

**JUST-IN-TIME TEACHING: BALANCING
THE COMPETING DEMANDS OF
CORPORATE AMERICA AND
ACADEME IN THE DELIVERY
OF MANAGEMENT EDUCATION** _____

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Business schools have come under attack in recent years for the poor job they do of providing relevant training and skills for their students (e.g., Hambrick, 1994; Jorgensen, 1992; Linder & Smith, 1992; Porter & McKibbin, 1988; Spender, 1995). There is growing corporate demand for pedagogical techniques that focus on their immediate problems rather than on lofty theories or even case studies (Raelin, 2000). Business speakers at a recent International Association for Management Education (AACSB) symposium on continuous learning continued to make this plea as they challenged business schools to “be more proactive and partner with business leaders in their communities . . . and to make their curricula more relevant” (AACSB, 1999, p. 12).

The debate about what constitutes a proper business education is one that has plagued business schools as far back as the 1700s (Spender, 1995). It arises because of the ambiguous and conflicted mission business schools

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have always faced due to their reliance on competing sources for legitimacy: academic respectability on one hand and the favorable opinion of corporate leaders on the other (Halpern, 1985; Spender, 1995). In the 1950s, business schools in the United States were criticized for being overly narrow and vocational in their orientation (Gordon & Howell, 1959; Pierson, 1959). To remedy this, they were encouraged to, and did, hire faculty from a variety of academic disciplines relevant to organizations and management so as to enhance their scholarly legitimacy. Now, however, the faculty who were hired to achieve academic respectability for business schools are being criticized by the corporate community for their lack of experience in business firms, for the perceived irrelevance of their research, and for their unwillingness to provide the kinds of training in practical professional skills the corporate world feels it needs (e.g., Behrman & Levin, 1984; Hambrick, 1994; Porter & McKibbin, 1988; Raelin, 2000).

What is needed, we argue, is a way to balance the competing demands for scholarly integrity with those for practical business training in the delivery of management education. In this article, we present an approach that we believe offers such balance. It accomplishes this by combining just-in-time (JIT) rapid delivery techniques with some of the central tenets of action learning. We call our approach "Just-In-Time Teaching," or JIT Teaching for short.

WHAT JIT TEACHING IS

As described here, JIT Teaching is delivered via an elective course built around projects that call for student groups to solve actual business problems (related to the course's content) for real business clients, but with a difference. We realize that many, if not most, business school curricula include project courses. The kind of course we are proposing is not a project course *per se*. Rather, it is a content course that incorporates relevant projects. The projects, immediate problems faced by business clients, play a key role in determining which aspects of relevant course content are taught. The students' needs for training to solve the client's problem also play a key role in determining what content is delivered—and when. Thus, JIT Teaching weaves the needs and preferences of the business community into a professor's decisions about what business theories and tools to teach and when to teach them. It also capitalizes on the philosophy of action learning by empowering students to determine what and how to learn by working in teams on actual work-related problems (Raelin, 2000).

In our model of JIT Teaching, faculty members map out the content they wish to teach and then carefully solicit projects from business clients perti-

