

# Learning by Doing through 'In-firm' Projects

*Yi-zheng Shi and Wai-sum Siu*

*Hong Kong Baptist University*

## Abstract

In order to bridge the gap between the actual business world and traditional teaching in business education, a new approach, that of action learning utilising 'in-firm' projects, has been initiated, on an experimental basis, in the School of Business, Hong Kong Baptist University. This paper describes the implementation of the programme, and reports on the findings of the evaluation. It was found that the programme of 'in-firm' projects achieved the original objective with positive feedback being received from the students. However, to achieve better results, improvements to the programme are necessary and both faculty and students need to demonstrate greater commitment.

## Introduction

Business students frequently ask such questions as: "Are the tenets of management which are taught in the classroom applicable in real business?" "Could I learn the skills to effectively communicate with business people?" and "What are the attributes of business executives?" Apparently, these questions cannot be answered when using traditional pedagogical approaches. Although the need to bridge the gap between real business life and business education in universities has been recognised in many other countries (Laughton, & Ottewill, 1998), in Hong Kong, university instructors still largely use lectures, cases, videos, guest speakers and personal experience sharing sessions, to teach business courses. Consequently, a closed system, within which there are very few interactions between companies and universities, is formed consisting mainly of instructors and students. Many students find these traditional teaching methods inadequate to meet the needs of the fast changing business world.

In a real business environment, a problem does not usually have only one absolutely correct solution. Johnson (1998,p.14) argues that a business problem is "some embarrassment to the top management to which different reasonable, honest and experienced men would suggest different approaches, according to their personal value systems and individual past achievements". Indeed, doing business is more like arts than sciences since managerial competence consists of three crucial components: knowledge, skills and capability, and personal development (Johnson, 1998). Business knowledge consists of mainly codified experiences of successful business people, with the codified knowledge being learned through traditional classroom teaching. However, as noted by Weinstein (1995), this type of knowledge as cognitive retention of factual information and techniques, cannot make managers, just as people cannot learn how to play tennis well purely through lectures and books (Nelson, 1990). Business skills and capabilities are about the way to understand and make use of tacit knowledge that is particular to the specific circumstances of time and place. These special skills and capabilities, essential to managers, include teamwork skills, motivation of people, delegation of assignments, listening and communication skills and leadership. From a pedagogic point of view, however, these capabilities can hardly be learned

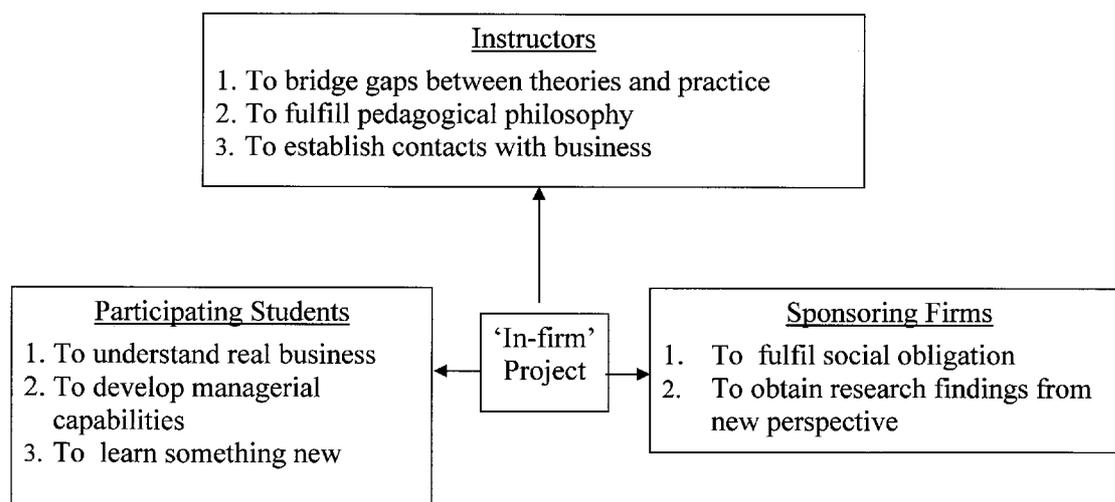
through traditional classroom teaching without exposing students to real life business problems, just as people cannot learn to swim if the coach does not ensure that they get wet.

## The Characteristics of 'In-firm' Projects

In order to bridge the gap between the actual business world and traditional teaching in business education, a new approach, that of action learning, utilising 'in-firm' projects was initiated and implemented, on an experiential basis, in the School of Business at Hong Kong Baptist University. The philosophy of the 'in-firm' project was to provide students with an opportunity to apply textbook theories to practical problems in an actual business environment and to foster in students managerial capabilities such as leadership, initiative, communication, co-operating with each other, and problem solving, etc. The 'in-firm' project was therefore a vehicle of problem-based learning.

