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The Teaching of Corporate Construction Management

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ABSTRACT
This paper describes the case method approach as a supplementary tool for teaching Corporate Construction Management – a core subject for the Master of Construction Management degree at Melbourne School of Design. The case method of instruction has been found to be an extremely successful method of learning at top business schools and is introduced here to develop case analysis skills. The aim of this paper is to examine the effectiveness of the course design and determine the student and instructor attributes that may lead to better learning outcomes. Four cases were selected to reflect the issues covered in the lectures and to present a mix of commercial, financial and operational concerns. Although the students were initially reluctant to adequately prepare for case discussion, their attitude changed when they became more familiar with the case method. The role of the instructor in case teaching is not to prescribe a solution but to encourage the students to take ownership of the discussion and to guide the students in their search for an answer. The effectiveness of the case approach in facilitating student learning and developing students’ ability to analyse complex issues in construction management is discussed.

KEYWORDS
construction management, corporate management, teaching, case study

INTRODUCTION
The case method in business education was pioneered by the Harvard Business School (HBS) in the early part of the 20th century and has become the de-facto standard in many top business schools. The argument was that the business curriculum should emphasise a problem-centred approach based on real-life situations. Cases can be used as specific examples of established theories, to explicate particular themes or principles, to align particular theories within a broader context, or to explore complex or multi-dimensional problems of practice for which explicit theories do not exist. Recent research has indicated that the case method of teaching is effective in other faculties such as accounting (Stewart and Dougherty 1993), education (Levin 1995, Haley 2004), supply-
chain management (Flynn and Klein 2001), small business and entrepreneurship (Perren and Ram 2004), civil engineering (Russel and McCullough 1990) and operations research (Cochran 2000). Pedagogical advantages such as getting students involved in the learning process, bridging the gap between theoretical concepts and actual practical experience, integration of major concepts, increased student interest and motivation for learning, increased class enrolment have been cited as the main drivers for adopting the case method approach.

The Corporate Construction Management subject, a core subject within the Master of Construction Management degree at the Melbourne School of Design, examines management issues relating to contemporary businesses within the construction industry. Detailed description of the Master of Construction Management degree including the program objectives and course plan are available from the faculty website. It is recognised that students of the Construction Management degree will require a succinct understanding of the theories of corporate management and finance, models of organisations, the role of the manager, and corporate strategies to succeed in their future careers. In order to provide a corporate angle to the teaching of this subject, it was decided that the case method of teaching, which has been proven to be an extremely effective method of learning at top business schools, be introduced as a supplement to the traditional lectures and assignments.

The decision to introduce the case method of teaching was informed by the successful application of this method for teaching Strategic Management in the construction program (Macomber, 2010) and the author’s own experience in teaching a similar course at post-graduate level (Chan and Yap, 2010). In addition to the practical application and testing of management theory, case discussions can also help students prepare for real-world problems, situations and crises by providing an approximation of various construction industry scenarios (i.e. project finance and planning, marketing, production planning and operations, negotiations, corporate policy). Thus, through the examination of specific cases, students are given the opportunity to work on critical management and strategic issues through the experiences and research findings of others. An obvious advantage to this mode of instruction is that it allows students the exposure to settings and contexts that they might not otherwise experience.

The aim of this paper is to examine the effectiveness of the course design and to determine the student and instructor attributes that may lead to better learning outcomes. The rationale for the selection of the cases is described in the following section. The next section describes the role of the student and instructor in the case discussion followed by discussion on both student and instructor attributes necessary for a successful case discussion.
COURSE DESIGN
The topics for this subject include an introduction to the construction industry, organisational theory, financial management, competitive strategy, marketing, innovation, negotiation, leadership, corporate social responsibility and ethics, supply chain management, operations and productivity, and entrepreneurship. Each of these topics were discussed in a two-hour lecture during the semester and supplemented by two or three readings per week. The students were assessed through three assignments, each worth 20% of the course marks and a two-hour final exam worth 40%. Guest lecturers from industry were invited to teach some of the topics to provide relevance and a first-person industry perspective to the management theories. The aim of the first assignment was to evaluate the financial health of construction companies in the Australian building and construction sector by examining the financial statements and working out the financial ratios. The second assignment involved the application of generic competitive strategies to effectively compete within the construction industry. Students were instructed to prepare a market segmentation matrix for the company selected in the earlier assignment and discuss how each of these segments might be attractive for the company to pursue using Porter’s five forces model. The third assignment involved the evaluation of a complex project and the preparation for negotiating a joint venture agreement between Walt Disney and the Hong Kong government on the establishment of Hong Kong Disneyland.

