

## **Using the Context, Input, Process, and Product Evaluation Model (CIPP) as a Comprehensive Framework to Guide the Planning, Implementation, and Assessment of Service-learning Programs**

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### **Abstract**

Planning, implementing, and assessing a service-learning project can be a complex task because service-learning projects often involve multiple constituencies and aim to meet both the needs of service providers and community partners. In this article, Stufflebeam's Context, Input, Process, and Product (CIPP) evaluation model is recommended as a framework to systematically guide the conception, design, implementation, and assessment of service-learning projects, and provide feedback and judgment of the project's effectiveness for continuous improvement. This article (1) explores the CIPP evaluation model's theoretical roots and applications, (2) delineates its four components, (3) analyzes each component's role in a service-learning project's success, and (4) discusses how the model effectively addresses Service-Learning Standards for Quality Practice. This article illustrates the application and evaluation of the model in a teacher-education service-learning tutoring project.

### **Introduction and Review of Literature**

Service-learning in educational settings involves the integration of community service into the academic curriculum (Koliba, Campbell, & Shapiro, 2006). Service providers achieve curricular goals while providing services that meet a community's needs (Zhang, Griffith, et al., 2009; Zhang, Zeller, et al., 2008). A successful service-learning project thus requires that a faculty member identify the needs of service providers and community partners, design a project that can effectively address both needs, and implement the project in a manner that generates the desired outcome. Each of these steps is vital to the success of the service-learning project; each requires, therefore, careful monitoring to ensure its effective execution. Moreover, service-learning projects often involve multiple stakeholders. They can generate unanticipated outcomes as well as intended outcomes. Although assessments aiming at one or several impacts, and focusing on a single stage of

a service-learning project, can be informative in answering specific questions on the value of service-learning, they cannot systematically guide the planning and implementation of service-learning projects. To date, no evaluation model appears to be widely adopted by faculty members to guide service-learning projects. The authors, therefore, posit in this article that Stufflebeam's (2003) Context, Input, Process, and Product (CIPP) model can serve as a guiding framework for service-learning projects.

### **Approaches for Evaluating Projects**

There appear to be some 26 approaches often employed to evaluate projects. These 26 may be grouped into five categories: pseudoevaluations, quasi-evaluation studies, improvement- and accountability-oriented evaluation, social agenda and advocacy, and eclectic evaluation. The first category, pseudoevaluations, includes five approaches that are often motivated by political objectives: public relations-inspired studies, politically controlled studies, pandering evaluations, evaluation by pretext, and empowerment under the guise of evaluation. The other 21 approaches are typically used legitimately to judge projects. The quasi-evaluations include 14 approaches that either focus on answering one or several questions or use a single methodological approach: objectives-based studies; accountability, particularly payment-by-results studies; success case method; objective testing programs; outcome evaluation as value-added assessment; performance testing; experimental studies; management information systems; benefit-cost analysis; clarification hearing; case study evaluations; criticism and connoisseurship; program theory-based evaluation; and mixed-methods studies. The improvement/accountability category is oriented toward determining the merit and worth of the project or entity being evaluated, and encompasses three approaches: decision- and accountability-oriented studies, consumer-oriented studies, and accreditation and certification. The social agenda/advocacy category dedicates evaluation efforts to pursuing social justice and includes three approaches: responsive evaluation or client-centered studies, constructivist evaluation, and deliberation democratic evaluation. Finally, the eclectic evaluation category includes the utilization-focused evaluation approach, and draws selectively from all available evaluation concepts and methods to serve the needs of a particular user group (*Stufflebeam & Shinkfield, 2007*).

When compared with professional standards for project evaluation, and after being rated by their utility, feasibility, propriety, and accuracy, the best approach that has surfaced is the Context,

Input, Process, and Product evaluation model. The CIPP evaluation model belongs in the improvement/accountability category, and is one of the most widely applied evaluation models. Unlike more traditional evaluation approaches such as the Tylerian Evaluation Rationale (Tyler, 1942), which is an objectives-based approach in the quasi-evaluation category mainly concerned with the final retroactive evaluation of whether a set of objectives has been met, the CIPP evaluation model is designed to systematically guide both evaluators and stakeholders in posing relevant questions and conducting assessments at the beginning of a project (context and input evaluation), while it is in progress (input and process evaluation), and at its end (product evaluation). A survey by American Society for Training and Development members found that the CIPP model was preferred over other evaluation models (Galvin, 1983).

## **What the CIPP Evaluation Model Can Do**

Specifically, the context evaluation component of the Context, Input, Process, and Product evaluation model can help identify service providers' learning needs and the community's needs. The input evaluation component can then help prescribe a responsive project that can best address the identified needs. Next, the process evaluation component monitors the project process and potential procedural barriers, and identifies needs for project adjustments. Finally, the product evaluation component measures, interprets, and judges project outcomes and interprets their merit, worth, significance, and probity.

## **Planning, Implementing, and Assessing Service-Learning Projects: A Multifaceted Task in Need of a Guiding Framework**

The challenge of carrying out service-learning projects lies in the complexity resulting from multiple project objectives and multiple participating groups (e.g., faculty and community members, and students). The challenges are intensified by the lack of a reliable evaluation model that systematically guides the service-learning projects (Zhang, Zeller, et al., 2008; Zhang, Griffith, et al., 2009).

