

Service-Learning as Creative Productivity

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Abstract

Service-learning is similar to one of the leading theories of learning in gifted education – creative productivity. Both processes provide in-depth investigative research experiences which culminate in the development of creative products and services. The purpose of this study was to determine the effect of a curriculum unit designed for gifted students on the quality and completion of service-learning projects for gifted and non-gifted students. The study showed that the utilization of the curriculum resulted in high quality service-learning projects for both groups of students. This suggests that practitioners of service-learning and gifted education have much that they can learn from each other.

Introduction

Service-learning (S-L) is a method of teaching and learning which offers a unique opportunity for young people to use the experience of community service projects to enhance classroom learning, to use what they learn in the classroom to solve real-life community problems, and to develop real-world services which benefit mankind. Well-designed and well-implemented, service-learning experiences can result in students' learning to become producers of knowledge and services, not just consumers of information (good test takers). This method of instruction is not new. Most educators agree that service-learning evolved from the experiential writings of John Dewey (1916), who stressed that the individual's active, purposeful, direct interaction with the environment results in the best kinds of learning. Dewey also believed that reflection is a critical element in learning because it enables students to see the interconnection between what they do and the resulting impact.

Service-learning is similar to a theory of learning originally associated with gifted behavior. The history of humankind's cultural development is often explained through the creative contributions of the world's most talented and creative people. The creative productivity approach to learning describes aspects of human activity and involvement that also result in development of original products or services purposefully designed to solve real-world problems (Renzulli, 1986).

Since the launching of Sputnik in 1957, U.S. educators have devoted increased attention to teaching gifted students to become society's brightest thinkers and best problem solvers. One programming model that recognizes the teacher's role in helping students to become creative producers is the Enrichment Triad Model (Renzulli, 1977). This model defines gifted behavior as consisting of three interactive human traits: (a) above-average, though not necessarily superior ability, (b) task commitment, and (c) creativity.

High quality service-learning and creative productivity are similar because they both provide in-depth investigative research experiences which culminate in the development of creative products and services (see Figure 1). Both call for students to learn by assuming roles as first-hand investigators, writers, artists, or other types of practicing professionals. In each, the student's role is transformed from lesson learner to first-hand inquirer where he/she learns to think, to feel, and to act like the real-world practicing professional who delivers products and services. The teacher's role is changed from a didactic presenter of information to a mentor/guide who leads the students through the process.

Realistically, many students will pursue the creatively productive role at less sophisticated levels than adults. However, the more opportunities students have to become engaged and to practice in-depth levels of creative productivity, the more likely they will become adult-level first-hand inquirers, problem solvers, and productive creators. Given these parallelisms, it seems clear that practitioners of each approach can learn from the experiences of the others. As is often the case, researchers and practitioners live in silos in which they are not aware of these kinds of similarities, and this paper has been written to begin to overcome this problem.

Service-Learning and its Theoretical Framework

It sometimes seems as if there are as many definitions of service-learning as there are service-learning researchers and practitioners. But according to the Corporation for National and Community Service and the National and Community Service Act of 1993, the concept includes the following components: (a) service-learning is conducted in and meets the needs of the community, (b) it is coordinated with a school and the community, (c) it helps foster civic responsibility, (d) it is integrated into and enhances the academic curriculum of the students, and, (e) it provides structured time for students to reflect on the service experience (CNCS, 2006).

Educational institutions (elementary, secondary, and higher education) have the responsibility of educating students to become responsible citizens and leaders who use their education and life experiences to support the common good. A growing body of

research that has been summarized on several occasions by Billig (2007) shows that service-learning is an effective strategy for the development of civic skills (Melchior & Bailis, 2002), leadership competencies, and academic success.

More generally, we can think of service-learning as a method of teaching and learning which offers a unique opportunity for young people to use what they learn in the classroom to solve real-life community problems—and to continue their learning by doing so. Students acquire knowledge and develop skills through active participation in thoughtful, organized service that challenges them to identify research, propose, and implement solutions to real needs in their school or community. Therefore, as readers of this journal are undoubtedly aware, service-learning differs from “one-shot” community service activities such as sponsoring a recycling campaign once a year. It is also differs from community-based learning where students, for example, use a creek bed to collect water samples for science experiments.

