facilitation of student learning, being very useful in the development of skills and a philosophy of real-world management. In an accounting context, Wines et al. (1994) describe case studies as typically possessing several features. These are: issues, the consideration of which require the use of judgement and analytical reasoning skills; the inclusion of real or realistic situations, requiring a consideration of the complexity and ambiguity of the business world, and the existence of more than one possible solution to the case problem. Common to all of these definitions are the development of problem-solving skills and the use of either real or realistic contexts.

The use of case studies in accounting education is more recent than in management education. It is, in part, a response to the call by the Accounting Education Change Commission (AECC, 1990) for more innovative teaching of accounting to achieve certain employment-related skills (Perspectives on Education, 1989). The AECC (1990) classifies desirable educational outcomes into communication skills, intellectual skills, interpersonal skills, general knowledge, business knowledge, accounting knowledge and attitudes. Intellectual outcomes specified are to locate and organise information, to identify and solve unstructured problems and to exercise judgement. The AECC recommends the use of teaching techniques such as the case method (the use of case studies) to develop such intellectual skills. Despite this pronouncement, only a few studies have examined the usefulness of case studies, with most of the literature being descriptive in nature.

¹ For examples of case-based learning in the medical field, see Schwarz and Heath, 1994, and Johnstone and Biggs,

Some papers describe the nature of case studies, while others specify how to incorporate the case method into accounting instruction (Bonner 1999; Wines et al. 1994; Knechel 1992; Libby 1991). Another category of studies describes the benefits to be derived by students from the use of case studies (Campbell and Lewis 1991; Kimmel 1995).

Case studies take many different forms. They may range in length from a single page to more than 40 pages (Campbell and Lewis 1991). Alternatively, cases may be in electronic, rather than in textbook mode, with real-time interaction on the WWW (Bonk and Smith 1998). Live cases, which expose students to real businesses, are a further way of incorporating cases into courses (Barkman 1998). Some case studies contain extensive information, with the issues fairly obvious, while others contain limited information, with the issues unclear (Wines et al. 1994). Wines et al. identify five broad categories of cases - the issues case, the appraisal case, the blind case, the iceberg and the series case, whereas Knechel (1992), categorises cases into quantitative, interpretational and decision-oriented types.

Irrespective of the type of case study used, the development of skills is propounded to be the main benefit of their use. The skills most frequently mentioned as being developed by case studies are analytical and judgement skills (Campbell and Lewis 1991). They argue that the success or failure of the use of cases depends primarily on the specific educational objectives and practical implementation issues. For example, cases might be appropriate if the course objective is to facilitate the development of analytical and judgement skills, whereas lectures and reading assignments may, but need not exclusively, be more appropriate means of presenting basic accounting techniques. Bonner (1999) presents a comprehensive framework for choosing teaching methods based on specific learning objectives². Bonner specifies cases as one of a wide variety of teaching methods available to accounting instructors, to be used in conjunction with each other. Hassall, Lewis and Broadbent (1998), when using case studies in a Financial Decision Making module, specify the aim as being "to develop and apply an integrated approach to problem solving and to provide students with an understanding of the problems inherent in the application of discipline based knowledge to practical situations in a period of change" (p. 326). To achieve this aim, Hassall et al. identify several objectives encompassing academic and

1998. The use of cases is also well established in legal education (Bonk and Smith 1998).

² She describes a learning objective as a "description of a desired outcome of the educational process" (1999, p.14).

personal skills, for example, "students should be able to evaluate, classify and organise information into a suitable format for the application of decision-making techniques" (p. 326).

Bonner (1999) identifies cases as being particularly suitable for the development of complex cognitive skills. Similarly to Hassal et al. (1998), Wines et al. (1994) identify both cognitive and affective benefits to be derived from the use of case studies. The benefits include organisation and comprehension, judgement and analytical reasoning, communication and interpersonal skills, realities of decision-making, student motivation and staff motivation and development. Johnstone and Biggs (1998) identify several ways in which cases can be used in problem-based learning. They view realistic cases as a means of enabling students to practise gathering relevant professional information and integrating that information within the context of the case. Johnstone and Biggs also regard realistic cases as being useful for encouraging the development of diagnostic reasoning skills.

Kimmel (1995) regards the use of cases as being very useful for developing critical thinking skills in students. He divides cases into three categories, namely, basic, intermediate and advanced. For each category, he identifies critical thinking elements that can be taught by the use of a case (Table 1).

