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**Collateral Learning through Service-Learning:
An Approach to Developing Competent Business Professionals**

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Abstract

Stakeholders of business schools expect graduates to have certain collateral skills in addition to the specific skills required by the discipline. These skills have been identified as quantitative analysis, information technology, diversity, teamwork and interpersonal, critical and analytical thinking, verbal and written communication, and ethical. This literature review suggests that service-learning should be an excellent way to help students develop collateral as well as discipline-specific skills. This may be due to the high motivation to learn that students gain from working in the real world with individuals whose lives are impacted by the quality of service provided by the students.

Collateral Learning through Service-Learning: An Approach to Developing Competent Business Professionals

Real-life experience, or experiential learning, is important to most college and university students, and it is especially critical to students in professional schools. Student nurses practice in hospitals; student teachers practice in schools; and accounting students practice as interns in accounting firms. In a school of business many varieties of experiential learning are available. Professors use case studies, simulations, current-event discussions, and internships among other techniques. Some of these are closer to real life than others. The main purpose of these activities is to teach students discipline-specific skills, and firms hiring business graduates assume that they have mastered these skills.

Business schools are finding that their stakeholders are seeking more than just discipline-specific skills. John Dewey (1938) described competencies beyond the basic content of the course as collateral skills. Firms want employees with the collateral skills that a well-educated graduate in any discipline should have mastered. Legislators and accrediting bodies are requiring that business schools identify and assess these student outcomes. An article in *The Wall Street Journal* (Alsop, 2004), examining top business schools, ranked student and institution attributes that recruiters reported they sought most often. Seven of the top ten attributes were specific to students. Along with the percentage of recruiters seeking them, they were: communication and interpersonal skills (89%); ability to work well within a team (87%); personal ethics and integrity (85%); analytical and problem-solving skills (84%); leadership potential (73%); strategic thinking (68%); and [being] well rounded (54%) (p. R8).

Most business schools have identified the collateral skills that they want their graduates to possess. Such lists are often available on the web pages of individual departments or of business schools. The department chairs of the School of Business at Utah Valley State College worked with the faculty to select nine skills that they felt were critical for their students to master. In the Department of Business Management every professor was personally interviewed to determine his or her perception of the most important outcomes while other departments discussed the skills at faculty meetings. The chairs then created a matrix of competencies across departments and combined them into nine outcomes that would be expected for each student in the School of Business. While different departments identified some skills by different names, such as problem solving instead of critical thinking, the chairs felt that the following nine competencies were representative of the group as a whole: quantitative analysis; adaptability and lifelong learning; information technology; diversity; teamwork and interpersonal skills; critical and analytical thinking; verbal and written communication; ethical; and discipline-specific skills. Leadership skills were included in teamwork and interpersonal skills. Both firms and educators assume that graduates have the discipline-specific skills, so the other eight skills will be the focus of this paper. These outcomes are similar to those expected by most firms, legislators, and business schools.

Some of these skills, such as quantitative analysis, can be taught in the classroom, but students may not understand their real value until they have an opportunity to use them in the real world. Others, such as teamwork or ethical skills, are best taught through experience. A professor can explain the issues of ethics, but until the students see how ethical behaviors affect real people in real situations, they may not internalize the values that have been discussed.

Service-Learning

Many business professors work with their classes to complete projects for firms in the community, and the students involved learn important skills, including collateral skills and discipline-specific skills. Service-learning takes these experiences one step further. Instead of working with a profit-making firm, the students involved in service-learning work with not-for-profit organizations. Rehling (2000) explained service-learning as “. . .an integration of community service with subject matter learning by informed application of classroom principles within organizations that serve their communities” (p. 77). While many of the collateral learning competencies can be taught through any type of experiential learning, service-learning seems well suited to teaching the entire set of competencies and is particularly suited to some of the competencies that are difficult to learn through other methods, such as appreciation of diversity and ethical values.