Overview of the Creative Productivity Approach to Gifted Education

Historically, individuals who have exhibited superior abilities have been objects of curiosity. The debates have continued for centuries in search of answers to such questions as: Who are the gifted? or What is giftedness? Today, if one were asked to furnish names of persons considered to be gifted, more than likely one would note individuals who have made unique contributions to culture, those who are creative producers. History has demonstrated that it has been the creative and productive people of the world, the producers instead of the consumers of knowledge, who have been recognized as truly gifted individuals (Renzulli, 1986).

Many of the approaches and program models for gifted and talented students have revolved around the concept of promoting creativity, including the Talents Unlimited Model (Schlichter, 1986) that focuses on higher order thinking skills (Torrance, 1962; Taylor, 1986) Creative Problem Solving (Parnes, 1961) and the Schoolwide Enrichment Model (Renzulli & Reis, 1997) that addresses three kinds of enrichment—general exploratory activities, group training/activities, and individual and small group investigations of real problems. All of these theories of creative productivity and creative problem solving are closely related to approaches that characterize high quality project-based service-learning experiences.

Moreover, there is a growing body of evidence that shows that these approaches are relevant to all students—and adults for that matter—not just those who are described as gifted. For example, research studies including those of Cox, 1926; Guilford, 1956; Holland and Astin (1962); Hoyt, 1965; Munday & Davis, 1974; Terman (1926; Terman &

Oden, 1959; Wallach (1976; Wallach and Wing, 1969; and more recently, the work of Gardner, 1983; Sternberg, 1984; Sternberg and Davidson; 1982; Renzulli, 1978, 1992 – have all concluded that superior ability is not a requirement for adult creative achievement.

Service-Learning and Gifted Education

Today, in 2008, all students (not just the gifted) need to learn to think, to become problem-solvers, to become creative producers of knowledge. In reality, however, in the big picture of school reform, most administrators and teachers feel pressures to become heavily focused on accountability to standards and achievement tests and, due to time constraints, students are being forced to become major consumers of knowledge (good test takers) instead of producers of knowledge. Leaders in the field of service-learning and gifted education have both been stalwarts in resisting these kinds of pressures.

Purpose of Study

The purpose of this study was to determine the appropriateness and effect of an instructional unit in the creative productivity approach to gifted education--[Talents for Type III's: A Guide for Helping Students Become Better Creators, Decision Makers, Planners, Predictors, and Communicators (Newman, 2006)] as a means to promote quality service-learning experiences and projects for both gifted students and general education students. The specific research questions included:

Is there a significant difference in the quality of creative products and services produced by gifted students when compared to those of general education students?

Is there a significant difference in the completion rate of creative products/services of gifted students, when compared to the completion rate of creative products/services of general education students?

Methods and Procedures

The first author of this article conducted and assessed an effort to utilize the creative productivity approach as a way to implement quality service-learning for both gifted and general education in schools in Alabama in 2006. She began by disseminating project information to general education and gifted education teachers at local and state conferences, as well as to teachers who were enrolled in the Gifted and Talented

Master's Program at the University of Alabama. These teachers made the project available to general and gifted education students at their respective schools.

Participants. Initially, the population included 200 Alabama students in grades 3 through 5, representing 15 elementary schools. Of these students, 128 were identified as gifted; 72 were not. Twenty-one of the 72 general education students were not included in the data-analysis phase of the study because their projects did not meet the level of criterion #3 of Terry and Bohnenberger's (2004) Service-Learning Classifications continuum, namely that students merely volunteered a few hours in their community. They were not involved in an in depth community action project which required problem solving, planning, reflection, and learning from the experience as well as students making a positive impact on their school and/or community.

Both groups of students (general education and gifted) included in the study participated in a quality service-learning program based upon an approach to gifted education that was developed by this paper's first author's Talents for Type IIIs (Newman, 2006), which is based on The Enrichment Triad Model (Renzulli, 1977) and The Talents Unlimited Model (Schlichter, 1986). The 128 gifted students produced a total of 31 S-L projects. (Some students worked together in small groups.) The group of 51 general education students who had not qualified for the gifted program when screened/tested at their schools, completed 51 S-L projects.

