Problem-Based Learning, Scaffolding, and Coaching: Improving Student Outcomes through Structured Group Time

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ABSTRACT

Live-client projects are increasingly used in marketing coursework. However, students, instructors, and clients are often disappointed by the results. This paper reports an approach drawn from the problem-based learning, scaffolding, and team formation and coaching literatures that uses favor of a series of workshops designed to guide students in developing marketing plans for their non-profit client. The workshops produced marketing plans that were more actionable than those developed in an experiential learning environment without scaffolding or those completed outside of class. An example of the scaffolding technique is provided.

Experiential learning exercises are becoming increasingly prevalent in colleges of business (Gaidis & Andrews, 1990), particularly the use of team-based live cases – Harvard Business School, the developer of the case study method used by many business professors, recently announced a shift toward live cases in which small teams of students develop a new product or business (Middleton & Light, 2011). Although experiential learning [a process in which learning occurs through experience (Kolb, 1984)] can take many forms in marketing coursework, such as case studies, computer simulations, and projects (Gaidis & Andrews, 1990), a live case team project is particularly well to learning by doing. The use of a live client provides students with the opportunity to integrate and apply the knowledge they acquire – a critical higher-order thinking skill business programs strive to instill in their students. Students also benefit from working with clients who have their own ideas and whose problems have real consequences. At the same time, a course provides students with a sheltered environment in which they are encouraged to experiment and take risks.

In spite of these potential benefits, however, results often disappoint faculty, students, and clients. While there may be many reasons for this disappointment, such as student motivation, project appropriateness, and student ability, much of the issue may rest with how faculty members integrate the project into the course. Certainly, this is the case with the instructor of the course described here. Frustrated by the quality of the projects, the instructor instituted milestones in order both to provide feedback on parts of the written report and to keep teams moving forward and began to devote significant amounts of class time to the project. Despite these remedies, she remained frustrated with how poorly students used the significant amounts of time allotted for the project: projects were still poorly conceived and papers poorly written. She found students often repeated discussions or held extensive off-topic discussions, making little progress with much of the project deliverables being completed at the last minute by only one or two members of the team. She particularly noted the difficulty students had in applying the concepts and theories learned. This report details a method that explicitly develops students' ability to apply concepts and theories in marketing. These skills are developed through a project-based learning method that promotes the integration and application of marketing theory through scaffolding

and coaching. First, a description of the course and previous efforts are discussed.

COURSE DESCRIPTION

Overview

The course described here is the senior-level capstone marketing course at a Midwestern state university enrolling more than 7000 students. Prerequisites include Basic Marketing and Consumer Behavior; while Marketing Research is a co-requisite, it is strongly recommended as a pre-requisite. Typically students will also have completed at least one of two required marketing electives before enrolling in this course. One section of this course is available every semester with a typical enrollment of 20-25 students.

Structure

Because students come to this class with a basic understanding of key marketing concepts, the centerpiece of the course is the preparation and presentation of a marketing plan developed for a live client – typically a local non-profit organization. A significant amount of class time (at least half of class meetings) is allocated to project work. To accommodate this, students take the responsibility for content acquisition outside of class through assigned readings and on-line quizzes. To keep students engaged throughout the semester and to ensure that their individual study parallels the timing of the workshops, due dates for quizzes are scheduled throughout the semester. Certain topics, such as positioning and the product lifecycle, receive additional coverage during class. Other class periods are reserved for discussion of assorted marketing readings and other activities.

Teams of four or five students are formed at the beginning of the project. As much as possible, teams are diversified in terms of experience, gender, race, and country-of-origin (although the university has a significant international student population, domestic non-white students comprise less than 10% of the student population).

Team deliverables are a written marketing plan and a client pitch during which the team presents the plan to a judging group. Students earn a quality grade for the written marketing plan and earn participation points for the pitch. The judging group consists of the client and at least two other experienced professionals; the judges determine which team's pitch best meets both the client needs and the marketing goals. The individuals on the winning team are named on a permanent plaque located outside of departmental offices.

Past Processes and Results

In the past, a student's grade for the project was determined by the quality of the marketing plan, the meeting of various milestones, and team evaluations. The milestones, intended to keep students on track in writing the plan and to allow the instructor to provide feedback as students were developing and writing the plan, included an informal contract regarding team expectations of member; an environmental scanning analysis; an action plan; and a draft of the complete marketing plan. Additionally, the instructor provided feedback and support during class time as students were working on the project, and the instructor met formally with each team at each milestone.

