INTRODUCTION

Twenty-first century skill development has been at the forefront of today’s educational debates (Silva, 2009). In contrast to the 20th century, the 21st century requires a new set of work, citizenship, and self-actualization skills in order to succeed (Dede, 2010). For this reason educators must find new and innovative ways to develop skills within their students. We assert that service-learning, defined as “a form of experiential learning that combines academic coursework with voluntary service in the community” (Deeley, 2010, p. 2), is an ideal way to target these newly relevant skills. The primary purpose of this paper is to share information and instruction materials on how to integrate a service-learning project into an undergraduate course curriculum to develop 21st century skills. The secondary purpose is to provide evidence of students’ learning related to core content knowledge. Our goal is not only to increase educators’ awareness of the importance of developing students’ 21st century skills, but also to provide a clear means – a service-learning project – to achieve this outcome.

Overview of Service-Learning

Service-learning is a method of instruction that combines an educational community service project with traditional means of teaching (Furco, 1996). The service-based project is not merely an added, unrelated component to the course, but rather the means by which students learn important class-relevant concepts in a highly impactful way.
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The ability to successfully apply knowledge to the formulation of ideas or solutions is a critical 21st-century skill (International Society for Technology in Education, 2007). Employees must now be able to solve new, abstract problems that have no pre-determined solution. As these problems are often far removed from their application to knowledge. For this reason, instructors must remember to use student projects to solve these real-world problems, as these problems are often removed from their application to knowledge.

The ability to work well with others on a team is considered an increasingly important 21st-century skill for two reasons. First, companies are increasingly relying on groups, teams, and multi-task systems in order to accomplish the more complex tasks faced by the modern workplace (Snow, Miles, and Coleman, 1992). Indeed, it is becoming less common for individuals in today’s businesses to work in isolation from one another (Karlovy and Panis, 2004). Second, recent technological advancements have changed the nature and frequency of collaborations. Workers in the past primarily interacted face-to-face; today’s employees work together via cell phones, email, and webcams. These technological advancements have also increased the amount of collaborations that occur with people from different backgrounds across cities and countries. Because technology has facilitated the opportunity to collaborate across long distances, and because the nature of work now requires teams of people with complementary expertise engaged in higher-level thinking, working with diverse others has become an essential 21st-century skill.
the project below, we highlight the opportunities for 21st century skill building that we, as instructors, emphasized.

**Owner Interview and Survey**

Phase I required student groups to gather both qualitative (i.e., interview) and quantitative (i.e., survey) data. Students then were required to gather information to complete a situation analysis. Students also gathered information on the owner’s leadership style (i.e., transactional or transformational) to make comparisons with how employees perceived the owner’s style. Prior to contacting the owners, instructors discussed the importance of professional communication (i.e., written and oral). The instructors reviewed templates for professional business communications as well as discussed the importance of framing of requests for sensitive information like salary. In addition, instructors addressed the importance of customer service when interfacing with a client. Students learned about balancing academic deadlines with the constraints of the client’s (i.e., owner) schedule. This phase was also designed so that students had an immediate connection and interaction with a person in the local business community to increase their awareness of civic engagement. The opportunity to have a conversation with an organizational leader encouraged students to take the project seriously, as they recognized that it had the potential to positively affect real people in a real organization. Thus, this first phase was designed to pique their interest in civic engagement.

**Employee Survey and Data Entry**

Phase II required a minimum of five employees per organization to complete the employee survey which took approximately 20 minutes to complete. Measures on the employee survey included the job characteristics inventory, work-family conflict, stress, engagement, trust in management, pay satisfaction, and intentions to quit. All constructs measured were taught in the course so the students could work in their groups to critically analyze, and ultimately draw the appropriate conclusions to present in their technical report. This phase of the project was designed so that students had opportunity to enhance their applied knowledge. Students were required to think deeply about the course concepts and apply the information to solve problems that arise in the workplace. For example, what kind of information would work if we were to interfere with family is high? What are the implications for employee satisfaction and morale? Could high work-interference with family conflicts move the behavior of high means on intention to quit? Students were challenged to study results and ask themselves questions like the above to develop an appropriate “picture” of the business. This was designed to require constant and critical thinking because the students need to ask critical questions of each other and come to consensus on the appropriate conclusions.

**Technical Report**

The final phase of the student-led consulting project was the technical report. Students were required to write a report structured around the four core management functions (see Appendix 2). Professional, business-oriented writing is critical to success in today's world. Students were challenged to produce high-quality products that were worthy of submitting to the business owner for review. This was not unlike other course projects. However, unique to this project was that students also needed to be prepared to defend their conclusions and recommendations in the report to the business owner. This phase of the project enhanced students’ 21st century skills by further heightening their sense of civic engagement. Students were acutely aware of how their work and recommendations affect real people and businesses in the community.

Given students had the opportunity to interact closely with business owners and employees, this phase also enhanced their sense of responsibility to produce a work product that would improve the working environment for the employees.

**EVIDENCE OF EFFECTIVENESS**

A test of the four core management functions as well as a survey of self-reported learning of relevant skills were used to evaluate the effectiveness of the proposed service-learning project.