Table 1
Strategies for Developing Critical Thinking Elements*

Critical thinking element	Basic case	Intermediate case	Advanced case
Welcoming divergent views	X		
Tolerating ambiguity		X	
Recognising personal biases		X	
Resisting overgeneralisation		X	
Analysing data for value and content			X
Synthesising			X
Defining problems accurately		X	X
Variety of thinking processes			X
Employing precise terms	X		
Modifying judgments			X
Gathering facts			X
Applying knowledge to new situations		X	X
Distinguishing fact from opinion			X

* adapted from Kimmel (1995)

The critical thinking elements listed in Table 1 increase in cognitive complexity with the level of case used. According to Kimmel (1995), the extent to which an instructor wishes to develop particular skills in students will determine which particular type of case will be used in a given situation. Thus, an instructor wishing to develop students' ability to *modify judgments* would use an advanced case, whereas an instructor wishing to improve students' ability to use precise terms, a lower-order thinking skill than *modifying judgments*, might use a basic case. Unlike Kimmel, Bonner (1999) does not classify cases into different levels of complexity; she, however, identifies certain intellectual skills and cognitive strategy outcomes which can be taught effectively with the aid of case studies.

Empirical research on the use of case studies in accounting education is limited. Saudagaran (1996) uses cases, together with other pedagogically innovative features, in a redesigned Introduction to Accounting course. Saudagaran's rationale for using cases is to de-emphasise a single solution approach and to stress the need to deal with uncertainty in accounting. Students in his study indicate that they find that the new course improves their perception of accounting. He also reports a statistically significant improvement in the quality of students being attracted into the accounting programme compared to prior years. Saudagaran did not, however, control for other changes that may have occurred during the period under review.

Another perception-based study is that by Friedlan (1995). He examined the effect of teaching approach in an introductory financial accounting course on students' perceptions of the skills and abilities needed for success in accounting courses and by accounting practitioners. Friedlan found that teaching approach had a significant effect on students' perceptions. In particular, he found that students in a non-traditional course using, inter alia, minicases, had perceptions about the skills and abilities required for academic and professional success that are more consistent with those identified as necessary by the accounting profession, than students in a traditional course. Barkman (1998) reports mixed student reaction on the use of live cases in an Accounting Information Systems course; some students indicate appreciation at being exposed to real businesses, while others find the effort involved in completing the case to be too demanding. In addition to this anecdotal evidence, questionnaire responses from clients involved in the live cases reflect a high level of satisfaction. Neither Friedlan nor Barkman measured students' perceptions about the proposed benefits of the use of mini- or live cases, respectively.

A study that has measured students' perceptions about the benefits of case studies is by Hassall et al. (1998). Students were requested to indicate the extent to which a module, using only case studies, developed ten specified skills. The five most frequent "yes" responses, in descending order, were for negotiation skills, ability to work in a group, presentation skills, the ability to apply and integrate subject skills and knowledge and the ability to question assumptions and listen to arguments. The lowest percentage of "yes" responses was for a question relating to the ability to recognise and accept leadership. When asked about the ability of case studies to develop knowledge, skills and personal qualities, 85 per cent of the students agreed that case studies were the most appropriate teaching tool for developing knowledge; 90 per cent agreed in respect of skills and 62 per cent, personal qualities. No further empirical studies that examine either the use and effectiveness of the case method, or students' perceptions of this teaching methodology, are available.

The role of gender in accounting and finance education has been examined in numerous studies (see Brazelton 1998, for a summary). Many of these studies have investigated the relationship of gender to students' performance. Although Brazelton notes that, "virtually all of these investigations have determined that there are unexplained variables in assessing career success of accounting graduates" (1998, 512), it is nevertheless evident that female accounting students frequently outperform male accounting students (Hanks and Shivaswamy 1985; Mutchler et al. 1987; Tyson 1989; Carpenter et al. 1993).

Brazelton (1998) also investigates gender communication patterns in the accounting classroom. She reports, *inter alia*, that men are involved in more than their share of classroom interactions; that more men are involved more often and that men interrupt more often. As these findings all involve levels of student participation, they may have implications for the use of case studies, which, if used in conjunction with study groups, require extensive student participation. Weil et al. (1999) found that male students perceive case studies to be more useful than females³ in developing their knowledge of management accounting. Because of its possible impact on student perceptions about the use of case studies, gender has been incorporated in the current study.

There is little evidence in the literature about the relationship of prior academic performance to student perceptions about the benefits of case studies. Weil et al. (1999) report that there are no differences in perception of the use of case studies, based on prior academic performance. This potential influence on student perceptions is included in the study to explore it further, particularly with respect to whether academically strong students perceive the use of case studies more favourably than academically weak students.

To summarise, this study aims to contribute to the literature by assessing student perceptions of the benefits of case studies and the association between student perceptions of the benefits of case studies and certain factors, namely, gender and prior academic performance. The methodology employed in conducting the research is described next.

3. Research Methodology

3.1 Background to the Study

The study was conducted with 72 Finance (Hons.) students, whose course was case study based, at a tertiary institution in South Africa in 1998.⁴ The decision to offer the course in case-study mode, in addition to the traditional mode, was taken primarily for two reasons: to allow students to integrate their prior knowledge and to apply their knowledge in solving real-world problems. The specific learning objectives set for the course were to familiarise students with typical real-world business finance issues, to encourage students to ask pertinent questions when confronted with such questions and to develop students' ability to deal with uncertainty and/or ambiguity. The course ran for one semester. There were twelve teaching weeks, with four hours of contact time per week. Students were required to prepare two cases per week. The class was divided into two groups, one group was responsible for cases on Tuesday and the other for Thursday. Students within each of the two groups were asked to form their own study groups, of three or four students each. Each study group had to be ready to present the scheduled case on the day for

³ The case studies were completed in groups comprising both male and female students.