Despite the significant amount of class time devoted to and feedback provided for projects, results disappointed. Papers were poorly written. Students focused on completing the milestones and the final paper by simply following templates from the course textbook. This resulted in teams proposing routine or trivial ideas; in proposing some intriguing ideas that were never fully thought through; or in striving to fit the client's problems into a pre-defined format or framework. Additionally, an inordinate amount of effort was devoted to describing the current situation rather than focusing on what to do in the future. During pitches, good ideas not fully developed were overshadowed by mediocre ideas that were easily communicated.

These poor outcomes could be traced to the teams' poor use of group time. Teams made little progress during the significant amounts of classroom time devoted to working on the project, often making arrangements to meet outside of class. This resulted in students waiting until the last minute to finalize ideas and complete the various milestones.

Teams also kept poor records, spending valuable time in trying to remember what they had accomplished during their last meetings, often repeating activities they had completed in previous sessions. It also discouraged individual member responsibility – actions were agreed upon but never formalized or tracked. This led to students frustrations with free-riders – team members who benefited from the other team members efforts without providing comparable effort to the team (O'Bannon & Pearce, 1999). While some students may have simply coasted on others work, free-riding may have occurred because one or two dominant members of the team made decisions without much input from the rest of the group. The appearance of free-riding may have occurred because of a recency effect, in which earlier work is discounted in favor of the most recent work – solid record-keeping may have prevented to this appearance of free-riding.

Altogether, results fell critically short of expectations, due to the inability of most student teams in structuring how to effectively use their time together. A recent meta-analysis of critical thinking instructional found evidence that explicitly teaching how to critically think in a discipline was more effective than when it is not (Abrami et al., 2008). Thus, a method was needed that would explicitly walk students through the marketing planning process; this method should 1) force teams to think through and discuss each step of the process; 2) focus teams on client activities rather than client situational description; 3) encourage better distribution of and appreciation of work; and 4) keep better and more accessible records. To achieve these goals, a problem-based learning approach was adopted, complete with scaffolding and combined with insight from the coaching literature. The next section discusses the theoretical underpinnings of problem-based learning, scaffolding, and coaching.

PROBLEM-BASED LEARNING

Problem-based learning is an instructional approach designed to improve students' meta-cognition. The premise of problem-based learning is that students, faced with intriguing problems, will be driven by their natural curiosity to tap into cognitive processes – they will access prior knowledge, create a problem space, search for new information, and reconstruct existing and new information to both fit and shape new mental models (Evensen & Hmelo, 2000).

Three key benefits for students arise from a problem-based learning pedagogy. First, students learn the subject matter through increasingly self-directed study, building their knowledge of the subject matter while learning how to refresh existing knowledge and create new knowledge bases – they learn HOW to learn. Second, having applied the knowledge causes that knowledge to become part of long-term memory, not something memorized simply for an exam. Finally, students engaged in problem-based learning exercises become critical thinkers, exploring and discussing alternatives before deciding on the fittest solution to the problem.

Problem-based learning has five pedagogical goals: the development of flexible knowledge; the development of problem-solving skills; the development of self-directed learning (critical in life-long learning); the development of collaboration skills; the enhancement of the internal motivation of students. First, problem-based learning aims to help students develop flexible knowledge that is easily accessed and readily applied across contexts. It involves integrating knowledge from other domains (Hmelo-Silver, 2004).

The second and third goals – the development of problem-solving skills and self-directed, lifelong learning – are related to metacognition. Metacognition, thinking about thinking or knowing about knowing (Metcalfe & Shimamura, 1994), can be defined as the mental models the brain holds of itself (1994). These mental models are adapted through the simultaneous processes of monitoring, the scanning of the environment, and control, acting on the environment (Nelson & Narens, 1994). Problem-solving involves applying appropriate metacognitive and reason strategies (Hmelo-Silver, 2004, p. 240), including understanding one's own knowledge base and the gaps in that base. This metacognitive skill is critical in life-long self-directed learning.

The fourth goal deals with collaboration, the ability to work in and with a team. Good collaboration skills involve establishing common ground, negotiating disagreements, and arriving at agreement on actions and conclusions. These

tasks require that all group members engage in the open exchange of ideas.