Curriculum. The curriculum was based upon the experimental lessons in Talents for Type III's: A Guide for Helping Students Become Better Creators, Decision Makers, Planners, Predictors, and Communicators (Newman; 1991, 2006). The book was written initially for teachers to guide gifted youngsters to become creative producers through learning to conduct investigative research which results in a creative product or service to be used by a real audience. The curriculum unit, which includes 38 student activities and teachers' implementation notes, merges the Talents Unlimited (TU) Thinking Skills Model (Productive Thinking, Decision Making, Planning, Forecasting, and Communication) (Schlichter, 1986) with a 10-step research process (Renzulli & Reis, 1997). The lessons take the guesswork out of independent and small-group research studies, which result in the completion of quality products and services.

Assessment. The Student Product Assessment Form (SPAF), an instrument developed by Reis (1981), was used to assess the quality of student creative productivity, in this case the quality of the completed service-learning projects. This instrument was selected because it was the only one available that considered all of the critical aspects appropriate to the nature of service-learning and original creative products. The SPAF (see Figure 2), which has a possible score of 75 points, uses a Likert-type scale for

scoring operationally defined product quality by analyzing the degree of presence/absence of such factors as early statement of purpose, problem focusing, and level of resources.

The SPAF was the result of Reis' (1981) comprehensive dissertation research project directed toward developing the instrument and determining its reliability and validity. Interrater agreement on individual items ranged from 86.4% to 100%. The test-retest ($r = .96$) reliability was determined by having a group of independent raters assess the same set of student products on two separate occasions with an intervening time period between the two assessments. To obtain interrater reliability ($r = .96$), a technique described by Ebel (1951) was used to intercorrelate the ratings obtained from different raters (Reis & Renzulli, 1991). Content validity was established by submitting the instrument for evaluation to several recognized authorities in the field of gifted education, as well as in the area of educational research (Reis, 1981).

Collection of Data. The student products were evaluated by two independent, objective raters selected from teachers in the area who were not part of the study but who had received training by the first author in their coursework at the University of Alabama in TU and SEM and were implementing the models in their respective schools. A 3 hour practice session on use of the SPAF was conducted to clarify the procedures and to answer any questions related to the study. The raters were required to maintain interrater agreement of at least .75 for each product. In the case of less than .75 agreement, the raters discussed their rationales for each sub-score on the SPAF in order to come to agreement on a total score for the respective product.

The researcher collected the completed SPAFs in addition to photographs of the products, student/teacher surveys, teacher/student interview narratives, teacher/student logs, and tallies of the numbers of students who initiated an investigative service-learning study, as compared to students who finished their projects.

Analysis of Data. A posttest-only design for this quasi-experimental study was used to test the quality of the service-learning products/services and the completion rate of projects for both groups of students. In addition, qualitative research techniques were combined with quantitative techniques to assess teacher and student perceptions and reactions to the experimental lessons, as well as their perceptions about the impact of the S-L initiative on (a) the participants, (b) the school, and (c) the community. Through the process of triangulation, responses to open-ended questions, in addition to information from logs, interviews, and discussions were analyzed through developing coding categories (Bogdan & Biklen, 1982).

Results. Findings

Quantitative Results. A posttest-only research design was used in this quasi-experimental study to address the research questions.

Quality of Projects. Our data showed that the quality of the general education student projects was as good as, if not better than their gifted student counterparts. For research question #1, three independent t-tests were conducted to test the quality of the products between gifted education students and general education students. Bonferoni adjustment was used to control for Type I error rate inflation, $.05/3 = .016$. There was a significant difference between the general education students and gifted education students for “Key Concepts” (Items 1- 8), $t(80) = -2.93$, $p = .004$ (see Table 1). General education students scored significantly higher ($M=36.86$) than gifted education students ($M=33.87$). There were no significant differences between the two groups for “Overall Assessment” (Items 9A– 9G) or for the Total mean scores (Items 1 – 9G).

Completion. There was no difference in completion rates since all students in both groups completed their projects.