⁴ The class, comprising 121 students, was split into two streams - traditional (lectures and tutorial sessions) and case study-based. Students were given the option of choosing between the two streams. Seventy two students chose the case study-based stream.

which it was responsible. The group doing the presentation was randomly selected on the day by being drawn out of a hat. Presentations contributed twenty per cent towards the final mark for the course.

The case studies were divided into two categories; short (80 per cent of the cases) were between three and five pages long, while the long case studies were between ten and fifteen pages in length. To avoid the criticism that cases frequently create oversimplified (Bonk and Smith 1998) or unrealistic contexts (Stoneham 1995), all of the cases were based on real companies. The case studies were structured, in the sense that specific questions were set for each case study. Approximately sixty per cent of the cases were basic, with the balance being intermediate (as classified by Kimmel 1995). Most of the cases were issues cases, with a few being appraisals cases (as described by Wines et al. 1994).

The students had no experience of case studies prior to taking the course. To familiarise them with the case method, the students were given relevant readings, a sample case, together with a suggested solution, and a demonstration of the desired analytical approach to case studies during the first week of the course. Each study group prepared a written submission, which was marked and contributed 20 per cent of the final mark for the course. The final examination consisted of a four hour case study. All but one of the students passed the course.

3.2 Research Aim

The study investigates the usefulness of case studies in teaching as perceived by a group of Finance (Hons.) students. More specifically, the study is designed to observe the perceived relative use of case studies for imparting a set of (31) desirable skills to Finance (Hons.) students. The study also investigates a possible disparity of opinion among the students across two homogeneously distinct characteristics, namely, gender and prior academic performance.

3.3 Instrument Design and Data Collection

A questionnaire was designed for administration to the target population. The questionnaire was based on that used in a previous study (Weil et al. 1999), which examined student perceptions of

the use of case studies and study groups in an Advanced Management Accounting course, using a Malaysian student population. Using this as a pilot study, a more comprehensive questionnaire was constructed. The questionnaire requested demographic information in respect of student name, gender, age, language and prior results in undergraduate Finance courses. The main part of the questionnaire contained questions about the use of case studies in Finance (Honours)⁵. To minimize variations in students' responses due to different interpretations of the term "case study," it was defined in the questionnaire as "an unstructured academic assignment, which requires information to be analyzed and organized, in an attempt to determine an answer from available alternatives⁶."

Thirty-one questions were constructed regarding desirable skills, abilities and knowledge purportedly developed through the use of case studies. The list of questions is not exhaustive, but includes the benefits of case studies most frequently cited in the literature (Campbell and Lewis 1991; Knechel 1992; Wines et al. 1994; Kimmel 1995).

The 31 questions can be organised under the following eight headings: *Visualisation*, encompassing skills which provide familiarity with the business decision-making environment; *Dealing with uncertainty*, containing questions about situations dealing with incomplete and/or ambiguous information; *Problem elaboration*, including critical thinking elements used when developing an approach to a problem; *Communication skills*, listing questions relating to various components of the communication process; *Consolidation and integration*, relating to the skills used to combine different knowledge components of the discipline; *Judgement*, being those skills involving assessing and choosing between different alternatives; *Data exploration*, relating to the exploratory phase of problem-solving, and *Active participation*, relating to the student's contribution to the learning process.

The questions do not appear under these headings in the questionnaire, but are randomised. Respondents were asked to indicate the extent to which the use of case studies helped them in realising or enhancing each of the listed skills, by rating the strength of their preference on a seven-point Likert-like scale ranging from 1 (not at all) through 4 (moderate) to 7 (extensively).

⁵ The questionnaire also contained questions about the use of study groups, which will be reported on separately.

⁶ This definition is adapted from those used by Easton (1992) and Wines et al. (1994).

In addition to the 31 specific questions, respondents were asked to rank the three most valuable benefits of the case study method from the 31 options. Finally, the respondents were asked to indicate on a scale ranging from 1 (no value) through 4 (some value) to 7 (high value) how valuable overall they found the use of case studies as a learning method in the course.

Data was collected by the administration of the questionnaire to the student population in a classroom setting. Fifty one respondents, representing 71 per cent of the sample population, completed the questionnaire.