In order to gain maximum benefits and teach a number of the collateral skills, a professor must supervise the student experiences carefully. As with any pedagogical method, feedback is critical to the success of the students. This requires time and sensitivity on the part of the professor. Perhaps the most important technique in service-learning is reflection. Students are required to write about their experiences and/or discuss them in a group, with the team, or with the class as a whole, reflecting on what they have learned. As Munter (2002) stated, “One cannot overstate the importance of the reflective component in ensuring that service-learning become truly meaningful and empowering for the participants” (p. 160). Rama, Ravenscroft, Walcott, and Zlotkowski (2000) described reflection activities:

A variety of activities can be used to facilitate student reflection, such as keeping journals/logs, organizing presentations to community leaders, preparing reports to demonstrate the effects of S-L, and discussing experiences in class. (p. 665)

All of these activities require supervision and feedback on the part of the professor.

Considerable research describes the particular collateral skills that are acquired through service-learning. Table 1 gives examples of the service-learning research that discusses each of the collateral skills, and Figure 1 presents a model that shows the impact of service-learning on these skills. Each skill will be discussed below, with particular emphasis on those that seem to be best taught through service-learning.

[Insert Table 1 about here]

[Insert Figure 1 about here]

Quantitative Analysis

While not all projects will require quantitative analysis, service-learning can provide the applications that help students understand the importance of mathematics. Thomas and Landau (2000) reported that, “The project provided significant opportunities for all members of the team to learn and practice many specific skills not required in a traditional classroom setting.” Among those listed was “analyzing, interpreting, and summarizing quantitative and qualitative data” (p. 94).

Quantitative skills may best be learned through service-learning projects in classes such as accounting, statistics, or operations management. One particularly interesting result was noted by Root and Thorne (2001) who stated, “There are some compelling reasons to adopt service-learning in teaching mathematical sciences, and particularly in service courses in statistics” (p. 327). An especially interesting conclusion had to do with mathematics skills for women.

In the authors' experience, the students most interested in community service are disproportionately women. A service-learning project offers to these women a compelling reason to master a subject that many find intimidating, and that many do not envision as having a valuable place in their future. (p. 327)

McGoldrick (1998) discussed the value of service-learning in economics, another quantitative discipline, particularly for minority students.

[European American female, Hispanic, and African-American students] might be targeted by a method that is participatory and inclusive. Service-learning is a participatory, active learning technique that allows for contextual presentation and subsequent learning of economic theory through concrete experiences and provides a forum for the integration of diversity (such as race and gender issues). It has the potential of moving the economics discipline out of the margins to the center, a balanced curriculum in methodology, context, and pedagogy. (p. 368)

Students often complain that they do not see a need to learn mathematics, and statistics seems to be particularly difficult for many of them. Being able to see the value of these skills within a project that actually helps other people may provide the motivation to master skills that many students find difficult, frustrating, and even useless.

Adaptability and Lifelong Learning

Educators are particularly concerned with teaching students to apply their learning and to be able to continue to learn throughout their lives as they meet new situations and challenges. Service-learning has been shown to provide students with the adaptability to find solutions to problems that they have not previously encountered. Konwerski and Nashman (2002) interviewed teachers to determine what they saw as benefits of service-learning. One professor reported,

Certain community settings are difficult to work in because the setting may not share the same philosophical or educational values as the student. However, the student learns to adapt and become flexible in order to be effective and to make a realistic difference within the environment . . . (p. 179)

Gujarathi and McQuade (2002) observed, "Service learning assignments that connect real-life problems and academic concepts contribute to a more meaningful and longer-lasting learning" (p. 146). Carver (2001) examined the outcomes of a service-learning project and reported that some key outcomes were "greater flexibility in the application of skills and knowledge" and "creative solutions to everyday problems" (p. 146). It should be noted that the eight collateral skills are interrelated. For example, lifelong learning is heavily related to critical-thinking and problem-solving skills. Perhaps the key to lifelong learning is to develop a motivation within students to learn how to solve problems as they are met. An involved professor could guide students to sources for problems that arise, whether they be books, experts, or even common sense.

Information Technology

Students in a management information systems program can often provide sophisticated services for clients, including data management and web page design. Most of the research on computer skills reports on information technology classes, which means that the skills acquired are discipline specific. However, the collateral skills in information technology relate to the everyday use of computers that is required of all employees in a firm. Many opportunities exist

for computer use in service-learning. Students could use a spreadsheet program to track information and calculate relevant statistics. A word processing program would be necessary for reports to the class, the professor, and the client. A professor could require reports in a format that would encourage students to learn some of the more advanced features of such a program. Presentation software would enhance reports to clients. Certainly, students should be encouraged to use the internet to access information that will help them to serve their clients better. Interested students may develop more sophisticated computer skills even in classes that are not computer related.