Discussion. Implications

CNCS has been committed to significantly expanding the use of service-learning in schools and communities, and there seems to be a great deal of progress in this regard. In 1984, only 9% of schools offered service-learning opportunities. CNCS’ Strategic Plan (2006) has set a goal to reach half of all K-12 schools and half of all colleges by 2010, and to eventually reach the ultimate goal to provide service-learning for every student, every year. We believe that one way to accomplish this objective is for practitioners of service-learning and gifted education to break out of their silos, learn from each other, and use the lessons from both streams to help accomplish the shared goals for our schools, our students, and our communities.

The results of this study confirms the effectiveness of integrating one of the leading models of gifted education into efforts to plan and implement quality service-learning for any and all students. This finding parallels the studies of gifted education conducted by Renzulli and Reis (1986), Schlichter (1986), Sternberg (1985), Taylor (1986), and Newman (1991, 2005) who suggested that applying higher level processes to real-world problem-solving situations might reap more benefits for students, rather than using the skills in unrelated activities.

More specifically, through application of the key elements of the creative productivity approach to gifted education--especially decision making, planning, and productive thinking-- students can learn to carry out the critical elements of quality service-learning such as (a) identifying topics for investigation, (b) developing inquiry skills to identify problem areas and questions for research, (c) developing skills to organize and manage the implementation of investigative studies, (d) learning to refine culminating products so that they represent quality beyond age/grade levels, and, (e) developing the skills to present and evaluate their work much like real-world adult professionals (Newman, 2005).

More generally, the study demonstrates the effectiveness of using the lessons that focus on promoting creativity with all students – including general education students who have not been identified as gifted. Our data suggest that by applying the creative processes to real-world research, students can sharpen their skills in productive thinking, decision making, planning, forecasting, and communication. Further, through use of creative productivity processes, students learn to apply appropriate human/material resources and to develop time management skills to help keep their investigations focused, on track. Through completing the process, students can develop a strong work ethic (task commitment) as they practice perseverance and hard work.

We believe that this research has shown that concepts from gifted education can help strengthen service-learning for all students. But we realize that this is only one study in a handful of schools, and we therefore hope that others will replicate this approach in order to provide more powerful evidence to support this conclusion, and additional data that suggest that best ways to utilize the creative approaches to gifted education in given classrooms and schools. Moreover, we hope that others will take steps to show that this process can work the other way as well, that using proven service-learning techniques can strengthen gifted education. Each of us has a role to play in school and societal improvement, and everyone's role can be enhanced if we provide all students with opportunities, resources, and encouragement to aspire to the highest level of talent development humanly possible (Renzulli & Reis, 1997). Clearly in today's world, in order to ensure that our nation continues to be one of the most productive in the world, school improvement efforts must focus on talent development with all students' learning how to become investigative researchers and creative producers of knowledge and services. Hopefully, historians of the future will document how an alliance of those with backgrounds in gifted education and service-learning worked together to meet this challenge.

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Figure 1: Comparison of Talents for Type III Model, Newman, 2006; and Billig's Service-Learning Process, 2000)

Talents for Type III's	Billig (Service-Learning Process)
Identify Topic	Identify strengths, interests, etc.
Focus Problem	Identify Problem
Learn to Manage Project; Create Action PL	Create a Plan of Action for Service
Conduct Research	Learn about need or problem identified
Learn skills and processes needed	Learn about need or problem identified
Implement Action Plan	Carry out Action Plan
Present to a Real-Audience	Celebrate success
Evaluate the project	Evaluate service/project and how to improve *Reflection conducted throughout the process.
*Reflection conducted throughout the process.	

(*Talents for Type IIIs adapted from Renzulli & Reis' 10 Steps Involved in Carry Out Type III Enrichment, 1997)

Figure 2: The Student Product Assessment Form (SPAF), Reis, 1981.

Key Factors:

Early Statement of Purpose

Problem Focusing

Level of Resources

Diversity of Resources

Appropriateness of Resources

Logic, Sequence and Transition

Action Orientation

Audience

Sub-Score: Overall Assessment of Above _____

Originality of the Idea

Achieved Objectives Stated in Plan

Advanced Familiarity with the Subject

Quality Beyond Age/Grade Level

Care, Attention to Detail, etc.

Time, Effort, Energy

Original Contribution

Sub-Score on Factors 9a. – 9 g. _____

Total Score: _____

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