3.4 Data Analysis

The mean usefulness of case studies for teaching each skill was computed by adding up the point values assigned by all respondents, and then dividing the total by the number of respondents for the group. The skills were then ranked in descending order of mean importance. Table 3 (Panel A) shows the mean rankings for the five highest and five lowest ranked skills. The table also shows the level of agreement among the students, as measured by the standard deviation of their responses, on each measurement variable. In addition, per centages of all respondents who consider case studies to have been extremely useful (responses 6 and 7 on the Likert-like scale) in developing or improving each skill are presented. Panel B of Table 3 reveals the same information across gender and Panel C for prior performance levels. To aid the analysis, the skills are presented in the order of ranks given by respondents in “experimental groupings” - female for gender and “*above-average*” for performance levels. Based on their performances in the undergraduate Finance paper, respondents were classified into *above-average* (A) and *below-average* (B) performers⁷. The ranks given by members of the “control group” for gender and prior performance are presented in Panels B and C of Table 3 for comparative purposes.

Further statistical analysis was carried out to isolate possible gender or performance level differentials in the perceived impact of case studies method on the development or improvement of each type of skill. The *Mann-Whitney U (MWU)* test of independence was employed to

⁷ This classification is a “convenience-split” of the respondents into two homogeneous groups based on their relative performances. Students who qualify for admission into the Honours programme all have records of above-average performance in previous classes. The overall average for this class, on which the split is based, is 60.55%; and “*above-average*” and “*below-average*” performance should be interpreted by reference to this *average* only.

explore possible differences in the effect of the case study method across gender and performance levels. Summarised (items of significant differences only) results of the tests are presented in Table 4 (Panels A and B).

Factor analysis was used to derive sub-scales for the 31 individual skills. Using both a Varimax and Oblimin rotation, the factor analysis of all 31 questions produced nine factors with eigenvalues of over 1. Four sub-scales emerged clearly from this initial factor analysis. The remainder of the questions were subjected to a further factor analysis, which yielded five factors. From this analysis, two different sub-scales were identified clearly. Six of the eight sub-scales discussed under *Instrument Design and Data Collection* were thus confirmed by the factor analysis. The standardised alpha coefficient for the eight sub-scales ranged from 0.66 to 0.82, with seven out of eight sub-scales scoring above 0.70⁸.

The final aspect of the analysis involved applying appropriate statistical tests to explore the perceived effectiveness of case studies in developing the sub-scaled skills derived through factor analysis above. Following through from the previous analysis, possible differentials in students' perception of sub-scales were investigated. The *Friedman* test was employed to investigate possible differences in students' overall perception while the *MWU* test was applied to investigate gender- and performance-based differences. The results of the tests are presented in Table 6.

4. Results and Discussion

The survey and statistical test results are discussed and presented in this section. The preliminary statistics are presented first, followed by substantive statistical tests and discussion. Due to the nature of the data, all tests were non-parametric. The discussion of the results is in the following order: first, preliminary statistics on respondents' demographics and their ranking (overall, gender- and performance-based) of the 31 individual benefits of case studies are presented; next, the results of substantive non-parametric tests for differences in students' perceptions with

respect to individual skills are presented; finally, the results of tests on students' perception of sub-scaled benefits of case studies are discussed. In all cases, where applicable, overall results are presented first, followed by discussions of differences attributable to gender and prior academic performance.

4.1 Preliminary Statistics

Some demographic details on the student respondents to this study are presented in Table 2. Of the 51 students, 19 (37.3 per cent) are female, while the remaining 32 are male. The grade obtained in the undergraduate Finance paper prior to Finance (Hons.) by the students ranged from 50 to 76 per cent, with a mean of 60.55 per cent. Fifteen (about 31 per cent) of the students fell within the modal performance category of *60 to 64 per cent*. Of these, nine are male, while the rest are female. The next highest cluster of students scored *less than 55 per cent*. Twelve students (about 25 per cent), one-third of whom are female, fell into this category. Only two students, both male, scored *greater than 74 per cent*. The age of the student respondents ranged between 21 and 25 years. Most of them were either 22 (47 per cent) or 21 (43 per cent) years old. One male student was 25 years old.

Table 2
Respondent Demographics

Performance categories	Gender of respondents					
	Female		Male		Total	
	Count	Per cent	Count	Per cent	Count	Per cent
Less than 55%	4	23.5	8	25.0	12	24.5
55% to 59%	2	11.8	5	15.6	7	14.3
60% to 64%	6	35.3	9	28.1	15	30.6
65% to 70%	1	5.9	5	15.6	6	12.2
71% to 74%	4	23.5	3	9.4	7	14.3
Greater than 74%	0	0.0	2	6.3	2	5.0
Total	17	100.0	32	100.0	49	100.0
Age of respondents	Count	Per cent	Count	Per cent	Count	Per cent
21	7	36.8	15	46.9	22	43.1
22	10	52.6	14	43.8	24	47.1
23	2	10.5	2	6.3	4	7.8
25	0	0.0	1	3.1	1	2.0
Total	19	100.0	32	100.0	51	100.0

⁸ These scores are considered sufficient and reliable for a study of this nature (Nunnally 1978).