Diversity

College populations are often not as diverse as the firms where graduates will eventually be working. Learning to work with colleagues who are different from the students in one way or another may be vital to success in the workplace. This is one of the collateral outcomes where service-learning is particularly valuable. Reading about diverse populations is not as helpful as actually working with such groups. Tucker, McCarthy, Hoxmeier, and Lenk (1998) discussed service-learning and diversity.

Communicating with diverse populations occurs when students work with constituencies outside of the university who may be younger, older, or not from the same background.

This interaction provides students with the opportunity to put theories of intercultural communication into practice. (p. 97)

Gujarathi and McQuade (2002) noted that, “For students, service-learning . . . encourages understanding of . . . diversity in the workplace” (p. 146). Rama et. al. (2000) also recognized the value of service-learning in appreciating diversity.

During S-L experiences students may encounter people from diverse backgrounds who hold different points of view. Interfacing with such people can challenge students to reconsider or reaffirm their own perspectives, increase their understanding of other viewpoints, and contemplate a wider range of possibilities. (p.660)

Tucker and McCarthy (2001) note that service-learning can help students become more comfortable with individuals who are different than they.

Since service-learning requires students to present to outside audiences, it has the potential to increase confidence levels by providing an experience in which students present to diverse groups in terms of age, experience, and knowledge. (p. 227)

Zlotkowski (1996) discussed the lack of diversity in business schools and how service-learning can help to broaden the experience of business students.

But how can learning to function effectively within a diverse workforce become for business students a formative part of their education unless they themselves have personally experienced a culture in which such diversity prevails? Surely the predominantly white, middle class, male-oriented culture of most business schools cannot provide a wealth of opportunities for such an experience – even if those institutions themselves are making a sincere effort to open their doors to a more diverse faculty and student population. However, in the culture of many community-based organizations, cultural diversity is the norm, rather than the exception. Here, traditional students will have no difficulty finding black, Latino, and female authority figures with whom they must work and from whom they can learn. For many traditional students, the opportunity to work in a truly diverse environment, to risk stepping outside their psychological

comfort zones, may represent the single best chance they have to learn to appreciate – and value – cultural differences. (p. 9)

It should be noted that some environments will provide more diversity for students than others. Working with charitable institutions outside the academic community would seem to have more potential than providing service to other departments within the school. Professors cannot expect students to practice all collateral skills at each service-learning setting. However, if understanding diversity is one of the goals of the experience, the professor will need to select the activities carefully and will need to ensure that the topic of diversity is included in the reflection part of the experience. If the setting is carefully selected, service-learning can provide a diversity experience that is not available to students using other pedagogies.

Teamwork and Interpersonal Skills

Because much of service-learning is done in teams, students learn to work well with each other. In addition, they team with the clients and must use skills that will help make the project go smoothly. Students also come to realize the importance of networking with various community members. Tucker et al. (1998) discussed the importance of teamwork and networking:

Building team cohesion is an increasingly important skill needed in business that is simulated many times in the classroom. The added benefit of community service learning is that it brings students into the workplace where they must team with professionals from different organizations and backgrounds to achieve a goal. . . Increasing networking skills has long been touted as an important, yet subtle, skill that is difficult to teach. Students learn the importance of networking by dealing with team and community members. Further, they begin to build their own networks with contacts they make through these projects. (p. 98)

Lamb, Swinth, Vinton, and Lee (1998) suggested how a class might be structured to encourage the acquisition of team skills.

Students develop a sense of team and efficacy by working together to assist someone else or to support a particular cause. They must resolve conflicts within their teams and engage in the basics of productive team building to complete the assignment. The activity is structured in such a way that it provides students with sufficient supporting resources (i.e., discussions take place in class so that instructors can facilitate any disagreements if needed) so teams can focus on their service experience. (p. 640)

Thomas and Landau (2002) reported on the impressions of a student member of a team in a service-learning project. An important point is that the student recognized the value of other team members and what they had to contribute.