The need for rigorous and authentic assessment of service-learning outcomes has been increasingly recognized, and the many challenges in assessing service-learning have been enumerated (Butin, 2003; Gelmon, 2000a; Holland, 2001). Service-learning is a complex approach to teaching and learning; it needs and deserves approaches to assessment, evaluation, and reporting

that are capable of capturing that complexity (Eyler & Giles, 1999; Karayan & Gathercoal, 2005; Mabry, 1998; Moore, 1999; Pritchard, 2002; Steinke & Buresh, 2002; Troppe, 1995).

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A number of effective service-learning project assessments focusing on specific aspects of service-learning outcomes have been conducted (Bringle & Kremer, 1993; Hamm, Dowell, & Houck, 1998). These assessments represent the performance testing approach in the quasi-evaluation category. For example, Furco (2002) developed

the Self-Assessment Rubric for Institutionalizing Service-Learning in Higher Education, a tool that enables colleges and universities to measure the degree to which service-learning is part of the institution’s culture. Marchel (2004) discussed evaluating reflection and sociocultural awareness, and Peterson (2004) discussed assessing performance in problem-based service-learning projects. The predominantly used data collection mechanisms include survey methodology (Kezar, 2002) and reflection (Ash & Clayton, 2004). Portfolios have also been recommended (Banta, 1999).

A few studies have examined the complexity of service-learning by focusing on the various groups of people involved, a method resembling the client-centered evaluation approach. A case study model of assessment was developed at Portland State University, to measure the impact of service-learning on four constituencies: students, faculty, community, and the institution (Driscoll, Holland, Gelmon, & Kerrigan, 1996). Subsequent work by Driscoll, Gelmon, et al. (1998) has provided an assessment model for service-learning projects specifically in education that focuses on the four constituencies of service-learning. The model provides both quantitative and qualitative measures at three levels of assessment: diagnostic, formative, and summative. Additionally, Gelmon, Holland, et al. (2001) have offered useful principles, techniques, and tools for assessing service-learning and civic engagement.

Holland (2001) suggested a more comprehensive evaluation model for assessing service-learning based on a goal-variable-indicator-method design, which can be best characterized as an objectives-based evaluation approach. Its strength is its attention to

the complex dynamics behind service-learning—the collaborative work of students and faculty members (within their institutional context) with their community partners. Holland’s work serves as the first step toward providing an evaluation model for assessing service-learning. However, the lack of a sense of sequence and intertwined nature may limit its usefulness. Currently, it appears that no specific evaluation model has emerged as an easy-to-use, systematic guide to a service-learning project’s planning and implementation (e.g., Baker-Boosmara, Guevara, & Balfour, 2006; Bordelon, 2006; Borges & Hartung, 2007).

### **Stufflebeam’s Context, Input, Process, and Product Evaluation Model: An Improvement Accountability Approach**

Stufflebeam’s Context, Input, Process, and Product evaluation model is “a comprehensive framework for conducting formative and summative evaluations of projects, personnel, products, organizations, and evaluation systems” (Stufflebeam & Shinkfield, 2007, p. 325). The model originated in the late 1960s to provide greater accountability for the U.S. inner-city school district reform project. It was to address the limitations of traditional evaluation approaches (Stufflebeam, 1971). The CIPP evaluation model “is configured especially to enable and guide comprehensive, systematic examination of social and educational projects that occur in the dynamic, septic conditions of the real world . . .” (Stufflebeam & Shinkfield, 2007, p. 351). Over the years, the model has been refined (Alkin, 2004) and used by a wide range of disciplines (Stufflebeam & Shinkfield, 2007).

In education settings, the CIPP evaluation model has been used to evaluate numerous educational projects and entities (Zhang, Griffith, et al., 2009; Zhang, Zeller, et al., 2008). For example, Felix (1979) adopted the model to evaluate and improve instruction in Cincinnati, Ohio, school systems. Nicholson (1989) recommended the CIPP evaluation model to evaluate reading instruction. Matthews and Hudson (2001) developed guidelines for the evaluation of parent training projects within the framework of the CIPP evaluation model. A faculty development project designed to support the teaching and evaluation of professionalism of medical students and residents was examined using the CIPP evaluation model (Steinert, Cruess, Cruess, & Snell, 2005). The model was used to construct Taiwan’s national educational indicator systems (Chien, Lee, & Cheng, 2007). The model also served as the evaluation model for Osokoya and Adekunle (2007) to assess the trainability

of enrollees in the Leventis Foundation (Nigeria) Agricultural Schools' projects. Moreover, Combs, Gibson, et al. (2008) derived a course assessment and enhancement model based on the CIPP evaluation model because of its flexibility in providing formative and summative results.

Over the years, exemplary applications of the model within education occurred in numerous evaluations by Bill Webster of the Dallas, Texas, Independent School District; Howard Merriman of the Columbus, Ohio, school district; Gary Wegenke and his evaluators of the Des Moines, Iowa, school district; Jerry Baker of the Saginaw, Michigan, school district; Jerry Walker of The Ohio State University National Center for Research on Vocational Education; Bob Randall of the Southwest Regional Educational Research Laboratory; Carl Candoli and his evaluators of the Lansing, Michigan, school district; Stufflebeam and colleagues of the Evaluation Centers (first at The Ohio State University and subsequently at Western Michigan University); and others. Many of the reports from these applications of CIPP were archived in ERIC centers, and some appeared in dissertations (*D. L. Stufflebeam, personal communication, April 16, 2010*).