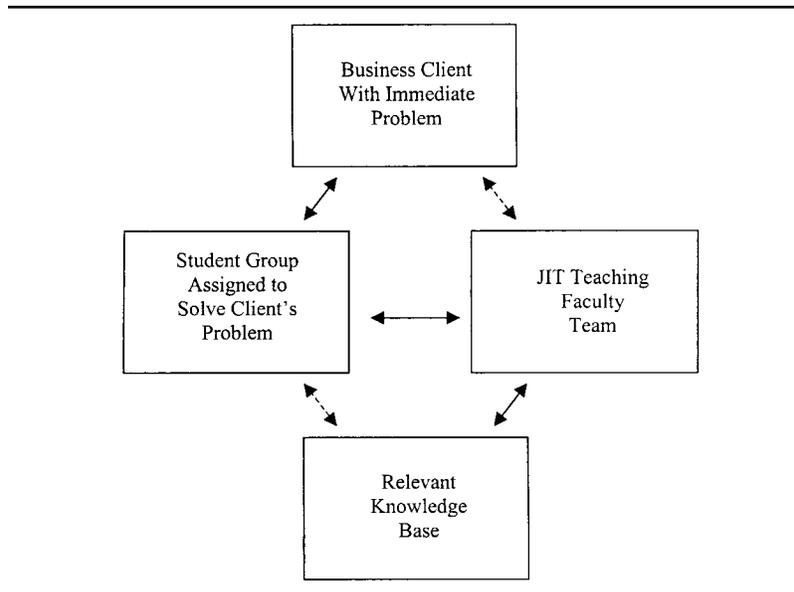


Figure 1: Just-In-Time Teaching Process

ment to that content. It is important that the projects have potential value to the business clients and that each one be sponsored by a particular manager who will serve as the project sponsor. Once the course is under way, the faculty members allow the needs of the business clients to pull them and their students through the learning experience. The professors present students with an overview of material they expect will be relevant, but in-depth treatment of that material is presented only if and when students realize they need it and ask for it. Ideally, should subjects arise that are outside the expertise of the professor teaching the course, another faculty member would be called on to provide the relevant teaching. In the absence of this larger faculty-wide commitment, some teaching opportunities may be lost. When the project is completed, students report their recommendations and solutions back to the project's sponsor in both written and oral form.

Figure 1 may help to show more graphically how JIT Teaching works. In this figure, students are situated between the client/problem and the relevant knowledge/skill base. The professors are on the same level with the students, interacting with them as peers in a joint search for solutions to clients' problems. This reflects the empowerment of students in JIT Teaching, a central component of action learning. However, although the professors interact on a peer level with students in the course, they have selected both the client/prob-

lem and the relevant knowledge/skill base needed to solve the client's problem. The professors' main role in the class is to find appropriate projects, make known to the students the basic content of the knowledge/skill base, and then provide in-depth teaching and training about aspects of that base as they are needed. Of course, professors may also intervene, as necessary, to help students recognize training needs.

THE CONCEPTUAL BASES FOR JIT TEACHING: RAPID DELIVERY TECHNIQUES AND ACTION-LEARNING PRECEPTS

As discussed before, there are two conceptual underpinnings for JIT Teaching: rapid delivery production techniques and action learning. We discuss here how these two philosophies are combined in JIT Teaching.

JIT rapid delivery is typically understood as "getting your materials delivered when you need them" (Goetsch & Davis, 1994). It is described as a "pull" system in that each stage of the production process pulls from the preceding stage just that amount of product needed to satisfy actual customer demand (Evans & Lindsay, 1993; Goetsch & Davis, 1994). Applied to management education, we suggest this means that, in a JIT course, business theories and tools are delivered to students when they need them and not until or unless they need them. Our JIT course content was guided by students' progress toward solving the problems presented by their business clients. It is important, then, that in JIT Teaching the decision about what knowledge students need to receive is based only partly on the professor's a priori professional judgment. It is also based on the needs of business clients who have provided practical business problems for the students to solve and on the students' demand for teaching related to their efforts to solve the client's problems. From a JIT perspective, teaching is pulled by two of a business school's primary customers: the business community and business students. This is in contrast to a traditional class in which teaching is pushed by the professor and administration regardless of whether or not it is perceived as relevant by their key customers.

Turning to action learning, a generally accepted definition is the following: "voluntary learning that is centered around the need to find solutions to real problems" (Spence, 1998, p. 3). Action learning generally consists of having groups of managers tackle a real problem, often, but not necessarily, within their own organizations (Casey & Pearce, 1977). The problem receives sanctioning by a sponsor within the organization and is selected because it has potential value to the organization. Managers are challenged to take action to resolve the problem via a process of questioning, requesting training as the need for it arises, implementing a solution, and reporting their

TABLE 1
Debate About the Sanctity of Fundamental
Tenets of Action Learning^a

<i>Proponents of More Programmed Learning (P)</i>	<i>Proponents of More Spontaneous Questioning (Q)</i>
“Learning from experience can be both useful and dysfunctional. We ^b must ensure that it is useful.”	“Who are we to judge what is useful?”
“To help them ^c learn from their experience more easily and use it, let us give them interpretive tools and skills we know they are going to need.”	“When they discover that they cannot interpret or apply something, they will ask for the tool they need.”
“They don’t know what tools exist or how to ask for them. We must at least show them the toolkit.”	“Man is analytical and creative—need will help them innovate.”
“They have themselves shaped this element of the programme. We know it will not take them to the learning they seek from it. We must intervene.”	“Discovering that their structure and vehicle failed will lead them to other learning.”