Working with classmates as a team forced us to focus on our own team skills, including conflict resolution, communication, role clarification, goal setting, and project management. Although no one on the team was more of an expert on OD [organization development] issues than anyone else, everyone had different strengths and everyone had something to contribute. It quickly became clear that no one of us could have done as good a job as the four of us working together. (p. 95)

Tucker and McCarthy (2001) noted the value of using other team members as models in working on a project.

Modeling occurred in three ways. First, by watching a JA training video, students observed other volunteers working successfully in the classroom. Second, by completing

the project in teams, students watched similar others perform the same tasks for social comparison. . . . Third, in-class sharing of how teams were handling specific events (i.e., strange questions or lesson plan deviations) assisted students in modeling. (p. 231)

Working in teams and with diverse community members helps students to improve their interpersonal skills. Several authors, who noted that interpersonal skills were strengthened in service-learning situations, are listed in Table 1. Careful supervision by the professor can help students to understand how their interactions with others affect their business success.

Critical and Analytical Thinking

In a regular classroom situation, students are often presented with a problem and asked to determine a solution. Textbook exercises seldom require problem identification. In the real world, employees are faced with symptoms but usually must determine the actual problem. Then employees must use critical thinking to determine an effective solution to the problem. In the classroom, if the solution is incorrect, the student may receive a lower grade, but few if any results impact the real world.

Service-learning has the potential to help students identify problems and to give them the critical thinking skills that will allow appropriate solutions. Student mistakes may actually affect the clients for whom they work, and students can see the results of errors of judgments.

Godfrey (1999) discussed the importance of service-learning in teaching students how to identify and solve problems.

The ability to recognize, structure, and understand complex, deep-seated social phenomena is a critical management skill. When our students leave the business school, most move on to help firms uncover and solve their own complex, deep-seated business problems. Service-learning projects provide students with exposure to these types of problems. (p. 372)

Because critical thinking is a high-level skill, professors must combine the theories from the classroom with the activities that are occurring in the service-learning situation. Papamarcos (2002) discussed the complexity of teaching critical thinking and the value of experiential learning.

Effective business education requires more than the memorization of facts. Indeed, it requires more than the organization of memorized facts into generic frameworks for understanding. For learning to be effective, students must be able to bring novel structure to unstructured situations, and to solve problems. . . . However, all of this is of marginal utility, and effective learning has not occurred, unless these same students can select the appropriate model from those available, and modify it to fit actual situations. Only then can they competently investigate possible strategic factors, identify meaningful patterns in their findings, and integrate those results into a series of practical recommendations. Experiential education provides students with just such a personal learning environment. (p. 31)

Combining real world experience with classroom theory is not easy and may not be readily accepted by students. Bush-Bacelis (1998) reported,

The best advantage for students is that, in spite of initial resistance, they are able to connect the readings, class discussions, and other assignments with the real world, full of real people, with real problems that students try to help solve. (p. 26)

It appears clear that the results of such combinations are very valuable.

When faced with a business problem, students who recognize greater complexity are more likely to identify a range of strengths and weaknesses in current practices and to identify numerous opportunities to change, as well as threats to the status quo. Thus, S-L has the potential to improve students' decision-modeling abilities. (Rama et al., 2000, p. 659)

Kahne and Westheimer (1996) also stressed the importance of combining critical thinking with real world experience.

To tap into the full power of service activities . . . these practitioners would want to combine critical inquiry with action. This process can transform students' understandings of both disciplinary knowledge and the particular social issues with which they are engaged. (p. 594)

They further indicated that the use of reflection is very important to learning critical thinking.

To be critical thinkers, students must be able to consider arguments that justify conclusions that conflict with their own predispositions and self-interest. Structured, informed, and systematic analysis of service experiences from a variety of ideological positions will not ensure critical thinking in the strong sense, but such reflection should make that outcome more common. (p. 598)

Learning to solve problems in the real world, gives students certain advantages that are difficult to replicate in the classroom. According to Rama et al. (2000),

First, students can be motivated to work harder when they address "real" problems that they perceive as more important and personally relevant. . . . Second, service experiences can give students a context within which to place course content, which increases the quantity and depth of their understanding. In particular, the complexity of real-world projects can help students become more open to uncertainty, recognize greater complexity in the problems they analyze, think strategically, and use learned material in new ways. Third, during S-L experiences students may encounter people from diverse backgrounds who hold different points of view. Interfacing with such people can challenge students to reconsider or reaffirm their own perspectives, increase their understanding of other viewpoints, and contemplate a wider range of possibilities. (p. 660).