The CIPP evaluation model emphasizes "learning-by-doing" to identify corrections for problematic project features. It is thus uniquely suited for evaluating emergent projects in a dynamic social context (*Alkin, 2004*). As Stufflebeam has pointed out, the most fundamental tenet of the model is "not to *prove*, but to *improve*" (*Stufflebeam & Shinkfield, 2007, p. 331*). The proactive application of the model can facilitate decision making and quality assurance, and its retrospective use allows the faculty member to continually reframe and "sum up the project's merit, worth, probity, and significance" (*Stufflebeam & Shinkfield, 2007, p. 329*).

The link between the unique features of the CIPP evaluation model and the need for a systematic comprehensive guiding framework for service-learning projects is strong. Stufflebeam and Shinkfield illustrate this link with this observation:

The Context, Input, Process, and Product evaluation model has a strong orientation to service and the principles of a free society. It calls for evaluators and clients to identify and involve rightful beneficiaries, clarify their needs for service, obtain information of use in designing responsive projects and other services, assess and help guide effective implementation of service, and ultimately assess the services' merit, worth, significance,

and probity. The thrust of CIPP evaluations is to provide sound information that will help service providers regularly assess and improve services and make effective and efficient use of resources, time, and technology in order to serve the well-being and targeted needs of rightful beneficiaries appropriately and equitably. (2007, p. 330)

In summary, the authors believe that the model can help guide service-learning project needs assessment and planning, monitor the process of implementation, and provide feedback and judgment of the project's effectiveness for continuous improvement.

## Understanding the Model

The four components of the Context, Input, Process, and Product evaluation model are useful in guiding the stages of a service-learning project. This section delineates the four components of the model and demonstrates each component's role as applied to a project. The authors discuss how the model addresses the Service-Learning Standards for Quality Practice (*National Youth Leadership Council, 2008*). Finally, the authors describe the application of the model using a teacher-education service-learning tutoring program.

## The Four Components

All four components of Stufflebeam's CIPP evaluation model play important and necessary roles in the planning, implementation, and assessment of a project. According to Stufflebeam (2003), the objective of context evaluation is to assess the overall environmental readiness of the project, examine whether existing goals and priorities are attuned to needs, and assess whether proposed objectives are sufficiently responsive to assessed needs. The purpose of an input evaluation is to help prescribe a program by which to make needed changes. During input evaluation, experts, evaluators, and stakeholders identify or create potentially relevant approaches. Then they assess the potential approaches and help formulate a responsive plan. Process evaluation affords opportunities to assess periodically the extent to which the project is being carried out appropriately and effectively. Product evaluation identifies and assesses project outcomes, both intended and unintended.

## Component I.

*Context evaluation* is often referred to as needs assessment. It asks, “What needs to be done?” and helps assess problems, assets, and opportunities within a defined community and environmental context (Stufflebeam & Shinkfield, 2007). According to the authors, the objective of context evaluation is to define the relevant context, identify the target population and assess its needs, identify opportunities for addressing the needs, diagnose problems underlying the needs, and judge whether project goals are sufficiently responsive to the assessed needs. The methods for the context evaluation include system analyses, surveys, document reviews, secondary data analyses, hearings, interviews, diagnostic tests, and the Delphi technique (Dalkey & Helmer, 1963).

The context evaluation component addresses the goal identification stage of a service-learning project. An effective service-learning project starts with identifying the needs of service providers (students) and the needs of the community. Many pitfalls are associated with needs assessments. Most can be attributed to the failure of adequate identification and articulation, in advance, of crucial indicators (e.g., purpose, audience, resources, and dissemination strategies). Application of the context evaluation component of the CIPP evaluation model could potentially prevent these pitfalls.

## Component II.

*Input evaluation* helps prescribe a project to address the

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identified needs. It asks, “How should it be done?” and identifies procedural designs and educational strategies that will most likely achieve the desired results. Consequently, its main orientation is to identify and assess current system capabilities, to search out and critically examine potentially relevant approaches, and to recommend alternative project strategies. The result of the input evaluation step is a project designed to meet the identified needs. The success of a service-

learning project requires a good project plan that, if implemented



correctly, will benefit both service providers (students) and service recipients (community members). Methods used to execute an input evaluation include inventorying and analyzing available human and material resources, proposed budgets and schedules, and recommended solution strategies and procedural designs. Key input evaluation criteria include a proposed plan's relevance, feasibility, superiority to other approaches, cost, and projected cost-effectiveness. Literature searches, visits to exemplary projects, employment of advocate teams, and pilot trials are all appropriate tools to identify and assess alternative project approaches. Once a project plan is developed, it can be evaluated (using techniques such as cost analyses, logic models, Program Evaluation and Review Techniques [PERT], and various scales) according to the criteria that were identified in the input evaluation step (*Stufflebeam & Shinkfield, 2007*).

### **Component III.**

*Process evaluation* monitors the project implementation process. It asks, "Is it being done?" and provides an ongoing check on the project's implementation process. Important objectives of process evaluation include documenting the process and providing feedback regarding (a) the extent to which the planned activities are carried out and (b) whether adjustments or revisions of the plan are necessary. An additional purpose of process evaluation is to assess the extent to which participants accept and carry out their roles.

Process evaluation methods include monitoring the project's procedural barriers and unanticipated defects, identifying needed in-process project adjustments, obtaining additional information for corrective programmatic changes, documenting the project implementation process, and regularly interacting with and observing the activities of project participants (*Stufflebeam & Shinkfield, 2007*). Process evaluation techniques include on-site observation, participant interviews, rating scales, questionnaires, records analysis, photographic records, case studies of participants, focus groups, self-reflection sessions with staff members, and tracking of expenditures.