**Participants**

Participants consisted of 232 college of business students enrolled in six sections of a core course: Principles of Management. Approximately 53% (N = 122) of the participants were female and 45% (N = 104) male. Students (N = 6) of participants did not indicate their gender. Participants had a mean age of 27.0 years with ages ranging from 19 to 52 years of age. They represented the following racial/ethnic groups: 19% (N = 43) Caucasian, 28% (N = 60) Hispanic, 19% (N = 44) African-American, 22% (N = 50) Asian-American, 9% (N = 20) Mixed or Other, and 4% (N = 10) of participants did not indicate their ethnicity. Participants represented the following majors: 36% (N = 83) Accounting, 16% (N = 37) Finance, 6% (N = 13) Computer Information Systems, 13% (N = 30) General Business, 6% (N = 14) Supply Chain Management, and 5% (N = 1) of participants did not indicate their major (see Table 1 for information on participant demographics by condition).

**Procedures**

Students enrolled in one of three sections of the Principals of Management course were assigned to the service-learning project manipulation whereas students enrolled in one of three other sections of this course were assigned to the control project condition. Each of three instructors taught one section that implemented the service-learning project and another section that implemented the control project. Thus, these sections were identical in content and instructor except for the differences in the projects that were conducted.

For the project that was designed to serve as the control, students were required to work independently to assess an organization that was of interest to them. They utilized online resources and the course textbook to evaluate the strengths and weaknesses of that organization, and they wrote a four-page paper regarding their overall assessments related to the four core management functions: planning, organizing, leading, and controlling (Daft and Maricic, 2013). The control project, however, was not a service-learning project in that students never contacted, worked with, or gave their recommendations to the actual organizations. Thus, the control project should not have any impact on the 21st century outcomes of practiced and applied knowledge, teamwork, or civic engagement. The control project, however, may have had an impact on the student’s core management knowledge.

After completing either the service-learning or the control project, students completed a test of the four core management functions: planning, organizing, leading, and controlling. Both groups also completed measures assessing 21st century skill development, including practiced and applied knowledge, teamwork, and civic engagement.

**Measures**

Core Management Knowledge

Nine multiple-choice items were used to evaluate knowledge of the four core management functions. Items were taken from the course’s textbook (Robbins, DeCenzo, and Coulter, 2011). One item required students to exercise one of four skills (i.e., comprehension, application, synthesis, evaluation). The other eight items tested knowledge related to planning (e.g., SWOT analysis), organizing (e.g., organizational chart), leading (e.g., transformational leadership), and controlling (e.g., corrective action).

**Practiced and Applied Knowledge**

Participants provided their perceptions of practiced and applied knowledge gained from the project they completed. The measure consisted of four items adapted from two related scales (Fairfield, 2008). Participants responded on a seven-point Likert-type scale ranging from (1) very strongly disagree to (7) very strongly agree. Items were preceded by the stem “I...” and prepared to defend the following: “applied information learned in class,” “improved my skills by completing this project,” “refined my knowledge of management concepts through this project,” and “will be more confident in my future work because I completed this project” (α = .81).
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From Flannery and Pragram (2010) and supplemented by project improved their ability to help their local communities, participants who completed the control project (M = 5.64, SD = .91), as demonstrated by an independent samples t-test, t(177) = -1.72, p < .10. Thus, Hypothesis 1 was partially supported.

**Teamwork**

Participants indicated an increased understanding of how to work with others on a team through the completion of the service-learning project. Participants who completed the service-learning project indicated higher levels of acquired teamwork skills (M = 6.80, SD = .92) compared to those who completed the control project (M = 5.31, SD = .95) as demonstrated by an independent samples t-test, t(177) = 2.86, p < .05. Thus, Hypothesis 2 was supported.

**Civic Engagement**

Finally, participants indicated that the service-learning project increased their civic engagement and desire to be a part of, and contribute to, the community. Participants who took part in the service-learning project indicated higher levels of civic engagement (M = 5.26, SD = 1.15) compared to those who completed the control project (M = 4.82, SD = 1.87) as determined by an independent samples t-test, t(177) = 2.63, p < .05. Thus, Hypothesis 3 was supported.

**Discussion of Project Effectiveness**

Findings suggest that the proposed service-learning project effectively improved students’ 21st century skills. Overall, students who completed the service-learning project reported higher levels of practiced and applied knowledge, teamwork skills, and civic engagement skills compared to those who did not. These three skill-sets have been shown to be vitally important for the 21st century workforce (Dede, 2010).

Additionally, this service-learning project was shown to be effective in improving students’ knowledge of core management concepts. Students who completed this project scored significantly higher on the core management knowledge test compared to those who completed the control condition. Thus, this project effectively improved core-content knowledge while also developing the skills that are essential to the contemporary workforce.