In addition to this conventional approach, the case method of teaching was trialled as a supplementary learning approach to enhance the students’ ability to link the management theories from the lectures to practice, albeit at a simulated scale. The inherent strategy here was to transfer much of the responsibility for learning from the teacher on to the student, whose role, as a result, shifts away from passive absorption toward active learning. Through careful examination and discussion of various cases, "students learn to identify actual problems, to recognize key players and their agendas, and to become aware of those aspects of the situation that contribute to the problem" (Merseth 1991). In addition, students were encouraged to generate their own analysis of the issues, to develop their own solutions, and to practically apply their own knowledge of theory to these problems. Along the way, the students were expected to develop the ability to analyse and identify critical factors amongst a complex web of issues.

The cases were selected primarily to illustrate and reinforce the topics of the lectures, and also driven by the need to provide simpler cases at the start of the semester to enable students who are not familiar with this method of learning to gain the necessary skills, and to progress to more complex cases towards the end of the semester. Shapiro (1985)
produced a “Hints for Case Teaching” as a guide for both students and instructors who were new to the art of case teaching.

The first case was SOHO China (HBS 9-703-011 March 24, 2003) which described the founding and early success of a real estate development company based in Beijing. The case revolves around the two founding partners and their role in building one of the most successful real estate companies in China today. Having previously covered Porter’s Five Forces Model in the preceding week’s lectures, this case was centred on creating a market segmentation matrix for the company and to discuss how each of these segments might be attractive from a strategic point of view. The case was also utilised as an example for students to learn the necessary skills for case analysis. Many students have come from a traditional lecture based mode of learning and have had no experience with the case method, and thus have were completely at a loss on how to proceed to examine the vast amount of information contained within a case report. The second case selected for this subject was Kone: The MonoSpace Launch in Germany (HBS 9-501-070 February 25, 2005) which required students to prepare a marketing plan for the launch of the new MonoSpace elevators in Germany. This case provided a good balance of issues ranging from the technical requirements for the installation and operations of the new elevators, to the commercial arrangements to market these elevators in France, United Kingdom and the Netherlands. Students were instructed to develop detailed analyses of the markets in each of these countries and to correlate Kone’s marketing effort to the sales figures. Their task was not only to position and price the MonoSpace, but also to develop a marketing plan. Arborite (HBS 9-796-146 February 14, 2006) was chosen next to highlight the decision making process to improve the manufacturing operations of high-pressure laminates for the Canadian market. This case examined various options for investing into equipment and technology to improve product quality in order to meet a corporate target of 19% return on asset. Students were advised to examine the production process carefully and to determine where savings can be made, or to modify their corporate strategy to adjust to the entry of a new player in the market.

The final case study required the students to play the role of either Walt Disney Company or the Hong Kong Government in the negotiations to establish the joint-venture company to invest in and operate a new Disneyland in Hong Kong. Students taking on the role of Walt Disney were required to read Hong Kong Disneyland (A): The Walt Disney Perspective (HKU-107 01 January 2000) whereas the students representing the government read Hong Kong Disneyland (B): The HKSAR Perspective (HKU-118 01 January 2000). The teaching objectives of these cases were to explore the making of cross-border investments and market entry decisions, and to apply project evaluation techniques. By dividing the class into two groups examining two separate perspectives of
the investment into Hong Kong Disneyland, the cases were also used as the basis for a simulated negotiation between the HKSAR government and the Walt Disney Company in seeking the most favourable terms for the joint venture agreement. Hong Kong Disneyland (C): The Joint Venture Negotiation (HKU-120 01 January 2000) provided the basis for the negotiations with a series of questions to assist students prepare their negotiating strategy.

PREPARATIONS FOR THE CASE DISCUSSION

‘If the student does not read and analyse the case, and then formulate an action plan, the case discussion will mean little’ (Shapiro 1985). It is recognised that students in the subject will have no previous exposure to the case method of learning and will not be able to adequately prepare for the case discussion. It is worth noting that the first case was chosen to illustrate the various steps in case analysis from identifying the main points, determining the focus of the case (this is usually provided by questions posed by the instructor before the discussion), the search for pertinent data, and the development of proposed solutions or alternatives. The focus of the SOHO China case was therefore limited to the purpose of demonstrating the expectations for student involvement in preparing for case discussion.