- a. Godsall (1977).
- b. The professors/trainers.
- c. The students/trainees.

results to the project’s sponsor (Smith & Peters, 1997). Developed 50 years ago by Reg Revans in Great Britain, action learning is becoming an increasingly popular tool for management training in the United States (e.g., Marquardt, 1999; Parkes, 1998; Raelin, 2000; Spence, 1998; Smith & Peters, 1997). Action learning has been used primarily in organizational settings, but it clearly has potential applications in educational settings (Spence, 1998). We believe JIT Teaching, as described above, is one such application.

An important controversy among proponents of action learning concerns the question of when and how to incorporate theory-based teaching into the learning process. Followers of Revans place great importance on the sanctity of learning from discovery (Godsall, 1977) and fight against including much of what he called “programmed instruction” (designated P). They place more value on “spontaneous questioning” (designated Q) because Revans believed Q was the component that produced most behavioral change and learning (Godsall, 1977; Raelin, 2000). Their views are depicted in column 2 of Table 1. Other practitioners of action learning believe there needs to be much more specific programmed learning (see column 1 in Table 1). For example, Leadership in International Management (LIM) was founded by practitioners of action learning, such as Rimanoczy (1998), who concluded that

learning does not automatically result from action. For the learning to occur, an intermediate step is essential: the awareness of what has happened For awareness to take place, it is necessary to do a pause in the action and introduce a challenging question to promote reflection on what has happened.

This led to the development of Action Reflection Learning, LIM's trademarked version of action learning.

The controversy over when and how much programmed learning to include is relevant to this article. It revolves around the relative importance that is assigned to two types of knowledge: explicit versus tacit (Raelin, 2000). Explicit knowledge is basic theory that is usually transmitted through conventional classroom lecture and discussion. Tacit knowledge is related to skill in doing something and often cannot be put into words. Explicit knowledge might be thought of as "knowing that," tacit knowledge, as "knowing how" (Raelin, 2000). We believe that the dispute between academics and corporate executives over what business schools should teach can be cast as a dispute between whether the transmission of explicit or tacit knowledge is the legitimate goal of a business school. Academicians are generally lined up in favor of knowing that, whereas corporate executives (and business students) favor knowing how. JIT Teaching assumes that both types of learning and knowledge are important for business students and includes both in its pedagogy. Let us describe our course at this point as a way of illustrating more concretely what we mean by JIT teaching.

JIT TEACHING IN PRACTICE

Our ideas about this kind of teaching grew out of our experiences in team-teaching a course we call Quality Through Teamwork. In an effort to help our business undergraduates keep up with the quality-related changes taking place in many American companies, we designed a course that would focus on the concepts and techniques of Total Quality Management (TQM); specifically, we covered quality assurance, business process reengineering, and team management. We obtained actual business problems that called for process reengineering, and our students worked on them as members of project teams. The approach we adopted to teaching the course, largely unwittingly at first, approximated a JIT process in that we found ourselves providing teaching about topics as they became relevant to the particular phases of the projects our students were working on. In some cases, we dropped topics that had been scheduled, went into more depth than anticipated on other topics, or added topics we had not included in our original syllabus at all. Because of this, we found ourselves and our students being pulled through

the course to some extent by customer needs (i.e., the businesses for whom the projects were being completed), as dictated by the individual projects. It was our recognition, approximately two thirds of the way through the semester, that this resembled JIT rapid delivery that provided the impetus for this article.

Quality Through Teamwork was designed to be an interdisciplinary, two-course package that included courses in quality assurance and group dynamics. Students were asked to sign up for both courses and the courses were scheduled in consecutive 90-minute time slots that met twice a week in the same room. (Although there were technically two courses, we came to view it as one course called Quality Through Teamwork and will talk about it in the singular in this article.) It was our plan at the outset to teach students how to reengineer a business process through the vehicle of actual client projects. Students were to do this in teams, and the teams were to provide a context for learning firsthand about group dynamics. The use of teams is one hallmark of TQM efforts in business organizations, so we felt the material covered in the quality assurance and group dynamics courses provided a good fit for the objectives we sought to achieve. By teaching group dynamics via actual reengineering projects, we had, again unwittingly, established a course that follows some of the basic tenets of action learning.