Finally, problem-based learning aims to enhance students' intrinsic motivation. This is accomplished by ensuring that the problem is suitably challenging and interesting to students with wide ranging abilities. Intrinsic motivation may also increase due to the sense of control in the outcome and the learning process students may possess.

Problem-based Learning Process

In problem-based learning students encounter ill-defined problems, problems that are complex, fraught with ambiguity, and ideally have multiple solutions (Stepien & Gallagher, 1993). In solving these problems for which students may have little experience, students and faculty have significantly different roles to play than they play in traditional classes.

The Instructor's Role

The role of the instructor in problem-based learning changes from conveying knowledge, typically through lecture, to facilitating students' acquisition of knowledge. This is done primarily through scaffolding and coaching.

Scaffolding is a pedagogical method in which an instructor provides graduated levels of assistance. This allows a novice to solve a problem or complete a task that he/she ordinarily wouldn't able to solve or complete (Puntambekar & Hubscher, 2005). Scaffolding is a dynamic process: the levels of support provided vary as the novice becomes more expert at the task (van Geert & Steenbeek, 2005).

One of the problems often faced in student projects is students moving through a task quickly just to complete the task without an attendant focus on quality (called pencil-whipping by some). With a scaffold, instructors can force students to engage in problem-solving using disciplinary frameworks and strategies. Scaffolding allows the instructor to model processes and behavior; highlight critical features of the task-at-hand; and guide how student think about the process (Puntambekar & Hubscher, 2005). Students then internalize the cognitive processes, a critical step in knowledge and professional development.

The sales management literature can provide insight into how coaching can affect performance. Personal selling is a field fraught with ambiguity and difficulties, and is one in which coaching by a sales manager can effect significant changes in the behavior of new and experienced sales people. By adapting a definition of sales coaching, coaching can be defined as the provision of on-going feedback and encouragement to someone with the goal of improving that person's performance (Rich, 1998). In addition to feedback, Rich (1998) identifies two more dimensions of coaching: role modeling and trust. Each is discussed next.

Feedback, the provision of information about one's behavior or performance, is rooted in operant learning theory, which holds that learning occurs through one's experience with consequences. Feedback has been has been linked to job satisfaction, role clarity, motivation, and job performance (Rich, 1998). Problem-based learning and scaffolding would allow feedback to be provided as ideas and actions are occurring, often taking place in real time.

Role modeling, setting an example through one's own behavior – walking the talk – is an important but often overlooked facet of coaching. As people are aspirational, they learn appropriate behaviors by observing and imitating others in a social context (Bandura, 1986). Eventually, the behaviors become habitual, requiring little thought. Consider an engineer responsible for managing 150 other engineers. Never having trained to become a manager, he observes and mimics the behaviors of those managers he admires; he hopes to internalize the behaviors and attitudes. Employing a problem-based learning approach would allow students to gain a glimpse of how to interact professionally with colleagues and subordinates.

The third dimension of coaching, trust, allows students to learn from the feedback and role modeling provided by the instructor. Trust is the students' evaluation of the instructor's competence and expertise in the subject area, and of the instructor's honesty, reliability, and concern for the student (as evidenced by the instructor's will-

ingness to listen). Without trust, feedback and role-modeling are ineffective (Rich, 1998).

While the sales management and other literatures specifically identify coaching as a one-to-one activity, Hackman and Wageman (2005) propose the concept of team coaching, which they define as "direct interaction with a team intended to help members make coordinated and task-appropriate use of their collective resources in accomplishing the team's work" (p. 269). They identify team coaching strategies that can be effective at different points during the team life cycle. In the beginning of the project, it is critical that the team becomes a team – that members get to know each other and that they define and redefine the task. This includes setting boundaries, developing identification with the group, formulating norms and determining group processes. At the midpoint of a project, when groups are anxious about what they have yet to accomplish and are therefore ready for a coaching intervention, the focus shifts to work strategies, ways of carrying out a task. Coaching is also effective at the end of the task or project when performance is still fresh and salient, and members are ready to capture and internalize the lessons learned. Without coaching, this reflective learning is unlikely to occur (Hackman & Wageman, 2005).