The students were then expected to prepare for the remaining cases on their own and to come to class with their case notes in hand. Numerous students who prefer working with spreadsheets for evaluating financial statements and project evaluation calculations came equipped with personal notebook computers. Students reported that they spent between 2.0 to 2.5 hours preparing each case and up to 7.5 hours for the final case which was conducted over 3 sessions. Once the methodology for case analysis was shown to the students in the first case discussion, a number of students were able to formulate their analysis, to prepare an action plan correctly and were willing to share and defend their proposal in class. As the students grew more familiar with the case method of learning, more students were able to adequately prepare for the case discussion. However, it was disappointing to note that a small number of students remained steadfast in their reluctance to prepare for case discussions and were willing to be observers instead.

On the other hand, preparation by the instructor to teach must include a teaching plan that lists a series of questions to explore the students’ understanding of the case. The instructor’s preparation to teach the case must include a well developed chalkboard plan of the main issues, a list of questions to encourage greater depth and focus in the discussion, and a sample analysis of the pertinent points in the case.
STUDENT ATTRIBUTES

Attendance at the case discussions ranged from 65% to 90% with an average of 80% which was typical for post-graduate courses in the program. Although the case discussion groups were limited to a maximum of 15-20 students per session to ensure that all students were given ample opportunity to speak and exchange ideas, it must also be noted that a significant number of students enter the classroom late and disrupt the on-going discussion. Clearly the case method requires that student’s learning is best facilitated by regular participation where the student shares his or her understanding and analysis with the class to advance the group’s collective skills and knowledge. It has been suggested that the single most important rule of case teaching is that the students accept and maintain ownership of the discussion. If the instructor takes the responsibility for ownership of the class, the students can collectively and individually avoid their responsibility and the process will degenerate to the instructor lecturing about the case.

Observations from the class discussions indicate that 70% of the students were participating actively during the class discussions initially and this figure increased to more than 90% for the final case. Many of the questions during the early part of the semester were centred on seeking clarifications but these eventually shifted to more sharing of their understanding and presentation of their action plans during the latter part of the semester. Although a number of students were actively contributing to the case discussions, the quality of their arguments or points were clearly affected by the lack of efforts in preparing for the discussion. Such behaviour was detrimental to the overall quality of the discussion and evidently unfair to the other students.

A substantial number of students were obviously engaged with the case method of learning and commented positively about the course:

‘Content and material very stimulating and different compared to previous management related subjects’, ‘Seminar sessions, Two way interaction during lectures, Interesting discussions on topics rather than only going through slides theoretically’, ‘Give the opportunity for the student to learn about the corporate construction industry deals with their business and strategy’, ‘Different perspective on the construction industry, from the corporate view’, ‘The practicality of the assignments, the real case studies and aspects of corporate construction management are intellectually stimulating’, and ‘Case study format’

Conversely, a number of students reported a number of shortcomings:

‘Not immediately relevant to new graduates of the industry’, ‘We have so much to understand in so little time, especially not from a finance background’, ‘The poor attendance of students in the tutorials and lack of
engagement with the readings. It diluted the overall effectiveness of the seminars.’, ‘Could be too general instead of focusing on construction’, and ‘Student commitment was low due to external commitment e.g. work’

INSTRUCTOR ATTRIBUTES
As case teaching is very much a mixture of art and skill (Shapiro, 1985), the instructors must cultivate the art of listening to the ideas of others and the importance of the students’ ideas and approaches to support the discussion on the case. It is not the instructor’s role to provide a solution to the case nor is it the instructor’s decision to make a choice on the case approach. His or her principal role is to encourage the students to take ownership of the discussion and to force the students to make a choice of the case decision, to have a plan of action, and to ask supporting questions like “Why would you do that?” or “What evidence can you provide to support your proposed approach?” The instructor must resist all attempts to teach the case, but act to facilitate discussions amongst the students about the case and to guide the analysis toward a meaningful outcome. Most case discussions end with the instructor delivering a few general comments that review and highlight the discussion, frame the approach and action plan in cognisance of the contributions made by the students, and may include a short lecture to either clarify some issue or to cover adjunct material.