The results of the analysis of respondents' ranking of the perceived relative usefulness of case studies for the development of the 31 individual skills are summarised in Table 3. The summary highlights the five highest-ranked and five lowest-ranked skills. Panel A of the Table presents the results on an overall basis for the 51 students while Panel B and C are gender- and performance-based segregated rankings respectively.

The results show that, overall, the three highest ranked skills, with means ranging from 6.18 to 5.78, all relate to students being exposed to the reality and complexity of the business world. They were decision-making, business problems and the relationship of theory to real life. Four of the five highest ranked questions are part of the Visualisation sub-scale (except for PT2_33). The rating by students of exposure to real-world situations as being of great benefit supports Wines et al.'s (1994) listing of the "realities of exposure to decision-making" as one of the main benefits to be derived from the use of case studies. This benefit is ranked more highly by students than the development of critical thinking skills, which is listed in much of the literature as being a major benefit of the use of case studies (Kimmel 1995; Campbell and Lewis 1991; Wines et al. 1994).

The least perceived benefit of case studies is helping students to improve their written communication skills. This outcome is not unexpected, as students were not required to present their weekly case study presentations in writing. Although each study group was required to prepare one written submission during the course, the results in Panel A of Table 3 suggest students perceived little relationship between the regular use of case studies and the improvement of their written communication skills.

Table 3
Ranking of Skills by Positive Impact of Case Studies on Their Development

Panel A: All students (n = 51)				
RANK	SKILLS[#]	RESEARCH CODE	MEAN (S.D.)	EXTREMELY USEFUL^{##}
1.	Real-world business decision-making	PT2_20	6.18 (0.62)	88.2
2.	Several solutions to business problems	PT2_33	6.18 (0.99)	46.2
3.	Theory application to real-world	PT2_22	5.78 (0.83)	64.7
4.	Facts versus opinions	PT2_29	5.55 (0.83)	56.9
5.	Application of knowledge	PT2_23	5.51 (1.05)	56.9
27.	Organisation of data	PT2_26	4.78 (0.92)	23.5
28.	Listening skills	PT2_11	4.73 (1.20)	27.5
29.	Persuasive skills	PT2_30	4.57 (1.15)	21.6
30.	Motivation	PT2_16	4.49 (1.10)	15.7
31.	Written communication skill	PT2_21	4.16 (1.17)	13.8
Panel B: Gender-based ranking (n = 51)				
RANK	SKILLS[#]	RESEARCH CODE	FEMALE(F)*	MALE(M)*
F* M*			MEAN (S. D.)	MEAN (S. D.)
1. 2	Real-world business decision-making	PT2_20	6.26 (0.65)	6.13 (0.61)
2. 1	Several solutions to business problems	PT2_33	6.05 (1.03)	6.25 (0.98)
3. 3	Theory application to real-world	PT2_22	5.89 (0.81)	5.72 (0.85)
4. 6	Facts versus opinions	PT2_29	5.79 (0.79)	5.41 (0.84)
5. 6	Application of knowledge	PT2_23	5.68 (0.89)	5.41 (1.13)
27. 30	Persuasive skills	PT2_30	4.42 (1.39)	4.66 (1.00)
28. 18	Active participation	PT2_18	4.42 (1.50)	5.13 (1.16)
29. 12	Pertinent questions	PT2_17	4.32 (1.42)	5.22 (0.91)
30. 31	Written communication skill	PT2_21	4.26 (1.37)	4.09 (1.06)
31. 29	Motivation	PT2_16	4.16 (1.26)	4.69 (0.97)
Panel C: Prior Performance-based ranking (n = 49)				
RANK	SKILLS[#]	RESEARCH CODE	ABOVE(A)**	BELOW(B)**
A** B**			MEAN (S.D.)	MEAN (S.D.)
1. 2	Real-world business decision-making	PT2_20	6.24 (0.66)	6.12 (0.61)
2. 1	Several solutions to business problems	PT2_33	6.24 (1.09)	6.17 (0.82)
3. 4	Theory application to real-world	PT2_22	6.04 (0.61)	5.46 (0.93)
4. 7	Integration of diverse Finance components	PT2_06	5.76 (0.78)	5.21 (1.44)
5. 5	Application of knowledge	PT2_23	5.68 (1.11)	5.29 (1.00)
27. 28	Listening skills	PT2_11	4.84 (1.31)	4.54 (1.10)
28. 17	Ability to synthesise	PT2_10	4.76 (0.78)	5.00 (1.06)
29. 29	Persuasive skills	PT2_30	4.56 (1.29)	4.50 (1.02)
30. 30	Motivation	PT2_16	4.52 (1.16)	4.38 (1.06)
31. 31	Written communication skill	PT2_21	4.16 (1.11)	4.00 (1.18)

The descriptions of the skills in Table 2 are precis of the questions in the questionnaire. Each question is preceded by the words. "To what extent did the use of case studies...." and is followed by a verb. For example, "To what extent did the use of case studies encourage you to apply your knowledge to new situations?" (PT2_23)

The proportion of respondents indicating that they found case studies extremely useful by ticking either 6 or 7 on the Likert scale.