The 'in-firm' projects necessitate the involvement of three parties (Laughton, & Ottewill, 1998): students, instructors and sponsor firms, each of them interacting with each other to develop values. For the students, this was a new experience that would allow them to familiarise themselves with the real business environment. It would also deepen their understanding of other taught business subjects. More importantly, it would foster such business capabilities that cannot be learned from books. For the instructors, this approach would help facilitate the fulfillment of the pedagogic objective of business education, providing an ideal environment to integrate knowledge from various disciplines with practice and thus bridge the gap between theories and actual business life. For the sponsor firms, ideas seen from fresh perspectives would provide new insights. By sponsoring such 'in-firm' projects, companies would not only be able to access the results of research studies, but they would also fulfill their social obligations and make themselves known to future generations of managers.

Figure 1: The value gained from 'in-firm' projects



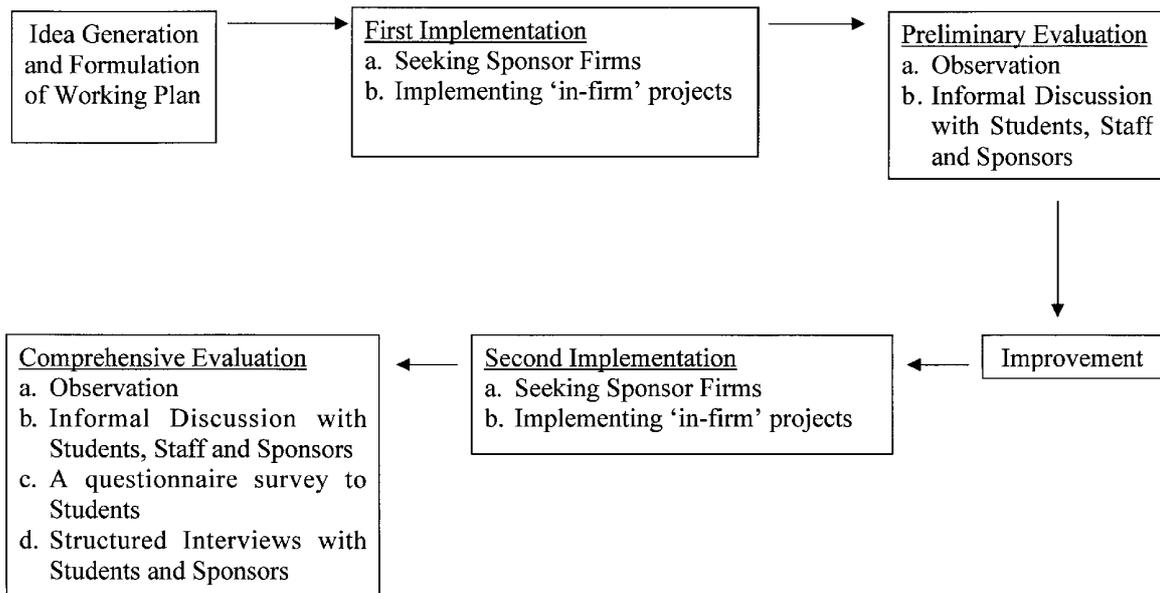
Stinson and Milter (1996) suggest that some principles of problem-based learning can be used to guide the design of the 'in-firm' project. These include ensuring that:

- problems mirror the professional practice;
- problems are challenging and stimulating; and

- various skills and a knowledge base are needed to solve such problems.

Because of its nature, such problem-based learning takes place most effectively when students are working in a group of equal learners. Confronting an actual business problem, students within a group will be inspired by each other to stimulate ideas and discuss and formulate the development of possible solutions. When facing difficulties, they will support each other emotionally and by contributing individual expertise will achieve the greatest synergy. In addition, a team-effort to solve problems will facilitate the provision of an environment which will enhance students' abilities to communicate and co-operate more effectively. In problem-based learning the role of instructor is that of a facilitator and a co-ordinator and is therefore rather different from that of the teacher using didactic teaching methods. When utilising 'in-firm' projects, the teacher should first initiate, design and construct a learning framework to achieve the teaching objectives mentioned above. Second, he should formulate a feasible working plan to implement the 'in-firm' projects. Third, he should carefully monitor the progress of individual projects and provide assistance when needed. Finally, he should review the process and assess the performance of students. Based on reflection of the experience, he should refine the framework and working plan to improve the programme. The rationale behind this exercise is that the instructor himself is also learning how to realise the objectives of the 'in-firm' projects. Therefore, the implementation of 'in-firm' projects is an action learning process through which the curriculum is continuously being improved as shown in Figure 2.