Student Role

In problem-based learning, the control of the learning process shifts to students. Solving these problems requires that students take more responsibility for building their own knowledge bases. They learn how to apply that knowledge, and, in the process, learn how to learn. This is driven by a small group structure. One of the benefits of the small group is that it can counteract the natural inclination of novices toward reductivism (the tendency to reduce complex problems to simplistic tasks) when faced with a complex, ambiguous problem (Kelson & Distlehorst, 2000). A group of individuals, bringing various talents and knowledge to the group, can "collectively enlighten each other regarding multiple perspectives, complex affordances, and reasonable versus reckless uncertainty" (Kelson & Distlehorst, 2000, p. 176).

Another benefit of the small group is that students are more willing to participate than they might in a larger group (Exley & Dennick, 2004). The small group allows for the development of both content and process skills (Exley & Dennick, 2004). For example, content is developed and refined as students activate and elaborate upon prior knowledge, which aids in the development of self-directed learning (Schmidt & Moust, 2000). Additionally, students develop interpersonal skills such as collaboration, negotiating, and interpersonal communication.

Despite these benefits of small group work and in spite of the prevalence of their use in marketing classes, students and faculty are often frustrated with the process of working in groups and with the outcomes of the group work. In the next section, an intervention designed to capitalize on the power of groups, improving the experiences of faculty, students, and clients by using problem-based learning, scaffolding and coaching is discussed.

INTERVENTION

Building on the problem-based learning, scaffolding, and coaching literatures, a series of directed workshops was developed. For many of the workshops students were required to complete pre-workshop exercises. For each workshop, a series of questions and tasks were listed on large tabloid sized paper. Student teams discussed the questions and completed the tasks, focusing on gathering and processing the information and ideas they would later need for the formal written report and presentation. When students became stuck on a question or task, the instructor provided guidance and feedback to help the team work through a bottleneck. At certain key points during the workshops, the instructor would gather the team together and provide mini-lectures about critical elements of the plan (positioning, for example).

Each team kept its worksheets and other materials in binders held by the instructor, ensuring that students always had access to previous work. Milestones changed from the submission of applicable portions of the writing plans to completion of the workshops and directed questioning. This process was intended to shift the focus away

from the completion of the communication of the plan and toward the creation of the marketing plan. With the exception of the teaming workshop, the questions and tasks for each workshop roughly corresponded to the various portions of a marketing plan. A summary of the workshops and the scaffolding techniques used may be found in Table 1; two critical workshops that can be used in many different contexts are discussed more fully.

Teaming

One of the critical elements of the project is the team aspect. Much has been made of developing leadership in business schools, yet little attention has been paid to developing collaborative skills. However, collaboration is increasingly important in the business world. For example, collaboration between competitors is on the rise (Gnyawali, He, & Madhavan, 2006), as is open-sourcing in product development (Hauser, Tellis, & Griffin, 2006). Additionally, the use of self-managed teams is increasing (de Jong, de Ruyter, & Wetzels, 2006), as is the use of sales teams with key accounts (Moon & Gupta, 1997). Building on work team theory and coaching, this workshop is designed to help students quickly develop strong functional teams.

Work Teams

Teaming has been extensively studied in business and non-business contexts. The focus here is on the research conducted in the field of management. Hackman and Wageman (2005) delineate work teams from other types of groups, such as therapy or social groups, through three distinctions. First, work teams are intact social systems, meaning that members are dependent upon one another; that members develop specialized roles over time; and that team members can easily be distinguished from non-members. Second, work teams have tasks to perform for which the team has collective responsibility (and often collective rewards). Finally, work teams operate within a larger social system, just as a college football team operates within a school, a conference, and so on.

Table 1
Workshops and the Scaffold Technique Used

Workshop Topic	Scaffold Technique(s)	Scaffold Topics
Teaming	Pre-Workshop Questionnaire	Individual priorities & schedules
		Teaming expectations
	Group Worksheets & Contract	Compilation of individual questionnaires
		Team name, mission, & standards
Positioning	Group Worksheets	Client's mission, vision & goals
		Project goals
		Client's target market(s), competitors, & partners
		Positioning statement for client
Environmental Analysis	Questionnaire	Client operations: customers, competitors, resources, marketing efforts
	Group Worksheets	Internal & external factors affecting organization
		Possible market segments
		Competitors & possible channel partners
Goals, Strategies & Tactics	Group Worksheets	Detailed description of target market
		Goals, strategies, and tactics
		Tactical plans
Storyboarding	Questionnaire	Tying it all together: a structured questionnaire summarizing pertinent elements of the plan
	Group Worksheets	Storyboard of 9 slides

The work team social system can be internal, such as the parent division or organization, or it can be external system comprised of competitors, customers, or other stakeholders.