Process evaluation can be especially valuable for service-learning projects because (a) it provides information to make on-site adjustments to the projects, and (b) it fosters the development of relationships between the evaluators (in this case, the two task force members in research and evaluation methodology) and the clients/stakeholders that are based on a growing collaborative

understanding and professional skill competencies, which can promote the project's long-term sustainability.

### **Component IV.**

*Product evaluation* identifies and assesses project outcomes. It asks, "Did the project succeed?" and is similar to outcome evaluation. The purpose of a product evaluation is to measure, interpret, and judge a project's outcomes by assessing their merit, worth, significance, and probity. Its main purpose is to ascertain the extent to which the needs of all the participants were met.

Stufflebeam and Shinkfield (2007) suggest that a combination of techniques should be used to assess a comprehensive set of outcomes. Doing so helps cross-check the various findings. A wide range of techniques are applicable in product evaluations, and includes logs and diaries of outcomes, interviews of beneficiaries and other stakeholders, case studies, hearings, focus groups, document/records retrieval and analysis, analysis of photographic records, achievement tests, rating scales, trend analysis of longitudinal data, longitudinal or cross-sectional cohort comparisons, and comparison of project costs and outcomes.

Providing feedback is of high importance during all phases of the project, including its conclusion. Stufflebeam and Shinkfield (2007) suggest the employment of stakeholder review panels and regularly structured feedback workshops. They stress that the communication component of the evaluation process is absolutely essential to assure that evaluation findings are appropriately used. Success in this part of the evaluation requires the meaningful and appropriate involvement of at least a representative sample of stakeholders throughout the entire evaluation process.

Product evaluation used in service-learning projects can serve at least three important purposes. First, it provides summative information that can be used to judge the merits and impacts of the service-learning project. Second, it provides formative information that can be used to make adjustment and improvement to the project for future implementation. Third, it offers insights on the project's sustainability and transportability, that is, whether the project can be sustained long-term, and whether its methods can be transferred to different settings.

**Table 1. Applying the Context, Input, Process, and Product Evaluation Model to the Service-Learning Standards for Quality Practice**

Standards for Quality Practice	Context, Input, Process, and Product Framework
Service-learning actively engages participants in meaningful and personally relevant service activities.	<ul style="list-style-type: none"> <li>• Context evaluation: Identify participants' needs.</li> <li>• Input evaluation: Design project that is engaging and targets participants' needs.</li> </ul>
Service-learning is intentionally used as an instructional strategy to meet learning goals and/or content standards.	<ul style="list-style-type: none"> <li>• Context evaluation: Identify learning goals.</li> <li>• Input evaluation: Design project as an effective instructional strategy to meet learning goals.</li> </ul>
Service-learning incorporates multiple challenging reflection activities that are ongoing and that prompt deep thinking and analysis about oneself and one's relationship to society.	<ul style="list-style-type: none"> <li>• Input evaluation: Design project that includes multiple challenging reflection activities.</li> <li>• Process evaluation: Assess reflection activities through reflective journals, focus group interviews, and surveys on self-perceptions.</li> </ul>
Service-learning promotes understanding of diversity and mutual respect among all participants.	<ul style="list-style-type: none"> <li>• Input evaluation: Design project that will promote understanding of diversity and mutual respect among all participants.</li> <li>• Process evaluation: Formatively and summatively assess whether the project promoted understanding of diversity and mutual respect among all participants.</li> </ul>
Service-learning provides youth with a strong voice in planning, implementing, and evaluating service-learning experiences with guidance from adults.	<ul style="list-style-type: none"> <li>• Context, input, process, and product evaluation: Involve participants in planning, implementing, and evaluating service-learning project.</li> </ul>
Service-learning partnerships are collaborative, mutually beneficial, and address community needs.	<ul style="list-style-type: none"> <li>• Context evaluation: Identify participants' and community needs.</li> <li>• Input evaluation: Design project that is mutually beneficial and allows participants to work collaboratively to address community needs.</li> </ul>
Service-learning engages participants in an ongoing process to assess the quality of implementation and progress toward meeting specified goals, and uses results for improvement and sustainability.	<ul style="list-style-type: none"> <li>• Process and product evaluation: Engage participants in an ongoing process to assess the quality of implementation and progress toward meeting specified goals, and use results for improvement and sustainability.</li> </ul>
Service-learning has sufficient duration and intensity to address community needs and meet specified outcomes.	<ul style="list-style-type: none"> <li>• Context evaluation: Identify community needs, and specify intended outcomes.</li> <li>• Input evaluation: Design project with sufficient duration and intensity.</li> <li>• Process and product evaluation: Assess whether community needs and specified outcomes are met.</li> </ul>

## The Context, Input, Process, and Product Evaluation Model's Linkage to Service-Learning Standards for Quality Practice

In 2008, the National Youth Leadership Council devised the K-12 Service-Learning Standards for Quality Practice (*National Youth Leadership Council, 2008*). The standards, which were vetted through a series of “reactor panels” convened nationwide by the National Youth Leadership Council and RMC Research

Corporation, serve as a yardstick for judging the quality of K-12 service-learning practices. Table 1 outlines how the CIPP evaluation model can serve as an organizing framework for systematic evaluation of service-learning projects to help meet the Standards for Quality Practice.