Figure 2: Working plan and implementation of the 'in-firm' projects



At the very first stage of programme initiation and working plan development, the objectives to be achieved through the 'in-firm' projects should be clarified and agreed between faculty and students involved in this programme. They must not only envision the merits of this approach, but also realise the challenges and the need for rigorous learning. In this sense, a difficult problem is the starting point of learning. To solve these difficulties is to solve the business problem. In other words, this is a special kind of learning arrangement. Through this, students are learning by doing and by working together. However, real life situations can be idiosyncratic. Therefore, to achieve the greatest effect, the programme of 'in-firm' projects should be designed as an integral part of the entire

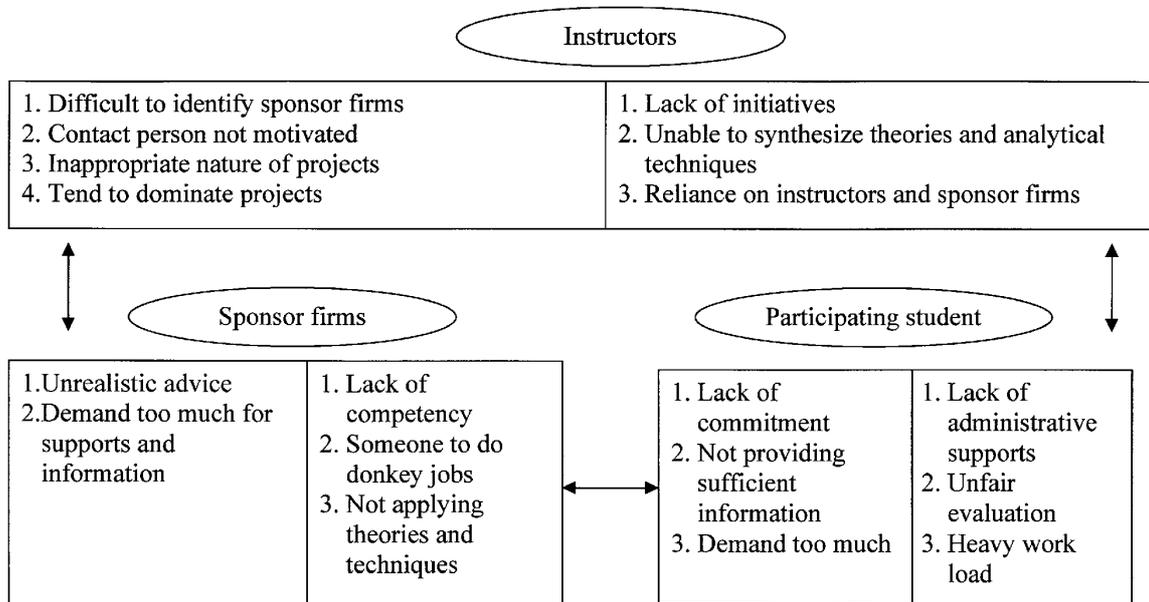
course of business education, i.e. the programme should enhance the understanding of other subjects. The knowledge and techniques of other subjects will help students successfully complete the 'in-firm' projects. In order to achieve better results, students should be well-equipped before the implementation of 'in-firm' projects. In the pre-project briefing sessions, they should be taught some of the practical techniques, such as enterprise diagnosis technique, interview skills, and business report writing skills. Furthermore, the type of sponsor firms should be carefully selected and the nature of 'in-firm' projects should be purposefully matched with the ability of students. The sponsor firms should commit themselves to the programme of 'in-firm' projects and be willing to provide professional knowledge and business information as well as logistic and administrative support. The 'in-firm' projects are to train managers rather than engineers. Therefore, specific technical and engineering knowledge required to solve a problem should not be too difficult for the students to understand. Finally, the needs for logistical as well as academic support for the 'in-firm' projects is intensive since learning activities are conducted outside the campus and the nature of teaching is very different from the usual teaching activities. In the formulation of a working plan for the 'in-firm' projects, the possible practical difficulties and the students' need for advice from instructors should be anticipated and the necessary resources firmly in place.

During the implementation stage of 'in-firm' projects, careful preparation and sound management of the projects and coordination among students, instructors and sponsor firms are important to ensure effective outcomes (Laughton, & Ottewill, 1998). First of all, the team of a group of students should be carefully formed. Although there are no accepted rules about the constitution of a group for such a project, a team of four to six students seems optimal (Johnson, 1998). Further, students with different expertise, skills, and personality in one group will achieve better learning outcomes, if they can co-ordinate well. Therefore, when forming the groups, students should consider the strong points of individual group members as well as the relationship among them to obtain the greatest synergy. Second, the philosophy of 'in-firm' projects is to allow students to learn through solving a real business problem themselves. Therefore, assistance in terms of advice specific to the problem from instructors should be kept minimal. Nevertheless, instructors should closely and constantly monitor the progress of each project and give immediate guidance to students if there are indications that students are heading in the wrong direction. This is to be expected because students and sponsor firms may have objectives which are different from the learning objectives of the 'in-firm' projects. Students may not be motivated enough to commit themselves to rigorous learning through actively applying relevant theories and analytical techniques to the projects, and the sponsor firms may dominate the operation of projects to achieve their own business objectives.