Initially, we assumed that we would cover basically the same material we normally covered in our respective courses on these topics and that the reengineering project would substitute for other assignments we would typically have made. The course was a 6-credit hour course, so these assumptions seemed reasonable. Thus, each of us assigned the same texts we normally use in our courses and developed a combined syllabus that contained the typical reading assignments we would have made had we been teaching our respective courses on our own.

We agreed to integrate the two courses as much as possible, however, despite the fact that there appeared to be little or no overlap in course content. We accomplished the integration by being present in class at all times, by finding ways to participate in each other's sessions, and by dividing class time according to project needs rather than adhering to our assigned class periods. This integration required extensive discussions of what each of us would be teaching, why we felt it was important, and where we felt topics needed to be introduced. Perhaps most important of all, we agreed that the client project would provide a major portion of the grade in both courses. We agreed to grade these projects jointly. Teaching the course in this way provided many opportunities to break through the functional divisions inherent in most business school curricula. This is an important aspect of our JIT teaching approach because the new AACSB accreditation guidelines

(AACSB, 1994/5) call for greater integration of business school courses. Our project course offers one way of achieving real integration.

As the term progressed, the project began to take over and to pull the course. That is, as the students became more involved in learning about the client's "as is" process, studying the needs and perceptions of customers of that process, and trying to develop recommended improvements, we began to re-evaluate what we had expected to teach, and we actually started canceling assignments that seemed irrelevant to the project's demands. As the term went on, there were more and more deletions and a growing awareness that topics other than those we had included in the syllabus needed to be taught instead. It became clear, for instance, that the students needed to be instructed in topics from the field of organizational development. Because they were literally consultants to their clients, they needed to learn how to contract with clients. The professors had recruited clients for the class and had met with them numerous times before the term began, first, to be sure they had needs that could be addressed by our course and second, to be sure they understood what to expect. Yet, once student teams had been formed, it became clear that these teams needed to make formal contact with their clients themselves so as to negotiate the details of how they would get access to information and people, and so on. Later, as our students began trying to assess their clients' processes, it became clear to the students and to us that they needed instruction in how to design questionnaires and then in how to analyze and interpret the results obtained from the questionnaires.

It also became clear as the term went on that some material we had expected would be crucial turned out not to be particularly relevant. For instance, we felt that because this was partly a course in quality assurance, the students must learn about statistical process control charts, and thus we spent several class periods teaching them how to prepare, interpret, and use such charts. However, because the students were dealing with service businesses rather than manufacturing firms, they were unable to adapt what they had learned about control charts to their projects. Although control charts can be adapted to service applications, we had failed to anticipate this need.

This admission represents an important but delicate point. What we felt to be important content for our course, based on the dictates of the traditional curricular design process, did not always turn out to be important. Allowing the project demands to dictate what was important material and what was not led to the development of a challenging and meaningful course that looks different in significant ways from the one we had developed without input from our business or student customers. In particular, this hybrid course does not cover every topic fellow academics might deem appropriate when teaching quality assurance and team management. Some of our colleagues may blanch

at the thought of failing to cover what fellow academicians consider essential content. However, allowing the project (an immediate business problem) and the learners (business students) to define what is essential content is at the heart of both JIT rapid delivery processes and action learning.

STRENGTHS OF JIT TEACHING

We feel there are many strengths associated with this approach to teaching. To begin with, it allows the real needs of business clients to play a part in deciding what students truly need to know and learn. Although this happened inadvertently in our course, we believe this approach to getting the input of businesses into decisions about course content is a highly practical one. The clients never actually spoke to us about what the specific content of the course should be. However, the nature of the problems they wanted to have solved caused us to assess what material the project would require us to teach and then to tailor our teaching so that the students received both the theoretical and applied knowledge needed to complete their projects successfully. Thus, business clients' needs clearly played an important role in determining what content we brought in and when we brought it in. Of course, we had a considerable amount of control over the type of material that would be covered because we selected the type of projects the students would work on (reengineering a business process) and the way in which they would work on them (in five-person teams). Had this been considered an irrelevant topic by the business community, we probably would not have found projects for our students. In this way, the business community provides a check on the relevance of what business professors wish to teach.