It is evident that the CIPP evaluation model has unique features that can help effectively address the K-12 Service-Learning Standards for Quality Practice. These unique features include context evaluation, ongoing process evaluation, and the model's emphasis on engaging participants in the evaluation process. The CIPP evaluation model can help provide youth with a strong voice in planning, implementing, and evaluating service-learning experiences; engage participants in an ongoing process to assess the quality of implementation and progress toward meeting specified goals; and use evaluation results for improvement and sustainability.

### **Applying the Model to a Teacher-Education Service-Learning Tutoring Project**

During spring semester 2008, a service-learning tutoring project was initiated to address the learning needs of pre-service teachers in the Elementary Education project at a public research university in the southeastern United States, as well as the needs of at-risk readers in the local school system. Twenty-six pre-service teachers taking a course in diagnostic/prescriptive teaching of reading completed a service-learning assignment by tutoring 26 Response-to-Intervention students (RTI at-risk readers) in kindergarten, first grade, and second grade. University Internal Review Board (IRB) human subjects approval was secured for this project. The CIPP evaluation model was used to guide the conception, design, implementation, and assessment of the tutoring project. The authors believe that its use led to the project's achieving the desired outcomes. The CIPP components were implemented as shown in Table 2 and in the narrative below.

**Table 2. Using the Context, Input, Process, and Product Evaluation Model to Guide a Service-Learning Tutoring Project**

Context, Input, Process, and Product Evaluation Model Components	Methods Used in the Service-Learning Tutoring Program
<p><b>Component I: Context evaluation</b></p> <p>Identify the needs, and the assets and opportunities for addressing the needs.</p>	<ul style="list-style-type: none"> <li>• Assessed the setting for the intended service.</li> <li>• Interviewed school principal, teachers, and reading specialists.</li> <li>• Reviewed school records.</li> <li>• Identified at-risk readers and their needs.</li> <li>• Administered diagnostic tests given to at-risk readers.</li> <li>• Conducted initial quantitative assessment of at-risk readers.</li> <li>• Conducted pre-service teacher focus group interviews.</li> <li>• Conducted initial quantitative assessments of pre-service teachers.</li> </ul>
<p><b>Component II: Input evaluation</b></p> <p>Prescribe a project to meet the identified needs, and identify and assess project strategies and procedural designs.</p>	<ul style="list-style-type: none"> <li>• Reviewed relevant literature.</li> <li>• Interviewed school principal, teachers, and reading specialists.</li> <li>• Consulted university reading faculty members and other experts.</li> <li>• Viewed exemplary projects.</li> <li>• Consulted Learn and Serve America.</li> <li>• Formed advocate teams.</li> <li>• Service-learning task force members met biweekly.</li> <li>• Conducted pre-service teacher focus group interviews.</li> </ul>
<p><b>Component III: Process evaluation</b></p> <p>Monitor project's process and potential procedural barriers, and identify needs for project adjustments.</p>	<ul style="list-style-type: none"> <li>• Identified what activities should be monitored.</li> <li>• Received biweekly update from service-learning task force.</li> <li>• Observed service-learning activities.</li> <li>• Kept a log of the activities.</li> <li>• Interviewed at-risk readers.</li> <li>• Interviewed pre-service teachers.</li> <li>• Interviewed school principal, teachers, and reading specialists.</li> <li>• Reviewed pre-service teachers' self-reflections.</li> <li>• Reviewed students' work samples.</li> <li>• Conducted debriefing with pre-service teachers.</li> </ul>
<p><b>Component IV: Product evaluation</b></p> <p>Measure, interpret, and judge project outcomes, and interpret their merit, worth, significance and probity.</p>	<ul style="list-style-type: none"> <li>• Conducted post-project quantitative assessments of pre-service teachers.</li> <li>• Conducted post-project focus group interview of pre-service teachers.</li> <li>• Conducted post-project quantitative assessment of at-risk readers.</li> <li>• Administered at-risk readers' survey.</li> <li>• Interviewed or surveyed other stakeholders, including faculty instructor, principal, teacher, reading specialist, and parents of at-risk readers.</li> </ul>

## **Assessing Community Needs Using Context Evaluation**

The community involved in the teacher-education service-learning project included the university initiating the project and the local school system. The university was assessed as to its needs for and capability of carrying out the service-learning project. The university's college of education offered both undergraduate and graduate projects of study in teacher preparation. All of its projects incorporated internship opportunities or capstone projects in collaboration with K-12 school professionals and other community partners. Service-learning became part of the culture at this university. The creation of a new position, the vice chancellor for service-learning, generated a surge of interest in service-learning projects and service-learning opportunities on and off campus. The university had a well-established infrastructure for service-learning research activities. University curricula included well-integrated projects that enable students to spend a semester or more in a connected series of courses linked to service-learning projects outside the university.

### **The needs within the university.**

Following a review of curriculum vitae and discussions among faculty members, a service-learning faculty task force was created for this project; it consisted of one university administrator, eight expert content area faculty members, and two faculty members in research and evaluation methodology who served as evaluators of the project. The service-learning task force examined the university's mission, curriculum, professional teaching standards, class experiences, literature, and feedback from school systems, and then identified the need within the college to work toward improving teacher retention. It was further ascertained that pre-exposure to the school environment decreases teacher attrition. That is, if pre-service teachers have a better understanding of the teaching profession and the reality of working with diverse student populations through hands-on practice, they are more likely to acquire needed professional pedagogical skills and to stay in the teaching field once they enter it.