* n(Female) = 19 and n(Male) = 32.

** n(Above average performers) = 25 and n(Below-average performers) = 24.

With respect to gender-based perceived benefits of case studies for developing the 31 desirable skills (Panel B of Table 3), both male and female students agree on the two major benefits of case studies, although the order is reversed, with females ranking “several solutions to business problems” higher than “real-world business decision-making.” The least favorably perceived benefits are also similar. The largest difference in rankings is for the question relating to “pertinent questions,” which is ranked twenty-ninth by females, but twelfth by males. This low ranking by female students may suggest that they either did not perceive the case study material as encouraging them to ask questions, or that the group structure for discussing cases inhibited them from doing so. The latter scenario is consistent with Brazelton’s (1998) finding that female students communicated less in accounting classes than males, although this occurred in lecture classes, rather than in study groups. This finding needs to be examined further.

The results of the performance-based preliminary analysis (Panel C) are broadly similar to the previous gender-based analysis, with both above- and below-average performers agreeing on the two major benefits of case studies (again in reverse order). Both “theory application to real world” and “application of knowledge” also featured prominently in the ranking of both groups of students. Both groups rated “persuasive skills”, “motivation” and “written communication skill” as the three skills least developed by their use of case studies.

4.2 Substantive Statistics

The summarised results of *MWU* tests (Table 4, Panel A) indicate that there are statistically significant differences between male and female students’ perceptions for four of the potential case study benefits investigated in this study. At the 5 per cent level, males perceive case studies to facilitate the development of critical thinking ability and pertinent questioning more than do females. The latter result is consistent with the exploratory findings reported in Table 3 previously and the findings of Brazelton (1998). At the 10 per cent level, males perceive case studies to facilitate the development of interpretative skills and dealing with uncertainty and ambiguity more than do females. Interpretative skills and critical thinking ability are part of the *problem elaboration* sub-scale, while the other two questions belong to other sub-scales.

Table 4
Mann-Whitney U Test of Differences in Students' Perception of the Positive Impact of Case Studies Method

Panel A: Gender-based differences				
SKILLS	Mean rank		Corrected for ties	
	Female*	Male*	Z	M-W sig. (p)
Interpretation skills	21.47	28.69	-1.774	.076 ^c
Critical thinking ability	20.63	29.19	-2.106	.035 ^b
Pertinent questions	19.61	29.80	-2.451	.014 ^b
Deal with uncertainty and ambiguity	21.34	28.77	-1.798	.072 ^c

Panel B: Performance-based differences				
SKILLS	Mean rank		Corrected for ties	
	Above**	Below**	Z	M-W sig. (p)
Theory application to real-world	20.17	29.64	-2.481	.013 ^b
Application of knowledge	21.92	27.96	-1.580	.074 ^c
Ability to summarise information	22.15	27.74	-1.469	.092 ^c

* n(female) = 19 and n(male) = 32

** n(above-average performers) = 25 and n(below-average performers) = 24

^b and ^c indicate that differences are significant at the 5% and 10% levels respectively.

The *MWU* test was also employed to investigate potential prior performance-based differences. The results, as presented in Panel B of Table 4, indicate that there are differences in students' perception of case studies' capacity to facilitate the development of three of the individual skills. At the 5 per cent level, below-average students found case studies more beneficial for "applying theory to the real-world" than did above-average students. They (below-average students) also found case studies more useful for "applying knowledge" and for "developing the ability to summarise information" at the 10 per cent level. These results are not consistent with Weil et al's. (1999) findings, which found no differences in perception of the use of case studies based on prior academic performance. The results are not necessarily conflicting, however, as the Weil et al. (1999) study based its finding on a single question about the overall value, rather than on 31 questions about specific benefits, of case studies.

Students were asked to choose and rank the three most valuable benefits of case studies from the list of 31 possibilities. Their responses were then summarised according to the eight sub-scales found in the literature review. The results as reported in Table 5 are consistent with the mean ratings of each sub-scale of case studies benefits discussed earlier and indicate that students perceive case studies to be most useful in assisting them to visualise real-world business issues.

Visualisation is followed by help in dealing with uncertainty as the next major benefit of case studies, and then by help in consolidating and integrating students' knowledge of finance. Students are of the opinion that case studies benefit them least in terms of improving their communication and data exploration skills.