We also believe this approach to teaching is pedagogically sound and offers advantages of great importance to business students. Revans, the originator of action learning, believed that knowledge and skill acquired through questioning, investigation, and experimentation produced more behavioral change than that acquired from programmed instruction. The feedback from students and clients who participated in Quality Through Teamwork supports this view. Students reported feeling they had learned more from this course than from any other course they had taken in college. They especially enjoyed doing a lot of thinking on their own and learning how to work in teams on a project with real significance. They also found the different perspectives the two professors brought to class enlivening. Their main complaint was that the course was not long enough to allow them to do the job they would like to have done for their clients. Our clients were all pleased and impressed with what the students were able to accomplish for them, and most of them adopted at least some of the students' recommendations.

There is some empirical evidence to support the efficacy of JIT Teaching, although much more research is needed (Parkes, 1998). Studies have shown, for example, that trainees are more likely to be able to translate management skills into practice when they have worked on real as opposed to simulated problems (Burgoyne & Stuart, 1977) and when they have performed in actual practice situations (Rackham & Morgan, 1977). Possibly the only effort to rigorously evaluate this type of teaching in a university was conducted by Raelin (1997). He found some support for the belief that action learning does promote learning to learn as well as improving interpersonal skills. Particularly relevant to our course, Quality Through Teamwork, a recent study showed that teaching business process reengineering develops the kinds of change-making skills needed by managers (Basadur & Robinson, 1993). At the corporate level, several studies of corporate action-learning programs have shown returns of 5 to 10 times the investment in the programs, or more, in 2 to 3 years (Alder, 1992; Brenneman, Keys, & Fulmer, 1998). Thus, from a JIT perspective, our course offers a way to better meet the needs of business school's corporate customers, and from an action-learning perspective, it offers a way to help students learn how to learn.

A final benefit for us was that team teaching the course with a colleague from a different discipline was an excellent method for providing integrated learning experiences. Both we and our students were greatly enriched by this kind of integration. Being jointly responsible for the course, sharing the classroom, and evaluating the students jointly motivated us to learn about each other's disciplines and to find ways in which our views and material overlapped.

OBSTACLES TO JIT TEACHING

Although there are many benefits to this approach to teaching, there are also some obstacles. One major obstacle was the amount of time the course required of students, faculty, and project clients/sponsors. Students worked on significant problems for their clients/sponsors and had to do much of the work outside of class time. Faculty were in each other's classes throughout the term, spent time learning each other's subject matter and coordinating between class sessions, and invested a considerable amount of time in finding clients with projects that would be both doable and meaningful. Clients were called on to meet with their student project teams at various times during the term, to be available for an oral presentation by the project team at the end of the term, and to evaluate the team's written report.

Rutgers University provides an example of how some aspects of this obstacle can be managed. They have developed a type of JIT Teaching that

they call Citizen and Service Education (CASE). The purpose of CASE courses, like our JIT Teaching course, is to teach about content through work on an actual project. The purpose of CASE goes further, however. It seeks to develop a community service attitude and ethic among undergraduates from all disciplines. Students sign up for a three-credit course and receive an additional credit for the community project. What is relevant to this discussion is the university's level of commitment to the program. It has funded the effort, provided a full-time coordinator who is responsible for finding relevant projects, and worked out a way to provide students with appropriate amounts of time and course credit. The coordinator's staff also provides training for faculty to learn how to teach CASE courses and solicits the participation of students. In this way, many of the time burdens of faculty are relieved. The interested reader can find more information at CASE's Web site (www.csils.rutgers.edu/case/case.html).

Another obstacle was that our undergraduate students did not necessarily know what they needed to learn to complete a project or else thought they knew how to do things they really did not know how to do properly (e.g., survey design and analysis). As a result, they did not always ask us for needed training in a timely fashion or at all. In addition, because of time pressure, students became so focused on finishing the projects that they were not as open to thinking about theory as we would have liked. They felt they did not have the luxury of looking more deeply into why particular tools and techniques work as they do, which disappointed us.