The 'in-firm' projects involved three parties: students, sponsor firms and instructors. The commitment of these three parties to the in-firm projects and the coordination among them are essential for the achievement of optimal learning effects. Since their respective objectives and the roles they play are different, it is inevitable that they each will have different expectations from the others. For example, students may expect more advice from the instructors and more information from the sponsor firms rather than being self-directed in the process of problem-solving. Because projects of some firms may be more difficult than those of other firms, and the support provided by each firm may be different from other firms, students may worry that they are not evaluated on an equal basis. The sponsor firms may over- or under-estimate the capabilities of students and ask them to undertake some unrealistic assignments. They also may try to achieve their own goals and therefore ask students to do such work that is not helpful to achieve the original objective of the programme. They may think that the curriculum is too academic and the advice given by the instructors not realistic. The instructors may under-estimate the difficulty of the 'in-

firm' projects and consequently provide insufficient academic support and resources to students. These expectations, if unrealistic, may become obstacles to the smooth implementation of 'in-firm' projects. A comprehensive review will identify these problems and is helpful when developing remedial measures to improve the curriculum.

Figure: 3 Problems encountered in the 'in-firm' projects



## The Implementation of In-firm Projects

In practice, the 'in-firm' projects are organized on an experimental basis for the final year students of the China Business Studies (CBS) option in the School of Business, Hong Kong Baptist University. The China Business Studies option covers various disciplines and focuses on the China market. Because of its multidisciplinary nature, the 'in-firm' projects are most appropriate to students in this option. The projects' programme lasted for one year and was divided into two major parts consisting of several stages (see Figure 2).

This was the first time that the instructors had implemented the 'in-firm' projects programme. It therefore was a *learning-by-doing* process. To initiate the 'in-firm' projects, a preliminary working plan was developed which guided the conduct of the programme. According to this working plan, the programme was to last for a complete academic year and consist of two stages to coincide with the semesters. In the first semester, the 'in-firm' project was undertaken on a small scale, at the end of which a preliminary evaluation was conducted to refine the original planning. Feedback from students and sponsor firms was collected to improve the original plan. In the second semester, the working plan was improved and the programme conducted on a larger scale. At the end of the academic year, a comprehensive evaluation was conducted. Feedback from the students, sponsor firms and instructors was collected and analysed systematically. Insights into the lessons and experiences were gained that would be of benefit to the future implementation of similar problem-based learning projects.

The 'in-firm' project was conducted as a component of the usual taught subjects. In the first semester of the 1998/1999 academic year, the programme was conducted as a term project of

the subject: Marketing in China. Two groups of students participated in the programme on a voluntary basis. In the second semester, the programme became an integral part of the subject : Seminars in China Business. The complete class of 35 students, divided into six groups, carried out the 'in-firm' projects.

The implementation of 'in-firm' projects consisted of several important activities and is described as follows.

### **a) Sponsor Firms Selection**

As discussed earlier, sponsor firms play an important role in the programme of 'in-firm' projects. They provide a real business environment as well as the business problem that students have to solve. Therefore their commitment in forms of necessary information, professional knowledge and logistic support is critical. To search for interested firms, we used several directories such as the directory of the General Chamber of Commerce Hong Kong and the name lists of firms provided by the American Chamber of Commerce. The criteria to select potential sponsor firms from these directories include the size and business scope of firms. Specifically, sponsor firms should be relatively large since large firms normally are more interested in the programme of 'in-firm' projects and have relatively formal management systems which will ensure their commitment. Preferably, they should be in the manufacturing sectors, having intensive business with China. In order to find sufficient firms that are willing to participate in the programme of 'in-firm' projects, we started searching for potential sponsor firms two months before the first semester of 1998/99 academic year. A covering letter, together with the working plan was sent to more than 50 firms selected from the directories. In the letter, we explained the objective of the programme, what we were seeking from sponsor firms, the detailed working schedule of the programme, and the responsibilities and obligations of firms.

Before the start of the first semester, four firms replied positively. To determine whether these firms were suitable to participate in the programme, instructors contacted the companies by email or telephone. In the discussion with managers of the potential sponsor firms, we explained further the objective of the 'in-firm' projects and the manner in which they were to be conducted. This helped firms to understand further the goal that we wished to achieve. A wide range of issues were discussed including the reasons why firms were interested in such a programme, what the firms wished to achieve, and the nature of specific projects which firms might ask students to conduct. In order to ensure a good start, we finally selected two firms as our sponsor firms for the programme in the first semester: one a manufacturer of snack food, and the other an electronic component producer.