The challenge in this course and in work settings is to aid in the development of effective work teams. Effective work teams are those in which: the output of the team meets or exceeds the expectations of the customer (or whoever consumes the work of the team); the team's capabilities improve as the work is completed (the team is better at the end than at the beginning); and individual team members gain skills and/or knowledge, and are improved from working with the team (Hackman & Wageman, 2005). While the importance of each of these three elements may vary in importance, an effective team balances them over time, never fully neglecting any of the dimensions. Effectiveness is driven by the level of effort the team puts forth in completing the task; the appropriateness of the strategy the group uses in completing its task; and the level of knowledge and skills members exert on the task (Hackman & Wageman, 2005). Coaching interventions can aid in improving team effectiveness at various points during the life of the team (see Table 2); at the inception of the team, coaching can improve the effort put forth by the team by facilitating team formation (Hackman & Wageman, 2005).

Teaming workshop

Before this workshop students completed a questionnaire regarding their individual semester priorities and schedules, their expectations regarding how the team will work together; the possible benefits of working with the team and on the project; their thoughts about the mission of the team; and possible solutions to challenges the team might encounter (Leuser, 1992).

The workshop began with an ice-breaking exercise. Then, using the individual questionnaires students completed, each team completed worksheets that summarized the priorities and schedules of each member. Teams also developed team expectations, concerns and ways to address the concerns, team processes and roles. They identified personal benefits of working on the project and of working with the particular team. Finally, they determined their team name and mission statement. Their deliverable to the instructor was a one-page "contract" identifying team name, team mission, and team standards signed by each team member. The purpose of this contract was two-fold. First, the individuals in the team began to identify with the team through the discussion and the choice of team name. Second, the team began to achieve cohesiveness as each member agreed to performance standards and the team goal.

Storyboarding the presentation and writing the plan

The purpose of the storyboarding workshop is to demystify the writing process. It is easy for students to get lost in gathering data and background information and in the process of writing the report. In this workshop, teams completed

Table 2
Workshops and Coaching at Various Stages in the Team Lifecycle

Team Lifecycle Stage	Workshop	Coaching Focus
Beginning	Teaming	Team building Group identity Team cohesion
Middle	Foundation Environmental Analysis Goals, Strategies and Tactics	Links between theory and practice Brainstorming Work strategies
End	Storyboarding	Writing and presenting process Reflection on lessons learned

questionnaires on their own time that allowed them to distill their earlier work. The completed questionnaire acted as a repository for the information necessary for writing the formal report and preparing the client pitch.

In class, students focused on creating a visual outline of the marketing plan that would frame the written plan and the presentation. They received a worksheet with nine "slides", and were to develop only headlines and brief content descriptions. Once they had completed this outline as a team, they began to write the formal marketing plan. They submitted a draft of the plan and received feedback.

RESULTS

The scaffold technique described here consists of a series of workshops in which student teams addressed guided questions printed on tabloid-sized paper. The technique changed process and outcomes for both the instructor and the students.

Instructor Results

The workshop style called for a shift toward a coaching teaching style. Rather than lecture, the workshop format allowed the instructor to wander around, providing immediate support and feedback to teams as they were working. This allowed the instructor to take advantage of teaching moments, pointing out linkages between theory and practice as students were making those linkages. The instructor could also immediately address issues and concerns about the project as they arose. For example, with on project, some teams experienced difficulties when communicating with the client (a common occurrence in the workplace), and discussions occurred regarding how students might handle this situation now and in the future.

For the instructor, the class became much more satisfying. Students were engaged in the project much more deeply, listened more to team coaching than to lectures, asked questions that reflected deeper learning, and internalized the language and processes of marketing more thoroughly. During the few lectures delivered during the semester, students were more engaged, looking for ways for the information to inform their projects.

Student Results

Student behaviors also changed. The workshops sparked discussion, debate, and brainstorming among students. The use of tabloid paper encouraged more participation as the larger paper rests in front of the entire group, unlike letter-sized paper which rests before only one student and is therefore "owned" by that student. The project was therefore more of a team project, rather than one in which one or two students carried the brunt of the workload.

Students engaged in more contact with the client. The client visited at the midpoint of the project, brainstorming with teams and providing feedback. Students were more knowledgeable about the client's operation and asked more pointed and pertinent questions than they had in the past. The format also encouraged some teams to work with the client outside of class.