The approach developed by LIM, which they call Action Reflection Learning, offers some lessons in how this obstacle could be overcome (Rimanoczy, 1998). LIM provides pauses for reflection in the learning process. They do this by having Learning Coaches (an interesting way to think about the professor's role in JIT Teaching) who are empowered to stop the action whenever they feel it is necessary. The Learning Coaches ask questions to promote reflection in these pauses. They may also provide what LIM calls JITL (Just-In-Time Learning), which consists of teaching about concepts or tools that they perceive would help participants solve their problem.

Another obstacle was the difficulty associated with finding appropriate projects. We obtained several thoughts on how to deal with this by sending a query to members of the Management Education Division (MED) of the Academy of Management listserve about JIT Teaching. Several reacted that the issue is how to bound the projects (E. Berniker, personal communication, February 4, 2000; J. Warner, personal communication, February 6, 2000). Warner has developed several JIT courses that teach statistics and design of experiments to undergraduate engineering students (e.g., Warner, 1993). His students learn the content by solving real problems for participating business

clients. He points out that a big issue is to state the problem in a frame that permits solution. He argues that undergraduate students generally lack the judgment to do this, so it is important for the professor to work out a problem statement with the industry person.

Berniker takes a different position. He has developed a JIT course in organizational development and sociotechnical systems that teaches students how to apply key tools and design principles by visiting local organizations and trying to solve actual problems they are facing. He prefers to allow the students to bound the problems they encounter for themselves in terms of the tools and techniques they are applying. He believes that tools and techniques inherently bound situations and that it is important for students to address the question of whether those boundaries are valid as they try to solve real problems.

Our version of JIT Teaching seems closer to Warner's approach in that we carefully bounded the projects for our students in advance through discussions with the clients. We see Berniker's approach as an interesting alternate approach to the bounding issue. No matter which approach a professor takes, both provide the vehicle for them to determine course content while simultaneously encouraging students to grapple with the relevant content through application to a real business problem. Berniker's approach provides for specific transmission of more explicit knowledge and so may provide an approach that is more palatable to some of our colleagues.

Another solution to the problem of finding appropriate projects, generated by members of the MED listserv, was to use cases in addition to, and possibly even in lieu of, projects. One participant felt that our description of JIT Teaching sounded like case teaching with "the only difference . . . that the 'case' is the actual problem" (T. Edlund, personal communication, February 1, 2000). Another suggested that case teaching might be preferable because with cases

we teach principles that can be applied to a variety of other situations, but when we do JIT, we may be preparing someone to deal with a particular kind of situation in a narrow domain of application, and given how fast things change today, the value may be short lived (J. Dobbins, personal communication, February 6, 2000).

A similar concern was voiced by one of the reviewers of this article who felt JIT Teaching might be compromised for business schools in isolated locales dominated by one major industry (e.g., Las Vegas). Such schools might end up exposing their students to inappropriately narrow applications. One way around this might be that suggested by Edlund, who recommended

finding a case that is related to the real problem assigned to a student project team and teaching that before students tackle the actual problem. If sufficiently rich cases are used, J. Naman (personal communication, February 3, 2000) argues they would “offer rich contextual information and bring out multiple perspectives.”

Although cases may be an excellent adjunct to the field experience offered by a JIT course, we feel they should not replace work on a real problem. Cases emphasize the application of theory-based knowledge to real situations, but the situations are far removed from the students’ actual experience. It is easy for them to second-guess the managers in the case and to generate simplistic solutions that fail to take into account the conflicting demands of a real situation. Raelin (2000) cites the example of an MBA-trained manager who was shocked to find out in his first job “that a product line divestment decision has less to do with marginal cost analyses than with personal affinity to the line on the part of the CEO who began his career with the brand” (pp. 83-84).

A final obstacle has to do with implementing courses that have the degree of integration we attempted in ours. We believe our course worked well because we were in the classroom together and found ways to participate in each other’s sessions. This approach to team-teaching is one of true integration, not the “turn teaching” that often masquerades as team-teaching. This necessitated compromises in scheduling as well as the development of genuine understanding of and respect for one another’s teaching methods and materials. To overcome the problem of how to be sure each of us received course credit for teaching the course, we offered it as a two-course package and required all students to sign up for both courses. This resulted in lower enrollments because many students could not accommodate the two-course package in their schedules. Being respectful and supportive of one another’s material and methods, which was extremely important for establishing appropriate attitudes in the students’ minds, required a willingness to be open-minded and to learn new perspectives. This is not necessarily easy. The management science member of our team had to overcome deeply embedded negative attitudes about role-playing and team exercises, for instance. The organizational behavior member was surprised to discover how much her quantitative partner knew about human relations!