Table 5
Student Mean Responses and Rankings of the Three Most Valuable Aspects of Case Studies According to Sub-Scales (n = 51)

Sub-scales	Mean	Most valuable		Second most valuable		Third most valuable	
		Frequency*	Rank	Frequency*	Rank	Frequency	Rank
Visualisation (VISUAL)	5.61	24 (49%)	1	22 (45%)	1	12 (25%)	1
Dealing with uncertainty (DEAL_UNC)	5.40	3 (6%)	5	6 (12%)	2	12 (25%)	1
Consolidation/Integration (CONS_INT)	5.26	8 (16%)	2	6 (12%)	2	7 (15%)	3
Problem elaboration (PROB_ELB)	5.10	5 (10%)	3	6 (12%)	2	5 (10%)	5
Data Exploration (DATAEXP)	4.98	1 (2%)	8	0 (0%)	8	1 (2%)	8
Judgement (JUDGEMEN)	4.97	3 (6%)	5	2 (4%)	7	3 (6%)	6
Active participation (ACTPART)	4.84	4 (8%)	4	4 (8%)	5	6 (13%)	4
Communication skills (COM_SKI)	4.48	1 (2%)	7	3 (6%)	6	2 (4%)	7
Total		49 (100%)		49 (100%)		49 (100%)	

* Numbers in brackets indicates per centages. Per centages may not add up to 100 due to rounding errors

Results of a *Friedman* test (Panel A of Table 6) indicate statistically significant differences in students' perceptions of the efficacy of case studies in imparting the eight sub-scales of skills at the 1 per cent significance level. This is a strong indicator of students' abilities to differentiate between the different types of skills and the degree to which case studies are perceived to be useful for the development of each sub-scale of skills. In other words, students are perceptively conscious of the level and variety of benefits they obtained from their involvement with this mode of course delivery.

Table 6
Tests of Differences in Students' Mean Rating of Sub-Scaled Benefits of Case Studies

Panel A: Friedman's test of overall differences					
Sub-scales	Mean rank				
DATAEXP	3.88				
ACTPART	3.65				
CONS_INT	5.08				
PROB_ELB	4.54				
JUDGEMEN	3.84				
VISUAL	6.68				
DEAL_UNC	5.88				
COM_SKI	2.45				
Test Statistics	Chi-square (df)		Significance		
Chi-square	111.262 (7)		0.00 ^a		
Panel B: M-W U test of differences by gender					
Sub-scales	Means		Corrected for ties		
	Female (n = 19)	Male (n = 32)	Z	M-W Sig. (p)	
DATAEXP	4.9	5.0	-.52	0.603	
ACTPART	4.4	5.1	-1.97	0.049 ^b	
CONS_INT	5.3	5.2	-0.01	0.992	
PROB_ELB	4.8	5.3	-1.67	0.096 ^c	
JUDGEMEN	4.9	5.0	-0.27	0.791	
VISUAL	5.7	5.6	-0.71	0.484	
DEAL_UNC	5.3	5.5	-1.04	0.308	
COM_SKI	4.4	4.5	-0.23	0.826	
PT2_37 Value of the case study	5.26	5.38	-0.21	0.981	
Panel C: M-W U test of differences by prior academic performance					
Sub-scales	Means		Corrected for ties		
	Above (n = 24)	Below (n = 25)	Z	M-W Sig. (p)	
DATAEXP	4.9	4.7	-1.17	0.24	
ACTPART	4.8	4.9	-3.8	0.70	
CONS_INT	5.2	5.3	.00	1.00	
PROB_ELB	5.0	5.1	-.58	0.56	
JUDGEMEN	4.9	5.0	.000	1.00	
VISUAL	5.5	5.7	-1.508	0.32	
DEAL_UNC	5.4	5.4	-0.28	0.78	
COM_SKI	4.3	4.5	-1.2	0.23	
PT2_37 Value of the case study	5.2	5.5	-0.97	0.32	

a, b and *c* indicate that differences are significant at the 1%, 5% and 10% levels respectively.

DATAEXP = Data Exploration; ACTPART = Active participation; CONS_INT = Consolidation/Integration; PROB_ELB = Problem elaboration; JUDGEMEN = Judgement; VISUAL = Visualisation; DEAL_UNC = Dealing with uncertainty; COM_SKI = Communication skills.

Results of statistical tests to explore the possible influence of gender on students' perception of the sub-scaled benefits of case studies are presented in Table 6 (Panel B). Two significant differences are reported; problem elaboration at the 5 per cent level and active participation at the 10 per cent level. In both cases, namely, assisting with the development of problem elaboration skills and facilitating active participation in the learning process, male students rank the usefulness of case studies higher than females. The finding with respect to active participation confirms the study's findings for female students' rankings for "pertinent questions", as reported in Tables 3 (Panel B) and 4 (Panel A), as this skill falls within the "active participation" sub-scale.

Although male students (mean = 5.38) perceive the use of case studies as a learning method to be more valuable than females (mean = 5.26), the difference between the genders is not statistically significant. This is not consistent with Weil et al. (1999), who found a significant difference between male and female perceptions of the value of case studies as a learning method.