### **The needs within the local school system.**

To identify community needs within the local school system, the task force communicated with and interviewed adjunct faculty members who were also teachers in the school system. Assistance

to elementary-level at-risk readers topped the needs list. Following these meetings, the task force asked, “What kind of service-learning project will best meet both the needs of the elementary-level at-risk readers and the need of our pre-service teachers to gain firsthand experience with diverse student populations?” and “Which school has the greatest needs?” The task force looked for a school situation that provided the best fit between the pre-service teachers’ needs and the needs of children. Once a potential site was identified, the researchers met with the principal and discussed their proposal. Students in the Response-to-Intervention process (RTI at-risk readers) were selected to be the service-learning recipients because they were working below grade level in reading and writing. They were considered at-risk readers and writers, but were not receiving special education services. This target population of at-risk readers needed, but had not been receiving, individual assistance in reading.

The service site was an elementary school that is very representative of a typical elementary school in the county; the school’s racial and socioeconomic balance was the result of countywide district school equity policies. The principal was very receptive to the proposed service-learning project. The elementary teachers involved were positive about the potential benefits of the project for their students and were pleased to work with the pre-service teachers and the university faculty.

### **Assessment of pre-service teachers’ readiness.**

Initial assessments of the pre-service teachers were conducted in January, before the service-learning intervention, in five sessions of focus group interviews to explore their initial attitudes and dispositions about this project. The interviews revealed that the pre-service teachers were equipped with the knowledge and skills needed to provide the service. More importantly, they expressed curiosity and a strong desire to participate in this project. Quantitative instruments were also used prior to project implementation to assess the pre-service teachers’ initial level regarding the following constructs: community service self-efficacy, motivations regarding volunteer activity, self-esteem, and confidence in making a clinically significant contribution to the community through service. These quantitative research instruments included the following:

- The Self-esteem Scale (*Rosenberg, 1965*)

- The Community Service Self-efficacy Scale (Reeb, Katsuyama, Sammon, & Yoder, 1998)
- The Volunteer Functions Inventory (Clary, et al., 1998)
- The Personal Social Values Scale (Mabry, 1998)

### **Assessment of at-risk readers' needs.**

Similarly, additional context evaluation–related assessments were completed on the initial status of elementary school students' self-esteem, and their steps toward independence and academic achievement in reading and oral and written language skills. The pre-service teachers administered literacy assessments, including running records (Clay, 1993), the Qualitative Reading Inventory-4 (Leslie & Caldwell, 2006), the Elementary Reading Attitude Survey (McKenna & Kear, 1990), and the Burke Reading Interview (Burke, 1980). Based upon these assessments, the pre-service teachers designed and taught lessons that targeted the students' needs while building upon their strengths.

### **Formulating Plans Using Input Evaluation**

Input evaluation was completed in order to prescribe a sound service-learning project. Meetings were conducted with university reading faculty members, reading specialists in the school, and potential collaborating classroom teachers to discuss what kind of service-learning projects would best meet the students' needs. Based on information gathered from the input evaluation process, a tutoring project that joined pre-service teachers in a reading methods course with a selected cohort of RTI at-risk readers was prescribed. Each week during the 15-week semester course, the pre-service teachers were assigned to spend 3 hours and 30 minutes on preparation for their tutoring experience and 1 hour and 30 minutes providing direct tutoring service to an identified RTI at-risk reader.

Next, an extensive literature review on best practices for working with at-risk readers was conducted as part of the initiated service-learning project. The task force members spoke with faculty members in the area of reading education in this university and other universities. They also discussed the plan with and sought feedback from reading specialists, in the targeted school. Finally, the task force watched videos of exemplary service-learning projects, visited leading service-learning websites, and discussed elements that would be important to include in this project.



As an important part of the input evaluation, expert input was sought to judge the feasibility of the service-learning tutoring project before its implementation, and adjustments were made to improve the project. Contributing experts included members of Learn and Serve America (the funding agency of the project), several nationally recognized experts in service-learning, the university's vice chancellor for service-learning, and the Department of Curriculum and Instruction chairperson. Based on the input received, the task force held face-to-face discussions as well as Delphi studies, a structured communication technique (*Dalkey & Helmer, 1963*), to refine the plan. The improved plans were then shared with the principal and cooperating teachers for their input.

### **Monitoring Progress Using Process Evaluation**

To assess the process, the task force members held biweekly meetings to give updates on the project's implementation. They also shared positive stories and discussed any potential problems that needed to be addressed. The task force members held regular discussions with the collaborating teachers, the principal, and the reading specialists.

The university faculty member who taught the reading course and her graduate assistant observed the service-learning activities regularly and kept a detailed log. Feedback regarding needed adjustment was gathered and acted upon. For example, the needs for guidance on administering an assessment and modifying instruction for English learners were identified and promptly addressed. Assessment guidance was provided by reviewing with the pre-service teachers step-by-step instructions on how to properly administer the assessment. Instruction for English learners was modified by providing slower paced instruction that was accompanied with explanation of unusual words. The faculty member also held weekly in-class debriefings with the pre-service teachers on the service-learning project. The pre-service teachers verbally reported on the activities, progress, and challenges in the service-learning project, and the instructor led class discussions to address issues that arose.

Pre-service teachers' self-reflection served as an important window into the operation of the project and its impact on them. Self-reflection has been recognized as an essential link between community experience and academic learning (*Ash & Clayton, 2004; Felten, Gilchrist, & Darby, 2006*). Reflection can also serve as a mirror

that makes pre-service teachers' inner changes visible to the faculty instructor and the project evaluators. Following each of the tutoring sessions, the pre-service teachers spent 15-20 minutes reflecting on what they had gained from the tutoring session, and what they had contributed to the students and the cooperating teacher.