Students explicitly integrated learning from other class – for example, one team used a member's experience in a digital media marketing course to develop two public service announcements that the client used in radio and TV spots. Another team, working closely with the client, developed, administered, and evaluated marketing research regarding what type of benefits and incentives the target market was interested in.

Students believed and invested in their ideas. One team provided professional samples of their recommendations – plaques and buttons to be used as donor incentives and large mock-ups of the promotional activities using the theater marquee and poster areas. Another team, suggesting the sale of a pictorial history of the theater, wrote, printed and bound a sample history after sourcing old photographs of the theater from the University's archives. Another team immediately began generating publicity for the client (and the university), bringing a photographer and a reporter for the local newspaper to class during a workshop with the client.

Students became less tolerant of free-loading. Team member evaluations, plagued in the past a reluctance to embarrass a colleague, became more

pointed as students became more invested in the project, providing better feedback to students. Work was also distributed more evenly, and earlier work was valued as much as later work.

Plans improved. They were tighter, focused on client actions rather than environmental analysis. They were more organized and better written than previous semesters. The client repeatedly indicated her intention to implement many of the recommendations and programs developed by the students. Additionally, a number of non- and for-profit community organizations have enquired about participating in future semesters.

DISCUSSION

Live cases provide a rare opportunity for students to gain valuable experience in creating and implementing marketing plans. The intervention described here required dramatic changes for both instructor and students.

The instructional shift in moving from a traditional lecture-based pedagogy with right answers to one which stresses hypotheses generation, prediction, data collection, and analysis is a difficult transition to make as instructors give up significant control over classroom activities and outcomes. Although the benefits as described here are many, the transition can make an instructor uncomfortable on multiple levels. First, as complex learning activities are associated with lower completion and higher error rates and as program, college, and university assessment has focused on the acquisition of content knowledge, shifting to a less-controllable pedagogy may carry significant risk. Second, the ambiguity inherent for students is also present for faculty; neither the instructor nor the students can predict the specific outcomes. Third, working with a live client places the instructor's ability in public view, as the client will judge the instructor's ability by the output of the class.

While the primary goal of the method implemented here was to improve students' ability to apply marketing concepts and theories, a key component of critical thinking and meta-cognition, the process also aided student in transitioning from student to professional. In addition to facilitating the internalization of the language of marketing and marketing planning, this involved providing students with a glimpse into a workplace significantly different from the academic milieu in which they lived for at least 14 years (K-12, plus college). The academic world is one in which students are always novices and one in which their work has little effect on anything other than their grades. Transitioning to a role in which their efforts have real consequences not only to themselves but to their companies, their co-workers, and their customers can be disconcerting. The workshops provided the instructor with an opportunity to work with students as their future employers might – helping them through rough patches, brainstorming ideas, playing devil's advocate.

The workshop approach to a problem-based learning project described here provided students with more than content knowledge. Students learned the process of developing a marketing plan and they learned techniques for working with a team. Additionally, as students transition from their college lives to their work lives, they will likely be in a supervisory position at some point, responsible for coaching employees to meet performance targets. Providing effective examples of coaching can help them make the transition from novice to expert-coach more effectively.

CONCLUSION

Students in problem-based curricula have an advantage over students who experience more traditional instructional approaches – particularly when it comes to applying knowledge (Hmelo-Silver, Duncan, & Chinn, 2007). Additionally, students in problem-based learning curricula experience improved metacognition – reasoning, problem-solving, and self-learning (Hmelo-Silver, et al., 2007). However, using client-based projects in marketing courses without providing guidance and structure, as is typical when these projects are used as outside assignments to supplement course lectures, can lead to results that fall short of expectations. Critical to the effective implementation of a problem-based learning strategy is a structured environment "that affords choice, hands-on and minds-on experiences, and rich student collaborations" (Hmelo-Silver, et al., 2007, p. 104). The workshop format described in this report uses scaffolding and coaching to provide the necessary guidance as students begin to

apply knowledge toward solving the problems of a live client. As a result, students learn marketing theory while gaining skills in applying that marketing theory.

REFERENCES

Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., & Zhang, D. (2008). Instructional Interventions Affecting Critical Thinking Skills and Dispositions: A Stage 1 Meta-Analysis. *Review of Educational Research, 78*(4), 1102-1134.