No significant differences were found between students' who scored below- and above-average on an earlier paper on any of the eight sub-scales (see Panel C of Table 6). This is consistent with a Spearman's rank correlation test we conducted (not reported here) which found no significant correlation between any of the sub-scales and prior performance results and Weil et al. (1999). These results suggest that caution needs to be exercised in interpreting the results of the earlier analysis on individual skills reported in Panel B of Table 4. The findings here indicate that prior performance has little or no association with students' perceptions of the development of skills, when these are aggregated into meaningful sub-scales.

5. Summary and Conclusion

The results of the study indicate that, according to students' perceptions, the use of case studies enhances student learning by helping to develop certain thinking skills and provide benefits identified in the literature (Kimmel 1995; Wines et al. 1994; Campbell and Lewis 1991). The major perceived benefit of the use of case studies is in the way in which they expose students to

real-world complexity, particularly with respect to decision-making. Four of the five highest perceived benefits fell into the "visualisation" subscale. These benefits all relate to the nexus between theory, practice and the real world. This result validates one of the primary reasons of the Finance (Hons.) lecturer for introducing a case-based stream into the course, namely, to allow students to integrate and to apply their knowledge in solving real-world problems.

The next most highly ranked benefit amongst the top five was in respect of "several solutions to business problems". This benefit's high ranking by students is confirmed by the high ranking of the subscale "dealing with uncertainty", which was ranked second after "visualisation". The "dealing with uncertainty" subscale contains questions relating to incomplete information, ambiguity in information and multiple possible solutions.

Although the rankings of the benefits of case studies by gender are similar for males and females, some significant differences are found in the study. For example, at the 5 per cent level, males perceive that case studies facilitate the development of critical thinking ability and pertinent questioning more than do females. The same result applies to the perception of case studies' benefits for the development of interpretative skills and dealing with uncertainty and ambiguity, albeit at a weaker (10%) level.

In respect of prior academic performance, three statistically significant differences are found in student perceptions. At the 5 per cent level, below-average students found case studies more beneficial for "applying theory to the real-world" than did above-average students. At the 10 per cent level, below-average students found case studies more useful for "applying knowledge", and for developing the ability to summarise information. While these results suggest that case studies may provide more benefits for below-average students than for above-average students, they should be treated with caution. This is so because, even though the entering grades of students into Finance (Hons.) were spread over a wide range, it would be unusual to classify any students entering a post-graduate Honours programme as being "below-average." In addition to this, no significant differences were found on the eight sub-scales based on student's prior performance.

When the hypothesised benefits of case studies are organised into sub-scales by means of factor analysis, "visualisation" is ranked as the most valuable benefit. This is consistent with the earlier

results reported, as specific benefits, such as “real-world decision-making” and “several solutions to business problems,” which consistently receive high rankings by students, are components of the “visualisation” sub-scale. This provides strong validation for the aim of Hassall et al. (1998) for using case studies, namely, developing and applying an integrated approach to problem solving and providing students with an understanding of the problems inherent in the application of discipline based knowledge to practical situations in a period of change.

A significant difference between male and female perceptions which is found for the sub-scales is in respect of “active participation.” This is consistent with females previously ranking “pertinent questioning” - a component of “active participation” much lower than males as a benefit to be derived from the use of case studies. The significant difference for “active participation” is again reflected by the significant correlation which it has with student perceptions of the overall value of case studies as a learning method in Finance (Hons.).

The results suggest that case studies, as perceived by students, do indeed provide learning benefits. However, on the basis of the findings of the study, lecturers considering the use of case studies need to reflect carefully on their reasons for using them and the relationship of this educational tool to the course objectives (Bonner 1999), on the one hand, and the gender and capability profile of the class, on the other.

6. Suggestions for Further Research

There are possible limitations associated with the current study. Some of these provide scope for further research and extension of the literature in this area. For example, as the study respondents selected themselves, it could be argued that the responses are favorably biased towards case study methods. This need not, however, reduce the validity of the findings, particularly the relative rankings of the perceived benefits of the use of case studies, as some benefits are clearly perceived by students to be more effectively provided by case studies than others. In addition, the statistical differences which emerged in the study provide clear evidence of student preferences across the skills developed by case studies - even if their overall responses are biased

favorably towards the use of case studies. Nevertheless, the issue of self-selection in studies of this nature is worthy of further investigation.

At least two findings of the study stand out as deserving consideration for further research. One is the suggestion that below-average students benefit more from their use than above-average students with respect to three specific skills, namely, applying theory to the real-world, applying knowledge in general and summarizing information. If this is indeed the case, then the use of case studies should be encouraged as a tool to assist under-performing students develop these skills. The other finding that can benefit from further study is why females showed less favorable perceptions towards the use of case studies than males. Whether attributable to learning style differences, study group dynamics and/or other factors, further information is needed.

This study has not examined the impact of personality (Hutchinson and Gul 1997), culture and learning style preferences (Auyeung and Sands 1996; Fatt 1995) on student perceptions about the benefits of case studies. It has also not considered the challenging question of whether the benefits of case study usage are in fact being obtained by students and not merely perceived by them as being obtained. These are topics for future researchers to consider.

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