DISCUSSION
A survey conducted by the teaching office at the end of the semester in 2009 and 2010 revealed that the students agreed that the subject was well taught, the case discussions were helpful and added to the learning process, and that they were satisfied with the quality of learning (mean scores between 4.3 and 4.5 in questions 2, 9 and 11, for both years, in Table 1). On the course evaluations, some students mentioned that cases were indeed an additional burden, but almost unanimously endorsed them as effective learning tools that were well worth their time and effort.
Table 1 – Results of the quality of teaching survey conducted during 2009 and 2010 (sample rate 33% and 75%, respectively)

<table>
<thead>
<tr>
<th>Quality of Teaching Survey</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score†</td>
<td>Std Dev.</td>
</tr>
<tr>
<td>1 Clear expectation of me in the subject</td>
<td>4.2</td>
<td>0.58</td>
</tr>
<tr>
<td>2 This subject was well taught.</td>
<td>4.4</td>
<td>0.62</td>
</tr>
<tr>
<td>3 This subject was intellectually stimulating</td>
<td>4.3</td>
<td>0.61</td>
</tr>
<tr>
<td>4 Received helpful feedback</td>
<td>4.3</td>
<td>0.61</td>
</tr>
<tr>
<td>5 Teacher showed interest in my academic needs</td>
<td>4.2</td>
<td>0.58</td>
</tr>
<tr>
<td>6 Felt part of the group</td>
<td>3.8</td>
<td>0.86</td>
</tr>
<tr>
<td>7 Effective use of computer based materials</td>
<td>3.9</td>
<td>0.47</td>
</tr>
<tr>
<td>8 Web based materials were helpful</td>
<td>4.2</td>
<td>0.58</td>
</tr>
<tr>
<td>9 Overall satisfied with the quality of learning</td>
<td>4.5</td>
<td>0.63</td>
</tr>
<tr>
<td>10 The lectures were well presented</td>
<td>4.7</td>
<td>0.46</td>
</tr>
<tr>
<td>11 The seminars were helpful and added to the learning process</td>
<td>4.5</td>
<td>0.63</td>
</tr>
<tr>
<td>12 The assignments were clearly worded and their intent was clear</td>
<td>3.9</td>
<td>0.92</td>
</tr>
<tr>
<td>13 The assessment helped my learning</td>
<td>4.3</td>
<td>0.82</td>
</tr>
</tbody>
</table>

† Five-point scale (5-strongly agree to 1-strongly disagree)

It is obvious that the case method of learning depends two sets of attributes: students’ and the instructor’s. Although the purpose of instituting the case method was to transfer the responsibility for learning from the teacher on to the student, a number of students were reluctant to take on that responsibility in this example. A number of students were often absent from the case discussion. Another segment of the student cohort was only willing to put in the minimum effort to prepare for the case discussion and was not effective in producing an action plan. Their lack of effort became evident during the early part of the semester but reduced significantly toward the latter half when students realise the value of preparations for these discussions. As students studied the cases more assiduously, they became more confident about expressing their ideas and more secure in what they wanted to say. The more motivated students who attend every case discussion and brought along numerous sheets of case notes were clearly those who benefitted significantly from the case method. These discussions provided a forum in which they could critically analyse one another’s ideas in a manner that was academically productive. Feedback from
students indicates that they have learned more from each other than from the lectures or from the instructor, which is an excellent outcome.

The attributes required of an instructor correspond to those suggested by Golich (2000) who noted that successful case teaching “is the art of managing spontaneity”. Golich contends that the skills that instructors need to develop are case mapping, asking questions, active listening, validating student participation, and using the blackboard. Many of these skills can be learned either through practice or by observing an experienced case instructor.

CONCLUSIONS

After offering this subject for two consecutive years in 2009 and 2010, each year to a class size of 39 and 34, respectively, the case method of learning has been found to be an instructive tool to supplement the traditional lectures. Progressively more difficult cases were selected to enable students to be familiar with the case method of learning. Many students have indicated that the additional workload with case analysis was well worth the effort and have contributed significantly to their understanding of the topics covered in the lectures. On the other hand, a small number of students who did not take active part in the case discussions have found the additional workload overwhelming and unnecessary, and may have missed the opportunity to learn a new skill. Students who have responded positively to the case method of learning have confirmed most of the observations from other researchers of the benefits of this approach (Raju and Sankar, 1999, Bocker 1987, and Golich 2000).

Further research into the learning outcomes may be required to determine if the subject should be modified in the future to reflect a greater emphasis on the case method of learning; possibly extending it to teaching the entire subject using the case approach. As it now stands, the case method remains as a supplement to the lectures and written assignments, and serves to provide students with additional case analysis skills. The more difficult task of measuring achievement of the learning objectives beckons (see e.g. Bocker, 1987).

REFERENCES

Bocker, F. (1987) Is case teaching more effective than lecture teaching in business administration? An exploratory analysis, Interfaces, 17(5), 64-71