To monitor the ongoing impacts of the tutoring sessions on the RTI at-risk readers, formal and informal academic assessments, structured observations, and curriculum-based measurements were employed during the project. Formal assessments are more "standardized" assessments: Tests are uniform in procedures for being administered, amount of time allowed for completion, and method of grading. Informal assessments are more flexible in their usage. They are designed by teachers specifically for their classrooms/students and/or for a certain lesson or topic. Informal assessments can also be things that are part of the daily classroom routine. Structured observation is an observation in which the observer completes a questionnaire or counts the number of times an activity occurs. The curriculum-based measure is a method of monitoring student educational progress through direct assessment of academic skills (*Marston, Mirkin, & Deno, 1984*). When using curriculum-based measures, the instructor gives the student brief samples, or "probes," made up of academic material taken from the child's school curriculum. These curriculum-based measure probes are timed and may last from 1 to 5 minutes. The child's performance on a curriculum-based measure probe is scored for speed, or fluency, and for accuracy of performance. The results are then charted to offer the instructor a visual record of a targeted child's rate of academic progress. The cooperating teachers as well as the faculty instructor regularly observed the service-learning tutoring activities and provided oral and written feedback to the pre-service teachers.

### **Assessing Impact Using Product Evaluation**

The product evaluation was centered on two overarching questions: (a) Did the service-learning experience meet the pre-service teachers' learning needs? (b) What impacts did the service-learning reading skills tutoring project have on the at-risk readers? The impact of the program on pre-service teachers was assessed using various data, including pre-service teachers' own reflections; direct quantitative assessments using survey research scales; focus group interviews of pre-service teachers; performance on the assignments for the reading methods course in which the pre-service teachers were enrolled; faculty observations of tutoring sessions; and input,

such as interview responses and other verbal feedback received informally, from university faculty advisors, the elementary school principal, participating teachers, reading specialists, and RTI at-risk learners.

## **Assessing pre-service teachers' learning**

### **Reflection.**

The pre-service teachers' reflective journal entries, which were part of the process evaluation component of the Context, Input, Process, and Product mode, were collected and entered into QSR International's NVivo 8 qualitative data analysis software (*NVivo Qualitative Data Analysis Software, 2008*) and analyzed qualitatively by three experienced researchers. These three researchers included the two task force members in research methodology and another task force member whose area of expertise is reading education. The researchers are not involved in the project's implementation process. Following the work of MacQueen, McLellan, Kay, and Milstein (1998); Fernald and Duclos (2005); and Fonteyn Vettese, Lancaster, and Bauer-Wu (2008), the three researchers adopted a codebook structure and the iterative process of discussing each code until agreement was reached. They then worked independently and collaboratively, gave each code a definition, set inclusion and exclusion criteria, and identified sample text references from the transcripts. Each reflective journal entry was independently coded by the three members of the team. Disagreements were resolved through discussion at our weekly meetings so that the codes were further refined (Fonteyn, et al., 2008). The authors believed that this process enhanced inter-coder consistency. Wherever possible, team members attempted to use participants' own words "to guide the construction of codes and their definitions for in-depth analysis," a process referred to by MacQueen, et al. (1998) as emic or nonstructural coding (p. 33). Findings from the reflection logs revealed an increase over the course of the semester in the pre-service teachers' understanding of the reading process and, more importantly, of their roles in helping students develop effective reading processes.

### **Focus group interviews.**

Five sessions of focus group interviews were conducted before the service-learning intervention (as part of the context evaluation) and again after the service-learning intervention (as part of the

product evaluation). These interviews with the pre-service teachers explored whether the service-learning tutoring experience had changed their level of confidence in “making a difference,” any of their personal social values in regard to service-learning and community service, or their attitudes and dispositions toward working with students from diverse backgrounds. These interviews were video-recorded directly to DVD, transcribed, and analyzed using NVivo 8 (*NVivo Qualitative Data Analysis Software, 2008*). The results revealed that the service-learning group had positive changes over the course of the semester in terms of their levels of confidence in “making a difference,” their personal social values in regard to service-learning and community service, and their attitudes and dispositions toward working with students from diverse backgrounds.

### **Quantitative assessments of affective learning using standardized research scales.**

Quantitative instruments were used before the service-learning project (as part of the context evaluation) and after the service-learning project (as part of the product evaluation) to assess changes in pre-service teachers regarding their community service self-efficacy, motivations for volunteer activity, self-esteem, and confidence in making a considerable contribution to a community through service. The following data collection instruments were used before and after the project: the Self-esteem Scale (*Rosenberg, 1965*), the Community Service Self-efficacy Scale (*Reeb, et al., 1998*), the Volunteer Functions Inventory (*Clary, et al., 1998*), and the Personal Social Values Scale (*Mabry, 1998*). The pre-service teachers’ responses on these research scales were statistically analyzed, and positive changes were found after the service-learning experience regarding self-esteem, community service self-efficacy, motivation to volunteer, and personal social values as they relate to community service.

### **Other assessments of pre-service teachers’ learning.**

Using process and product evaluation, pre-service teachers’ academic performances were monitored throughout the service-learning experience. The university faculty instructor regularly conducted observations of the tutoring sessions. Samples of pre-service teachers’ coursework, faculty observation field notes, curriculum-based measures, and reflective journals were collected and assessed by the university faculty instructor to explore the pre-ser-

vice teachers' understandings and mastery of the reading process and reading instruction. These pre-service teachers demonstrated more diligence and better quality in their academic work than the pre-service teachers in another section of the course the same instructor was teaching, who were not involved in service-learning. Community members who worked closely with them (e.g., the principal, cooperating teachers, and reading specialists) were interviewed regarding their perceptions of these pre-service teachers. Their responses included descriptions such as "responsible," "caring," "skilled," "patient," and "the children love them."