During the first semester, a number of firms responded to our invitation to participate in the programme. To find more sponsor firms, another 50 letters were sent out in November 1998. From the perspective of the firms, this time, the working plan became more concrete and feasible. A further eight firms responded from which four new firms were chosen following discussion with their managers. Since the two firms which participated in the programme in the first semester wished to continue as our sponsors, we then had six companies as sponsors for the programme in the second semester. Among the four new firms, two were in the electronic sector, one in the food industry and one a cosmetics producer. The size of these firms varied. Half were multi-national companies and the remaining three were local medium sized firms.

### **b) The Preparation of the Student Operational Manual**

A comprehensive and feasible operational manual is necessary for students who have little experience of 'in-firm' projects. Therefore a detailed operational manual was drafted to

give guidance to students participating in the programme. It consisted of three parts: the requirements of the project, the theory and method of firm diagnosis, and how to conduct a business research project in China.

The first part clarified the nature and objective of the programme and outlined the working procedure when implementing 'in-firm' projects. This helped students understand that the project is a problem-based learning process, meaning that in addition to the written report, students were also expected to foster, for example, their ability to work in a team and to improve their communication skills. The second part consisted of the basic theory, method and procedures of conducting an actual business project. It also gave a list of relevant reference books related to the area. The third part was mainly about how to conduct a survey in Mainland China, major sources of information, and how to identify and interview managers in China's state owned firms.

### **c) Teamwork**

The 'in-firm' projects were conducted in groups. Students working in a group environment learn from, and motivate, each other. They also learn how to co-ordinate and co-operate with each other to achieve a common goal. Therefore the composition of team members is very important. In practice students selected their groups members themselves. When selecting group members, most students understood the importance of having students with different abilities in one team. However some of them ignored the synergistic effects and insisted on being in a group with their friends.

During the implementation process, it was found that a competent group leader was critical in ensuring that procedures were performed correctly and in time. For example, among the six groups in the second semester, one group performed quite poorly. Their progress was always behind that of the other groups and their conduct was passive. Instructors needed to check their progress and 'push' them to keep the whole process moving. Towards the end of the second semester, they still had not started to collect data because they did not know how and where they could find information. Following discussion with them, instructors found that there was nobody in the group who would take the responsibility of project coordinator. This was in sharp contrast to a few groups who were very pro-active. In order to facilitate the implementation of projects, they initiated a number of new ideas. Because some group members were active they stimulated other students to work hard and creatively. Moreover, a co-operative climate in a group was proved to be very important since it would reduce the tendency, by some students, to 'take a free-ride' in the group.

### **d) Communications with Sponsor Firms and Students**

Throughout the process, instructors - who should always take the initiative - were in communication with managers in charge of the programme in the sponsor firms. Before the start of the programme, they communicated with firms by presenting the programme proposal and the working plan, followed by telephone conversations and email to confirm the first meeting between students and managers. Instructors participated in all the first meetings. Usually these meetings were held in the office of sponsor firms since firms wanted to introduce company background, and brief students on the project. They also wanted to introduce students to managers in different divisions so that they would know who they could turn to for different types of information and support.

When the projects were in progress, instructors kept in touch with contact people in the sponsor firms to exchange ideas about the progress of the programme. For example, they discussed the concerns of the students, the major ones being the lack of information from the sponsor firms, insufficient professional guidance, lack of logistic support and difficulty in

making appointments with the relevant managers in the sponsor firms. Instructors also received feedback from sponsor firms about the performance of students, managers usually giving comments about the areas in which students should improve, and how. Communication with sponsor firms allowed instructors to work out appropriate ways to remove possible obstacles to the programme.

As instructors, we met with each group every two weeks to talk with students about the progress of the project. As previously mentioned, we refrained from providing specific advice about how to solve research problems. Instead, we tried to encourage and stimulate students to tackle the problems themselves. If the students were heading in the wrong direction, we indicated this and asked them to develop an alternative working plan. We listened to their feedback. The major difficulties encountered by students fell into two categories. The first concerned operational problems including insufficient time to complete the projects, lack of information and lack of support from sponsor firms. These problems were inevitable since it was the first time that such a programme had been conducted. As we gain experience in implementing 'in-firm' projects, these problems will be reduced. The second type of difficulty arose because students had no experience of dealing with research problems in the actual business world. They were not used to working under pressure and finding alternative solutions should the original plan not work. These capabilities were indeed what we planned to foster through the programme. Therefore when students met these types of difficulties, we tried our best to encourage and inspire them to work independently.

### **e) Evaluation of Project Performance**

As previously mentioned the objective of the programme was to provide a real business environment for students to apply what they had learned in the classroom. This entailed fostering managerial capabilities such as team work, working within time and information limits, leadership and communication skills. Therefore, the evaluation of the performance of students included not only academic achievement but also evidence of their practical working ability. Specifically the quality of their presentation and written report accounted for 70 percent of the total mark and evidence of their practical ability 30 percent.