Bandura, A. (1986). *Social Foundations of Thought and Action*. Englewood Cliffs, NJ: Prentice Hall.

de Jong, A., de Ruyter, K., & Wetzels, M. (2006). Linking Employee Confidence to Performance: A Study of Self-Managing Service Teams. *Journal of the Academy of Marketing Science, 34*(4), 576-587.

Evensen, D. H., & Hmelo, C. E. (2000). Problem-based learning: Gaiing insights on learning interactions through multiple methods of inquiry. In D. H. Evensen & C. E. Hmelo (Eds.), Problem-based learning: a research perspective on learning interactions (pp. 1-16). Mahwah, NJ: Lawrence Erlbaum Associates.

Exley, K., & Dennick, R. (2004). Small Group Teaching : Tutorials, Seminars and Beyond

Gaidis, W. C., & Andrews, J. C. (1990). Management of Experiential Learning Projects in Marketing Coursework. *Journal of Marketing Education, 12*(2), 49-60.

Gnyawali, D. R., He, J., & Madhavan, R. (2006). Impact of Co-Opetition on Firm Competitive Behavior: An Empirical Examination. *Journal of Management, 32*(4), 507-530.

Hackman, J. R., & Wageman, R. (2005). A Theory on Team Coaching. *Academy of Management. The Academy of Management Review, 30*(2), 269-287.

Hauser, J., Tellis, G. J., & Griffin, A. (2006). Research on Innovation: A Review and Agenda for Marketing Science. *Marketing Science, 25*(6), 687-717.

Hmelo-Silver, C. E. (2004). Problem-Based Learning: What and How Do Students Learn? *Educational Psychology Review, 16*(3), 235-266.

Hmelo-Silver, C. E., Duncan, R. G., & Chinn, C. A. (2007). Scaffolding and Achievement in Problem-Based and Inquiry Learning: A Response to Kirschner, Sweller, and Clark (2006). *Educational Psychologist, 42*(2), 99-107.

Kelson, A. C. M., & Distlehorst, L. H. (2000). Groups in problem-based learning (PBL): Essential elements in theory and practice. In D. H. Evensen & C. E. Hmelo (Eds.), Problem-based learning: A research perspective on learning interactions (pp. 167-184). Mahwah, NJ: Lawrence Erlbaum Associates.

Kolb, D. A. (1984). *Experiential learning: experience as the source of learning and development*. Prentice Hall: Upper Saddle River, NJ.

Leuser, D. M. (1992). Team Formation Exercise.

Metcalfe, J., & Shimamura, A. P. (Eds.). (1994). *Metacognition: Knowing about Knowing*. Cambridge, Mass: MIT Press.

Middleton, D., & Light, J. (Eds.). (2011). *Harvard Changes Course: School's curriculum part of a push to alter elite B-School Culture*. New York.

Moon, M. A., & Gupta, S. F. (1997). Examining the Formation of Selling Centers: A Conceptual Framework. *Journal of Personal Selling and Sales Management*, 31-42.

Nelson, T. O., & Narens, L. (1994). Why investigate metacognition? In J. Metcalfe & A. P. Shimamura (Eds.), Metacognition: Knowing about Knowing (pp. 1-26). Cambridge, MA: MIT Press.

O'Bannon, D. P., & Pearce, C. L. (1999). An exploratory examination of gainsharing in service organizations: Implications for organizational citizenship behavior and pay satisfaction. *Journal of Managerial Issues, 11*(3), 363.

Puntambekar, S., & Hubscher, R. (2005). Tools for Scaffolding Students in a Complex Learn-

ing Environment: What Have We Gained and What Have We Missed? *Educational Psychologist, 40*(1-12), 1.

Rich, G. A. (1998). The constructs of sales coaching: Supervisory feedback, role modeling and trust. *The Journal of Personal Selling & Sales Management, 18*(1), 53-63.

Schmidt, H. G., & Moust, J. H. C. (2000). Factors affecting small group tutorial learning: A review of research. In D. H. Evensen & C. E. Hmelo (Eds.), *Problem-based learning: A research perspective on learning interactions* (pp. 19-52). Mahwah, NJ: Lawrence Erlbaum Associates.

Stepien, W., & Gallagher, S. (1993). Problem-based learning: As authentic as it gets. *Educational Leadership, 50*(7), 25-29.

van Geert, P., & Steenbeek, H. (2005). The dynamics of scaffolding. *New Ideas in Psychology, 23*, 115-128.