IMPLICATIONS OF JIT FOR MANAGEMENT EDUCATION

We believe JIT Teaching is a model for how business schools might improve quality by eliminating a particular kind of waste: obsolescent teaching. The curricula at business schools might be thought of as “stored materials” in our JIT analogy. The problem with stored materials is that they can

spoil, become obsolete, or have defects that are not discovered until a product has been produced. To the extent that faculty develop courses without direct knowledge of the problems and needs of the business community, these teaching materials are very likely to suffer from spoilage, obsolescence, or irrelevance (Raelin, 2000). These problems are worsened when faculty develop courses that remain unchanged for a period of years. JIT Teaching increases teaching quality and efficiency by tailoring knowledge and skill training (the materials needed to educate) to the immediate problems facing client businesses. Furthermore, it delivers knowledge and training when students need them to solve actual problems, thereby enhancing the likelihood that there will be a transfer of learning to the work environment by students (Raelin, 2000).

We also believe JIT Teaching offers opportunities for constructive contacts between business schools, the professors who teach in them, and the business community. By providing meaningful assistance to businesses through such student projects, professors have an opportunity to get a first-hand look at the problems businesses are encountering. This kind of contact can help faculty keep both their teaching and their research grounded in reality. It also allows businesses to see that business schools and business professors have useful information that can help them in their day-to-day activities. Such contact provides the promise of building better relations between business schools and the business community. At the moment, there is too great a distance between these two with the result discussed earlier that business schools and the Academy of Management itself are seen as irrelevant by many practicing managers (Hambrick, 1994).

Our sense is that some type of JIT Teaching needs to be considered seriously by American business schools because of the need for balance in the kind of teaching/learning they provide. The learning process has been depicted as a cycle involving four key activities: having a concrete experience, reflecting on what happened, conceptualizing the experience in terms of theory, and experimenting on ways to improve performance in similar future experiences (Kolb, Osland, & Rubin, 1995; Raelin, 2000). Individuals tend to have predispositions toward one type of learning activity (Kolb et al., 1995), so that students generally fail to engage in all four. Because of their own predispositions, faculty too generally fail to include all four in their courses. However, effective learning requires engagement in all four activities (Kolb et al., 1995; Raelin, 2000). JIT Teaching is one way to focus faculty on taking students through all four stages of learning so that they become more adept learners. Hopefully, our discussion will awaken our colleagues of the utility of this approach to developing our students' ability to learn how to learn.

JIT Teaching makes challenging demands of professors. It requires them to be flexible and to keep their knowledge and skills up to date so that they can adapt teaching materials as necessitated by the actual business problems the students are seeking to solve. It asks them to accept that the business community and students are key customers of theirs and, as such, have the right to make demands on what is taught and how it is taught. It also requires that professors accept a central premise of action learning, namely, that experience itself (even when not orchestrated or interpreted by professors!) can be a powerful instrument for developing students (Casey & Pearce, 1977).

Despite the many obstacles and challenges surrounding the implementation of JIT Teaching, courses and programs of this type have been offered in the business world for the past 20 years. As this article makes clear, they are beginning to appear in academic settings as well. The progress in academia, especially at the undergraduate level, is slow, however, and may remain so. Getting business school professors to hear and accept the underlying premises of JIT Teaching may not be easy. Viewing management education from a JIT perspective may make some of our colleagues uncomfortable, as it did one of the reviewers of this article. Giving even some control over course content to business clients may also be hard for some of our colleagues to accept. The belief that students can learn for themselves by working on real problems but with much less programmed instruction from their professors may also be difficult to develop. Getting business schools to commit the needed resources for delivering such courses may be yet another hurdle to their acceptance.

We believe that it is imperative that business schools look seriously at new approaches to the delivery of management education. We hope our article provides a catalyst to debate about the merits of JIT Teaching and an impetus for others to try it and to conduct research on it.

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