**LIMITATIONS**

Despite the success of this project, there are some limitations to consider. First, the results demonstrate non-significant differences between the manipulation and control conditions in terms of practiced and applied knowledge. There are many potential reasons for these non-significant findings. One possibility is that the proposed service-learning project did not adequately address this facet of 21st century skills, and future researchers may want to spend more time re-designing this project to more precisely target this area. It may also be the case, however, that the study suffered from a lack of power in that there weren’t enough participants with fully completed surveys to capture the effects in question. Indeed, the marginal levels of significance indicate partial support for the effectiveness of this service-learning project in increasing practiced and applied knowledge. Thus, future researchers may benefit from utilizing larger sample sizes to test the effectiveness of these and other service-learning projects. Second, given the specific subject matter in question, researchers must consider the generalizability of the findings. The current service-learning project was geared towards students taking a management course, and the ‘service’ involved providing consultation advice for small, local businesses. Thus, the project was closely tied to the content matter involved. This project may not improve content knowledge in other domains, however, and must be tailored to fit the specific needs of the course. Third, and finally, this study used single-source methodology and should utilize other sources of data to test student attainment of 21st century skills, such as instructor observation or peer evaluations of team members.

**IMPLICATIONS FOR CLASSROOM INTEGRATION**

Educational researchers have continued to call upon researchers and practitioners to focus on the development of 21st century skills in addition to core curriculum knowledge (Silva, 2009). These skills, which include practiced and applied knowledge, teamwork skills, and civic engagement, are all becoming increasingly important to the success of employees in 21st century organizations. Thus, educational researchers and practitioners must develop new and innovative ways of addressing the gap between what is currently being taught and what needs to be taught in 21st century classrooms. The current study proposes and finds support for the use of service-learning projects to uniquely address each of these facets of 21st century skill development. Thus, we encourage the integration of similar projects into pedagogical practice in order to more effectively develop the necessary skills in the classroom.
future generation of workers. Service-learning activities such as the one outlined in this paper provide meaningful, applicable experiences that help students beyond simple memorization of facts and theories. Thus, this project could clearly fit into the curriculum of educators seeking to emphasize 21st century skill development in their courses. The nature of the course should be considered in adapting the project to suit the classes’ particular core knowledge needs, but the results of the study demonstrate promising outcomes of utilizing these activities.

REFERENCES


APPENDIX 1

INVITATION LETTER

Dear Family Business Owner,

We, three faculty members in the XXXX, request your help with a project when we discuss businesses in our courses at XXX we typically talk about large companies and fail to emphasize the significance of family-owned business. In fact, family-owned businesses comprise 50% of the United States’ gross domestic product. We have created a student-led project to explore family-owned businesses and we hope you will consider participating in our students’ project this semester.

If you are willing to help students complete their project on a local family-owned business you would be agreeing to the following:

1. One-hour (maximum) in person meeting with one or two students and the CEO/President/Founder of your company. You will also be asked to complete a short (less than 10-minutes) survey:
   - Students will travel to your place of business for the meeting.
   - We will provide the paper surveys and students will drop-off and pick-up the surveys from your place of business.
   - We will not ask for your employees’ names when completing the survey and all information will be kept confidential.

2. Encourage your employees (as many as possible) to complete a 30-minute paper survey.
   - We will encourage employees to participate in 30-minute follow-up interview with students to gather more in-depth responses after analyzing the survey responses.

In return for your help the students will provide you a report that highlights the following:

1. Strengths and weaknesses of current business practices.
2. Opportunities for continued growth and improvement.
3. Summary data of employee satisfaction, leadership styles (e.g. work-family), and other attitudes towards their work environment, including pay and promotion opportunities.
4. Creative solutions to make the business successful in the face of ever-present change (e.g., light rail extension, economic uncertainty, etc.).

You will be provided with a copy of the final technical report in return for your efforts.

We thank you in advance for your consideration.

APPENDIX 2

TECHNICAL REPORT TEMPLATE

I. Organizational Background

Provide overview of the organization. It is your task to appropriately summarize these findings in two paragraphs that include your numerical findings. You should learn everything you can prior to the interview so you appear prepared and knowledgeable when interacting with the CEO/Founder. This is also required so you can have a more meaningful conversation with the CEO/Founder about things that are not easily available through internet research.

II. SWOT Analysis (Planning)

Identify strengths, weaknesses, opportunities, and threats by conducting your own research, interviewing the business owner, analyzing survey data, and conducting follow-up interviews with employees.

<table>
<thead>
<tr>
<th>Strengths (Internal)</th>
<th>Weaknesses (Internal)</th>
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<tr>
<td>Opportunities (External)</td>
<td>Threats (External)</td>
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<tr>
<td>III. Organizational Structure (Organizing)</td>
<td>How would you classify the organizational structure of the business? Use the interview and survey data to determine the organizational structure of the business. Is there consensus among employees? What are examples that lead</td>
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you to believe this is the appropriate organizational structure? Is there consensus among employees? If no, why do you believe there are differences?

IV. Leadership Style (Leading)

How does the Owner classify his/her leadership style? How do the employees classify the Owner’s leadership style? Do these views align? If yes, what is the benefit of alignment? If no, what are the consequences of misalignment?

V. Feedback and Continuous Improvement (Controlling)

Based upon your interview(s) and survey data what are your recommendations for change? What are your proposed creative solutions to make this business competitive and successful in the face of ever-present change (e.g., light rail extension)?