To assess the quality of the project, each group of students were asked to give an oral presentation to report their project findings. They were also required to submit their written work. Both managers from sponsor firms and instructors participated in the evaluation of the students' oral presentations and written reports. Instructors, on the basis of observations and communication with students and sponsor firms, also ranked the performance of each group in the project implementation process. The differences in the level of difficulty of projects and the support from sponsor firms were also taken into consideration when assessing the performance of students. Sponsor firms were also asked to complete an evaluation form to assess the performance of students.

Since some firms were more committed to the programme than others, students attached to those firms felt that they had learned more and their projects were of a higher quality. Similarly students in firms which were less committed thought that they were evaluated unfairly. This is one of the most difficult issues which we, as instructors, must solve. A possible solution is to identify the problem as early as possible so that instructors can intervene and advise the sponsor, or provide more support themselves to students in these firms.

## The Review of 'In-firm' Projects

The final stage of the programme was the review of the learning effectiveness of the 'in-firm' projects. This is very important for the following two reasons. First, a thorough review will help instructors evaluate the learning effects. As a problem-based learning activity, the 'in-firm' projects tackle real business problems. These problems are usually ill-structured and, to the students, there is no readily available and absolutely correct answer. In addition to the enhancement of problem-solving capabilities, the 'in-firm' projects also intend to foster other less apparent, but very important, abilities such as leadership and coordination with team members. The former can be inferred, at least partly, from the analytical skills and solutions demonstrated in the reports of students. The latter can only be found through a comprehensive review. Second, a complete review can allow instructors to find out what goes wrong if the learning effects are not as good as expected, and to improve the curriculum accordingly.

### Review Methods

As facilitators of 'in-firm' projects, instructors of HKBU used various methods to gather feedback from the sponsor firms and students. To obtain a set of longitudinal data on the operation and effectiveness of the 'in-firm' projects, the review process was conducted over one academic year consisting of two phases of the programme. To obtain a comprehensive picture of the whole process, both the informal methods of observation and the formal methods of evaluation were used.

The informal review methods included performance observation and informal discussion with students and sponsoring firms. The purpose of the method of performance observation is to monitor the whole process and to obtain an overall impression of the attitude and perception of students towards the programme. This kind of review was conducted alongside the implementation of the programme. Although this was a subjective method, it helped instructors obtain first-hand information of the progress of the programme. The information gathered through this method included the activities carried out by the students to prepare for, and to actually undertake, the 'in-firm' projects. Informal discussion with students, staff members and sponsor firms was held to get first-hand information, some of which was not foreseen by the instructors, and helped them to improve the working plan later on. Because this method did not use a formal questionnaire, the participants felt more free to express their ideas. The data from informal discussion not only were used as the basis to draft a questionnaire for the formal evaluation, but also to supplement the formal survey results.

Formal evaluation included a questionnaire survey of students and a number of structured interviews with students and sponsor firms. The formal evaluation aimed to investigate in detail, and rigorously, the responses of students towards the 'in-firm' projects and the effectiveness of this programme in enhancing the quality of business education. It also aimed to find a possible direction to improve the design and implementation of the programme. The formal evaluation was carried out after the completion of the 'in-firm' projects. The critical issue of the formal evaluation was to ensure that the information collected, genuinely reflected the opinion of students and sponsor firms so that the programme of 'in-firm' projects could be refined accordingly. Since the number of students was limited, we personally administered the formal questionnaire survey to ensure the response rate and to allow the instructors to clarify any ambiguous issues.

In the formal questionnaire survey of students, we asked a number of questions that were grouped into six aspects to give a comprehensive picture of the whole process of the 'in-firm' projects. They were Learning and Academic Value, Organization of the Project, Group Interaction, Support from Department/Instructor(s), Support from the Sponsor Firm, and

Workload/Difficulty. In addition, several open-ended questions were also included to give students an opportunity to comment on the whole programme. To facilitate the data analysis, students were asked to indicate on a five point Likert scale, to what extent they agreed with each evaluative statement. All statements were phrased positively. Individual scores in each aspect were then summed up and averaged to give an overall score for that aspect.

Structured interviews with sponsor firms at the end of the programme were important sources to determine what the firms thought about the students, and their suggestions to improve the whole programme. The interviews were conducted mainly by telephone. The questions for the interview focused on the firms' evaluation of students' performance, the benefits they obtained, and the difficulties they encountered during the programme. Opinions about how to improve the programme and the possibilities of future co-operation were also mentioned in the interview.

## Results

In total, there were 34 students and seven firms participating in the programme during the 1997/98 academic year. At the end of this programme, a formal questionnaire survey and a number of structured interviews with students and sponsoring firms were carried out. Figure 4 shows the response rate of these formal evaluation exercises.