Zlotkowski (1996) stressed the value of the experiences that are only available in a real-world situation.

Thus experience is called upon to play a primary role throughout the learning process and at all levels of expertise. For a student effectively to master "problem identification" as well as "problem solving," the "messiness" of experience should be part of his/her education from the very start. (p. 8)

Bush-Bacelis (1998), reporting on the experiences of a business communication class, discussed some of the reasons why the students learn problem-solving skills.

The non-profit organization becomes the context in which students apply business communication principles. Their thinking goes beyond the textbook and classroom as soon as they become involved with the organization. They think more globally and they apply principles. When challenges arise, they seek a variety of resources for solutions including each other, the rest of the class, the organization, the business communication professor, and even other faculty. They stretch their thinking and perspectives. (p. 25)

Many kinds of experiential learning can help students to identify and solve problems. The advantage of service-learning over other kinds of experiential learning would appear to be the

motivation that is inherent in working with groups who supply services to those who are in need. Profits are not the major goal of solving problems. Students can see that their decisions may well affect the lifestyles of the clients with whom they are working.

Verbal and Written Communication

Good communication skills, including listening, discussing, writing, and presenting, can all be practiced in a well-planned service-learning project. Virtually every list of desired collateral skills includes communication skills. Dallimore and Souza (2002) stated the importance of good communication skills in the business world.

First, communication is the medium through which information about organizational processes and skills are delivered. Consultants in all fields need effective communication skills. Communication, interpersonal, and analytical skills are some of the very skills upon which business communication focuses its scholarly and pedagogical attention. Second, all organizations continually need improvement in communication. Consultants need to be prepared to diagnose communication problems and design, implement, and evaluate organizational interventions (e.g., trainings, process facilitations, and conflict management) in response to identified communication problems. (pp. 87-88)

Dallimore and Souza (2002) further stated the value of service-learning in the development of critical communication skills.

Students are expected to demonstrate their proficiency in key communication-based skills, such as listening, oral-presentations, and conflict management, and to help clients develop these skills in order to assist them in addressing their organizational challenges and facilitating organization change. (p. 95)

While such in-class projects as case studies allow students to identify what they see as the particular problem, service-learning allows the give and take with the client that helps students understand problems and solutions in depth. Thomas and Landau (2002) reported on the variety of communication skills that students in their project were able to develop.

The project provided significant opportunities for all members of the team to learn and practice many specific skills not required in a traditional classroom setting, such as working with the Client to establish mutually acceptable terms of the consulting contract; communicating and explaining OD values and ethics to the Client; reviewing and interpreting organizational archival data and documents; drafting survey and interview questions; collecting survey data; conducting interviews; analyzing, interpreting, and summarizing quantitative and qualitative data; devising an action plan and an evaluation plan which the Client could practically and enthusiastically implement; preparing written reports and a final large audience presentation; fielding challenging questions from the Client; and managing the entire project in light of the end of semester time constraint. (p. 94)

Tucker et al. (1998) wrote that “. . . there is extremely high demand for skilled and experienced computer systems analysts and database developers who have good written and oral communication skills” (p. 94). Managers in computer information technology would appear to require these skills, as would other business managers. Skills developed through their service-learning project included: “listening carefully to client needs; negotiating with classmates; developing documentation and training materials; and presenting a technical solution in a language that the non-technical clients could understand” (p. 95). They also included: “building team cohesion; developing interview and meeting management skills; writing a technical report;

and presenting findings of research” (p. 97). These important skills are not easily taught in the classroom. A good service-learning situation allows for such skill development.

Development of communication skills was reported in many articles about service-learning projects. These articles are listed in Table 1. All basic communication skills can be practiced and improved in any service-learning project.

Ethics

Business schools are particularly concerned about ethics. The study of ethics is included in most business courses, but the approach is to discuss issues, and students can learn to evaluate hypothetical problems and philosophical solutions. Instilling a desire to be ethical may be considerably more difficult. Service-learning appears to supply motivation to the students to act in an ethical manner. Students learn to see the need for ethical behavior and to understand the ramifications of unethical behavior. Many articles discuss the important role that service-learning plays in teaching good citizenship skills and moral values that are important elements of ethics (see Table 1). In fact, a good program on ethics should include the idea of being involved in community building as well as avoiding doing harm (Koliba, 1999).