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*"These pre-service teachers demonstrated more diligence and better quality in their academic work than the pre-service teachers. . . who were not involved in service-learning."*

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### **Assessing Impact on At-Risk Readers**

The effect of the service-learning project on the at-risk readers' self-esteem; steps toward independence; and academic achievement in reading, and oral and written language skills, was assessed through formal and informal academic assessment, structured observations, curriculum-based measures, and students' reflective journals. The assessment measures were employed during the project (during process evaluation) and at the end of the project (during product evaluation). Elementary students' perceptions of themselves as readers, oral communicators, and writers were assessed prior to their participation in the project (context evaluation) and after the conclusion of the project (product evaluation) by using the Elementary Reading Attitude Scale (McKenna & Kear, 1990). A survey of the participating elementary school teachers regarding their assessment of the impact of the project on the at-risk readers was also administered. These results indicated that the at-risk readers benefited from the project through increases in reading ability, self-esteem, and self-perception of themselves as readers, as well as improved attitudes toward reading.

The CIPP evaluation model served as a guiding framework and systematically guided the conception, design, implementation, and assessment of this service-learning project in teacher-education. First, the Context Evaluation component identified the pre-service

teachers' need to gain firsthand experience working with students from diverse backgrounds and the elementary school RTI at-risk readers' need for individualized assistance in reading. Next, Input Evaluation incorporated input from experts, practitioners, and various stakeholders, and prescribed an effective tutoring project. Then Process Evaluation helped monitor the project implementation process and provided ongoing feedback for needed adjustments. Finally, Product Evaluation assessed the service-learning project's impacts and provided feedback and judgment of the project's effectiveness.

## Conclusion

University-based service-learning projects involve multiple stakeholders and aim to meet the needs of service providers and community partners. Their complex and dynamic nature calls for an evaluation model that can *operationalize* the process and provide step-by-step systematic guidance. Effectiveness is essential to the continued viability and growth of service-learning projects throughout the United States.

The issue of multiple goals and multiple constituencies is a major challenge in evaluating service-learning. Without a guiding evaluation model that is well-aligned with the unique features of a service-learning project, assessing the project may be challenging. Service-learning projects are too often subject to suboptimal assessments despite the collection of massive amounts of data, because researchers lack both the knowledge of key elements to assess, and access to a reliable evaluation model to organize the data and present the findings to various stakeholders in meaningful ways.

Without effective evaluation, service providers cannot make their projects and services better (*Stufflebeam and Shinkfield, 2007*). For example, service providers cannot be sure their goals are worthy unless they validate the goals' consistencies with sound values and a structured responsiveness to service recipients' assessed needs. Service providers cannot plan effectively and invest their time and resources wisely if they do not identify and assess options. It may be difficult to sustain university-community partnerships if the leaders of service-learning projects cannot show that they have responsibly carried out the project plan, produced beneficial results, and met the needs of the community partner.

Though not a new model, the CIPP evaluation model introduced in this article can be especially useful for guiding the planning, implementation, and assessment of service-learning projects.

The model employs multiple methods, has been tested in a wide range of contexts, has evolved and strengthened over time, and is supported by theoretical and pragmatic literature (*Stufflebeam & Shinkfield, 2007*). The model not only assesses the impact of a service-learning activity, but also helps to identify community needs by working *with* the community to identify needs and goals to be addressed and to formulate a project targeted to best meet those identified community needs, monitor project implementation, evaluate project outcomes, and provide recommendations for project improvement.

Without the guidance of the Context, Input, Process, and Product Evaluation Model, oversight or failure can easily occur in any part of the process, which could seriously hinder the service-learning project's operation and diminish its effectiveness. For example, without the model's regulation, the needs may not be as carefully identified, the match between the needs of participants may not be as meticulously ensured, problems in the implementation process may not be identified and corrected in a timely manner, and necessary multiple assessment methods may not be designed into the assessment. Each of these elements plays an important role in the service-learning project's success.

It is particularly important to note that because the Context, Input, Process, and Product evaluation model is a social systems approach to evaluation, all participants in a service-learning project help design the activities that they agree will meet the articulated needs of both the service providers (university members) and service recipients (community members). Shared decision making is essential, because "sustained, consequential involvement positions them to contribute information and valuable insights and inclines them to study, accept, value, and act on evaluation reports" (*Stufflebeam & Shinkfield, 2007, p. 330*). This social systems approach fosters an understanding and connection among service providers, community partners, and other stakeholders and can effectively promote long-term sustainability of a service-learning project.

From conceptualizing a service-learning project to institutionalizing it in the curriculum requires informed planning, guided implementation, and evidence of impact. A snapshot type of assessment from a single lens using mono-method constructions is unlikely to provide the kind of comprehensive and multifaceted data needed by educational policymakers. Stufflebeam's CIPP evaluation model has the potential to guide faculty members using service-learning as a teaching tool to systematically gather assessment data at each stage of a service-learning project, so that

they can make informed judgments to sustain or improve the project.

## Acknowledgment

The authors wish to express their appreciation to Daniel L. Stufflebeam (Distinguished University Professor, retired from Western Michigan University) for his helpful comments and important theoretical insights provided during the development of this article.

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