Figure 4: Response rate of different evaluations

Methods	Questionnaire (To students)	Structured interview (To sponsor firms)	Structured interview ( To students)
Response Rate	76%	57%	45%

### Feedback of Students

The response rate of the questionnaire survey and the structured interviews with students is 76% and 45% respectively. The results of these two formal evaluations are summarised into six dimensions as shown in Figures 5 and 6 and suggest that the students as a whole were satisfied with the 'in-firm' projects, and generally thought that the programme enhanced their understanding of the business world. The programme also provided a chance for students to learn from each other. Nevertheless, the figures also tell us that students were not so pleased with the organisation of the programme and the support of the sponsor firms.

The first dimension was the learning and academic value of the programme (Figure 5). The response of students in this dimension was positive, the reason being that they learned how to work under pressure (mean = 4.11, S.D. = 0.65) and also found the project intellectually challenging and stimulating (mean = 3.88, S.D. = 0.95). In the open-ended comment section, the majority of respondents (65%) indicated that gaining real world business experience was one of the most distinctive merits of the 'in-firm' project. They also thought that the project was practical and challenging. They learned how to deal with business people as well as learning about many new areas that could not be learned in the classroom. An analysis of the structured interviews with students reflect that the 'in-firm' project provided a good opportunity for them to learn more about doing business in China (51%). They gained valuable experience from firm visits and field market research in China.

Figure 5: Evaluation on five dimensions of the 'in-firm' project

Item	Dimensions	Mean	S.D.
1	Learning and academic value	3.66	0.59
2	Organization of the programme	3.26	0.62
3	Group interaction	3.74	0.77
4	Support from department/ instructor (s) and project assistant	3.65	1.94
5	Support from the sponsor firm	3.16	1.03

Students gave relatively low marks to the second dimension, that is the organisation of 'in-firm' projects, reflecting that instructors were less experienced in conducting this type of activity. The interviews revealed that the timetable of 'in-firm' projects did not match the schedule of students for other subjects. Some students thought that the grading of the 'in-firm' projects was unfair and complained that the support given by sponsor firms varied and this should be taken into consideration when instructors assessed the performance of different groups.

Students highly appreciated the third dimension, group interaction, agreeing that they had good and happy group interactions during the implementation of the 'in-firm' project. It is reflected in the results of students who have learned to work as team members (mean = 3.88, S.D. = 0.86). Students also enjoyed sharing ideas with group members (mean = 4.00, S.D. = 0.85). Seventy one percent of students in the structured interviews thought that they had good relations with team members because they formed the working groups themselves. However, this created a problem because some students only wanted to work with their friends. This kind of practice might result in some groups not having differences in expertise and capabilities amongst its members, and therefore, not having the greatest synergistic effects.

Students were satisfied with the fourth dimension of the programme, i.e. support of the Department/Instructor(s). They agreed that the encouragement (mean = 4.00, S.D. = 0.85) and advice (mean = 3.57, S.D. = 0.99) given by the instructors was beneficial to them. However, students were disappointed with the administrative support from the department (mean = 2.92, S.D. = 0.89).

The fifth dimension received the poorest evaluation from students. It demonstrated that most students were dissatisfied with the support from their sponsor firms. From the students' points of view, no clear instruction from the sponsor firms caused serious communication problems (mean = 2.77, S.D. 1.14). In addition, sponsor firms could not provide sufficient and updated information (mean = 3.00, S.D. 1.13). In the open-ended section, more than half of the students (64%) reported that they found it difficult to finish their projects because of insufficient information or information which was not current. They argued that the sponsors were too busy and unwilling to release the useful information which was essential to the project. In the structured interviews, the majority of the students (71%) shared the same view that the sponsors lacked commitment. They were unwilling to disclose information and the contact person was too busy to meet with them.

The feedback from students on the sixth dimension of workload and difficulty of the 'in-firm' projects is shown in Figure 6. Students generally perceived that the 'in-firm' projects were difficult and the workload was heavy. One possible reason was that it was the first time for most of the students to engage in such a demanding project. They spent on average 6.28 hours per week on this project. In the open-ended section, nearly one-fifth of the

respondents thought that they did not have enough time to do their project. From our observations and informal discussions with students, it was also found that students had difficulty in locating and collecting useful information. It seemed that students lacked such skills as questionnaire design and interviewing business people. However, a large proportion of students (57%) argued that the sponsors were very demanding. Students thought that the requirements of companies were too high for them to complete within such a short period of time.

*Figure 6: Students perceived workload and difficulty of the 'in-firm' projects*

Item	Dimensions	Mean	S.D.
1a	Workload	3.69	0.74
1b	Number of firm visits ( in time )	3.72	2.26
1c	Number of hours spent on the project per week (in hours)	6.28	4.15
2	Difficulty	3.61	0.85

### **Feedback from Sponsor Firms**

Generally speaking, the sponsor firms were satisfied with the performance of students. They said the students were well prepared before every visit to the firms. Students also tried their best to complete the projects. This point was supported by the evaluation of students for themselves. Specifically, sponsor firms thought that the 'in-firm' projects allowed them to fulfil their social obligation and at the same time the programme helped them to carry out some practical projects that were valuable to them. The information gathered by students allowed them to know the China market in depth. One representative from a multi-national cosmetic company replied that the project report provided an informative picture about the consumers in China. The conclusions and recommendation mentioned in the project confirmed their previous findings and planned strategies. Other firms thought the reports were stimulating, since the analysis was conducted from a different perspective.