All AACSB schools care very much about helping students to realize the ethical responsibilities of today’s business organizations. AS-L projects have served to help them realize in day-to-day terms how important it is to be a strong corporate and community citizen. Companies not only receive excellent publicity about it; real human beings benefit in tangible and important ways. (Bush-Bacelis, 1998, p. 31)

Because ethical behavior requires both understanding and behavior, class discussion of moral dilemmas is critical to successful development skills in this arena. Clark, Croddy, Hayes, and Philips (1997) stated,

We . . . have come to believe that service linked to classroom learning can effectively teach citizenship. Over the years our programs have changed from volunteer service to “civic participation” programs that integrate service with strategies to develop the knowledge, attitudes, and skills necessary for active citizen participation. (p. 164)

It would appear that service-learning is particularly valuable for teaching ethical behavior. Fleckenstein (1997) wrote,

I suggest that a service-learning pedagogy would be one way to educate the business student in ethics. An integrated service project stressing rights and responsibilities could create a feeling of what it means to be a member of a community and would emphasize the importance of social involvement. (p. 137)

Kohls (1996) discussed the value of service-learning in teaching a course in business ethics.

There are many arguments for including a service component in the Business Ethics course. . . The first is that service has a strong affective impact on students, and with regard to business ethics issues increases their curiosity, prompts rethinking of value priorities, and fosters commitment to espoused principles. Second . . . it connects real-life problems and academic concepts, and contributes to lasting learning. Third, it helps to overcome the narrow experience and oversimplified approach to ethics frequently observed among students who enter business ethics classes. (p. 46)

Zlotkowski (1996) discussed the way that work in a service context along with reflection in the classroom can provide powerful experiences for students.

One of the main reasons service-learning can exercise such wide appeal is that the two educational variables it brings together are as non-dogmatic as they are powerful. Neither activities that alleviate a social need or contribute to the common good nor reflection focused on the dimensions and implications of one's community involvement presupposes a specific ideological content. Nor is a specific content needed to turn that combination of action and reflection into a multi-dimensional learning experience. In this way, service-learning programs have the potential for contributing profoundly to the development of an ethical awareness. (p. 10)

Reaching an understanding of the value of ethical behavior may be one of the most important contributions that service-learning can make to a business curriculum. Many of the articles reviewed for this paper discussed the important contribution service-learning can make to building business ethics (see articles listed in Table 1). A realization of the impact that specific behavior can have on the lives of the clients can be created through real life experience combined with thoughtful reflection and discussion in the classroom.

Conclusion

Considerable overlap can be found among the collateral skills. For example, information technology skills are used for quantitative analysis and written communication. In addition, presentation software can be valuable to supplement oral communication, and internet skills are useful for critical thinking. Leadership skills were mentioned often in the literature, and these were included in this paper under teamwork and interpersonal skills. The use of service-learning can help develop many valuable skills.

One of the reasons that students do well at developing both discipline-specific and collateral skills may be the motivation that is intrinsic in helping others and working in real-life situations (Godfrey, 1999; Konwerski & Nashman, 2002; McGoldrick, Battle, & Gallagher 2000; Morton & Troppe, 1996; Rama, et. al., 2000; and Raman & Pashupati, 2002). Acquisition of all of the skills may well be enhanced by the opportunity to see how these skills are used in the real world. Figure 1 is a graphic portrayal of the collateral skills that are involved in service-learning.

The positive results of service-learning do not just happen. Oversight by the professor is critical to make the experience work. According to Rama, et. al. (2000), "Educators need to clarify their desired educational outcomes for S-L activities" (p. 679). If students do not know what they are expected to learn, they may miss some of the value of the experience. In addition, reflection is a critical element for students to benefit from service-learning. Providing feedback on written and oral reflection is important in helping students to develop the desired skills. Such oversight of service-learning requires considerable work on the part of the professor.

It is important that the service-learning be relevant to the course content and that the professor plan specifically for the students to gain the necessary skills.