Some problems were inevitably encountered in the 'in-firm' projects because this was the first time that the majority of participants had engaged in this type of project. Some sponsor firms commented that some students were incompetent and lacked initiative. They also said that most students had very little business sense or market/industry knowledge and seemed to lack practical analytical skills. Some firms thought that the conclusions made by the students were superficial and did not consider constraints and possible scenarios carefully. From the perspective of prospective employers, it is noted that the traditional classroom teaching method is not adequate and the programme of 'in-firm' projects is necessary to fill the gap between classroom theories and practice in business education.

## **Conclusion**

The 'in-firm' projects during the 1997/98 have been completed. The practice has demonstrated that the principle of Action Learning Projects can be applied in problem-based learning when conducting the 'in-firm' projects. The three groups of participants: instructors, students and sponsor firms interacted with each other and gained valuable experience from the 'in-firm' projects.

Students were given the opportunity to acquire practical knowledge and to foster managerial abilities that can hardly be learned from traditional classroom teaching. It was found from the review results that students had deepened their understanding of business practice in the real world. Their experiences of dealing with business people were beneficial. The process of team interaction, enabled the students to develop their interpersonal and communication skills, and their confidence was increased as a result of engaging in the necessary problem-solving activities. The practice of in-firm projects also allowed students to discover their own strengths and weakness when facing challenging problems.

This successful start is very encouraging, and the experience and lessons learned will help the instructors to improve the implementation of the programme in the future. As we discussed earlier, the programme involves three parties who have different objectives. The three parties will therefore have different expectations towards each other as was shown in Figure 3. Consequently, if these expectations are unrealistic, problems will arise that may obstruct the achievement of effective learning results. To solve these problems, the critical action must reduce the difference in objectives of the three parties involved. In addition, effective and timely communication among the three parties is also very important. Specifically, the following measures need to be taken to improve future implementation of the programme of 'in-firm' projects.

Firstly, the commitment of the School of Business is very important, since it will motivate instructors to explore better ways of planning and organising the programme. The commitment at the higher level of administration means that the resources available to the programme in terms of academic and administrative support will be adequate to ensure its smooth implementation. The time needed to conduct the 'in-firm' projects, as well as the workload of the students, will also be coordinated better and in line with the teaching plan of the whole school. The commitment of the school will motivate students involved to work conscientiously, since they will feel that the programme is highly valued by the school.

Secondly, the programme of 'in-firm' projects should be integrated into the curriculum of the whole Business School. It should serve as a final year project to synthesise the knowledge that students have learned from various disciplines in the previous three years, in the real business environment. The programme is also to prepare students for their work following graduation. Therefore, integration of the programme into the entire curriculum of the school will allow a better balance of different academic subjects, enabling the programme to achieve the greatest effects.

Thirdly, the sponsor firms should be carefully selected. They should be of a reasonably large size because small firms tend to have informal management styles that cannot ensure a smooth implementation of the programme of 'in-firm' projects. Conversely large firms, if they commit themselves to the programme, will provide more and constant assistance to the programme as well as adequate information and professional advice. Further, large firms will also be able to provide more choices of appropriate projects for students to undertake. Finally, working in a large firm will allow students to practice what they have learned in classroom about various aspects of business administration.

Finally, effective communication between the three groups of participants, i.e. instructors, students and sponsor firms is vital to ensure the success of the programme since this will reduce the differences in expectations of the three parties towards each other. Students will understand better what they need to do. Instructors will identify the difficulties encountered by students and provide timely solutions to these difficulties. Sponsor firms will be able to understand the objective and working plan of the programme and will not

make unrealistic assumptions about the capabilities of students. They will therefore organise appropriate projects for students to carry out.

## References

- Johnson, C. (1998). The essential principles of action learning. *Journal of Workplace Learning, (10)* 6, 12-23.
- Laughton, D., & Ottewill, R. (1998). Laying foundations for effective learning from commissioned projects in business education. *MCB Education and Training, (40)*, 3, 1-6.
- Nelson, R. (1990). On technological capabilities and their acquisition. In R. Evens & G. Ranis (Eds.), *Science and technology*. Boulder: Westview Press. pp. 71-80.
- Stinson, J., & Milter, R. (1996). Problem-based learning in business education: Curriculum design and implementation issues. *New Direction(?s) in Teaching and Education, 68*, 33-42.
- Weinstein, K. (1995). *Action learning: A journey to discovery and development*. Glasgow: Harper Collins.