Of course, for a service opportunity to be a valid, credit-earning learning experience, the work that students do must be relevant to their coursework and challenge them to intelligently apply the principles, methods, and skills that they have learned in academic settings. (Rehling, 2000, p. 79)

When service-learning is well planned and executed, students can learn the necessary discipline-specific skills required for the course. They can also learn collateral skills that will allow them to become successful in the business world. While it might be possible in some circumstances to include all eight skills, a careful selection of the most relevant skills might be

more effective. Most projects require some critical thinking, some communication, and some ethical considerations. Information technology should also be included at some level for all projects. For other skills, such as quantitative analysis and diversity, the professor must carefully plan to ensure that the project provides the necessary experiences.

A professor with the enthusiasm to develop a quality service-learning project can provide the students with an experience that covers many of the key skills a business-school graduate would be expected to possess. The motivation intrinsic in this type of learning should help all students to continue learning throughout their lives. It should also help them to become ethical citizens of the business world.

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Table 1. Service-Learning and General Core Competencies for Business Students

Core Competencies	Service-Learning Support
Quantitative analysis	McGoldrick (1998); McGoldrick, Battle, and Gallagher (2000); Root and Thorne (2001); Thomas and Landau (2002)
Adaptability and lifelong learning	Carver (2001); Clark (2000); Gujarathi and McQuade (2002); Konwerski and Nashman (2002); Lamb, Swinth, Vinton, and Lee (1998); Munter (2002); Raman and Pashupati (2002); Thomas and Landau (2002); Zlotkowski (1996)
Information technology	Tucker, McCarthy, Hoxmeier, and Lenk (1998)
Diversity	Gujarathi and McQuade (2002); Kohls (1996); Lamb, Swinth, Vinton, and Lee (1998); McGoldrick (1998); Rama, Ravenscroft, Wolcott, and Zlotkowski (2000); Stevens (2001); Tucker and McCarthy (2001); Tucker, McCarthy, Hoxmeier, and Lenk (1998); Zlotkowski (1996)
Teamwork and interpersonal	Brown (2000); Bush-Bacelis (1998); Carver (2001); Gujarathi and McQuade (2002); Lamb, Swinth, Vinton, and Lee (1998); Rama, Ravenscroft, Wolcott, and Zlotkowski (2000); Thomas and Landau (2002); Tucker and McCarthy (2001); Tucker, McCarthy, Hoxmeier, and Lenk (1998); Zlotkowski (1996)
Critical and analytical thinking	Brown (2000); Bush-Bacelis (1998); Carver (2001); Dallimore and Souza (2002); Godfrey (1999); Kahne and Westheimer (1996); Kohls (1996); Lamb, Swinth, Vinton, and Lee (1998); McGoldrick (1998); McGoldrick Battle, and Gallagher (2000); Morton and Troppe (1996); Papamarcos (2002); Rama, Ravenscroft, Wolcott, and Zlotkowski (2000); Thomas and Landau (2002); Tucker, McCarthy, Hoxmeier, and Lenk (1998); Zlotkowski (1996)
Verbal and written communication	Bush-Bacelis (1998); Carver (2001); Dallimore and Souza (2002); Godfrey (1999); Kahne and Westheimer (1996); Rama, Ravenscroft, Wolcott, and Zlotkowski (2000); Rehling (2000); Stevens (2001); Thomas and Landau (2002); Tucker and McCarthy (2001); Tucker, McCarty, Hoxmeier, and Lenk (1998); Zlotkowski (1996)
Ethical	Bush-Bacelis (1998); Clark, Croddy, Hayes, and Philips (1997); Dallimore and Souza (2002); Godfrey (1999); Fleckenstein (1997); Gujarathi and McQuade (2002); Kahne and Westheimer (1996); Kohlenko, Porter, Wheatley and Colby (1996); Kohls (1996); Koliba (2000); Konwerski and Nashman (2002); Lamb, Swinth, Vinton, and Lee (1998); McCarthy and Tucker (1999); McCarthy and Tucker (2002); Raman and Pashupati (2002); Morton and Troppe (1996); Munter (2002); Papamarcos (2002); Roschelle, Turpin, and Elias (2000); Stevens (2001); Zlotkowski (1996)

Figure 1. The potential collateral learning through the use of well-designed service-learning projects.

