CREDE Center for Research on Education, Diversity & Excellence

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Observing the Five Standards in Practice:

Development and Application of the Standards Performance Continuum

A growing body of research evidence indicates that implementing CREDE's Five Standards for Effective Pedagogy promotes positive learning outcomes for students. The Five Standards—Joint Productive Activity (JPA), Language and Literacy Development (LLD), Contextualization: Connecting School to Students' Lives (CTX), Challenging Activities (CA), and Instructional Conversation (IC)—are principles critical for improving the teaching and learning of culturally and linguistically diverse students. Each standard facilitates the construction of knowledge by teacher and students and promotes conceptual elaboration. The standards are supported by a body of evidence of their effectiveness in reducing the achievement gap between mainstream and diverse learners (Doherty, et al., 2002).

Through multi-year partnerships with demonstration schools, CREDE researchers and coaches work with teachers on the Five Standards over a sustained period of time. At these sites, CREDE coaches and teachers collaborate to conduct and improve instruction: the Five Standards are integrated into classroom activities structured into multiple, simultaneous activity centers. Student learning outcomes at demonstration schools are reflective of exemplary instruction guided by the standards.

The Standards Performance Continuum (SPC) is a 5-level rubric that measures implementation of the Five Standards and is used at demonstration schools to guide and assess professional development activities. Coaches, teachers, and researchers use SPC data to focus and refine instruction, guide and assess the effectiveness of professional development activities, and examine the relationship between teachers' use of the standards and student achievement. This brief will discuss the development of the SPC, recent research in which the instrument was used, and areas of application.

Design of the SPC Rubric

The goal in designing the SPC was to develop a measure that would provide quantitative data on the *quality* of teachers' implementation of the Five Standards. First, the underlying construct of each standard was identified. The construct underlying JPA is *collaboration*, LLD is *language use*, CTX is *connected learning*, CA is *cognitive complexity*, and IC is *student-teacher dialogue*. Researchers then defined performance levels for each standard ranging from 0 (Not Observed) to 4 (Integrating) and developed performance indicators for each standard's level (see example in Figure 1).

Development of the SPC

In order to assess the validity of the SPC, CREDE researchers first piloted the rubric in more than 20 classrooms. Over four phases of development, data were obtained from both live and videotaped observations in a New Mexico middle school with a predominantly Native American population. Researchers examined the extent to which the SPC scores of trained observers were in agreement when rating the same activity. Feedback from each phase was used to modify the criteria for each standard in the successive phase. Such fine-tuning clarified distinctions between degrees of performance and made the instrument more readily applicable to multiple content areas and grade levels. SPC ratings from the fourth phase revealed a high level of agreement among observers.

CREDE researchers then used the SPC to observe instruction in a dozen public schools in South Florida where 33% of the students were designated as limited English proficient (LEP). The observations were used to assess the SPC's concurrent validity—the relationship between SPC scores and scores of other instruments that measure similar pedagogical constructs. Two observers rated the same lesson using the SPC and two other instruments: the Teacher Roles Observation Schedule (TROS by Waxman, Huang, Lindvall, & Anderson, 1990) and the Classroom Observation Measure (COM by Ross & Smith, 1996). The comparisons found meaningful correlations between SPC, TROS, and COM scores.

The SPC and Student Outcomes

Following the work in South Florida, researchers used the SPC at an elementary school in Central California. The

Figure 1. SPC Rubric showing performance levels and indicators for JPA standard

	Not Observed 0	Emerging 1	Developing 2	Enacting 3	Integrating 4
Joint Productive Activity	Joint Productive Activity is not observed.	Students are seated with a partner or group, AND (a) collaborate and assist one another, or (b) are instructed in how to work in groups, OR (c) contribute individual work, not requiring collaboration, to a joint product.	The teacher and students collaborate on a joint product in a whole-class setting, OR students collaborate on a joint product in pairs or small groups.	The teacher and a small group of students collaborate on a group project.	The teacher designs, enacts, and collaborates in joint productive activities that demonstrate skillful integration of multiple standards simultaneously.

students at this treatment site were 90% Hispanic and 68% were designated English language learners. A total of 78% of students at this site were eligible for free or reduced-price lunch. CREDE researchers conducted preliminary studies that investigated the relationship between implementation of the Five Standards and student outcomes on year-end standardized tests (Doherty, Pinal, Hilberg, & Tharp, 2003). When that work indicated a significant relationship, researchers set out to replicate those findings.

CREDE researchers designed and conducted a quasi-experimental replication study (Doherty, Hilberg, & Lee, 2004) using a nearby school that served as the control site. The control site was similar to the treatment site in that it had a similar ranking on California's 100 Similar Schools list and similar scores on the California Academic Performance Index. Pedagogy and classroom organization across sites were compared. In total, 23 teachers and 394 students took part in this study.

A single trained observer used the SPC to assess implementation of the Five Standards during English language arts instruction in the 23 classrooms. For each teacher, the observer conducted four 45-minute observations at four-week intervals. The SPC scores for each standard were then averaged across observations to create a total SPC score per teacher. Analyses found significantly higher SPC Total scores at the treatment site.

Researchers then considered how the SPC Total scores related to year-end student performance on the SAT-9 standardized test. First, they developed estimated gain scores (EGS) for each student based on (a) students' scores on the SAT-9 subtests (comprehension, language, reading, spelling, vocabulary) and overall achievement from the previous year, and (b) observed scores on the same tests one year later. A positive EGS score indicated a gain over a predicted score and a negative EGS score indicated a decline.

Next, the CREDE team used hierarchical regression analysis to investigate the variance in EGS scores. The variables entered in the first step were the following: site, teachers' years of experience, student grade level, and language of instruction. SPC Total scores were entered into the model on the second step. The addition of SPC Total scores explained a significant increase in the variance of EGS scores over what could be accounted for by the first set of variables alone. The only exception was in the relationship between scores on the spelling subtest and the SPC Total scores. This model found that SPC scores accounted for a significant increase in the comprehension, language, reading, and vocabulary test scores over that accounted for by the first set of variables.

Thus, the findings indicate that the SPC Total scores reliably predicted student achievement gains: as teachers' use of the Five Standards increased, student achievement gains increased. The findings also support the predictive validity of the SPC as a research instrument for measuring the relationship between teachers' use of the Five Standards and improvements in student performance.

Areas of Application for the SPC

The SPC has much to offer researchers interested in educational reform. As described in this brief, researchers are using the instrument to better understand how instruction guided by the Five Standards has an impact on student learning outcomes. They are also using the SPC as an outcome variable to assess professional development activities. Teacher SPC scores after professional development training reveal how effective the training is in transforming teacher instruction.

Because the rubric provides explicit indicators of implementation of the Five Standards, the SPC is also a valuable tool for teachers engaged in the long-term process of teacher change. Individual teachers can use the SPC rubric for self-evaluation. The instrument can also be a platform for reflection and discussion for teacher groups.

In addition, those working outside the classroom have found the SPC to be valuable. In one school district serving a Native American community, professional developers and administrators used the SPC to guide their work. The SPC provided a framework for the design of professional development activities. Administrators developed criteria for teacher evaluations based on the rubric.

Conclusion

The Five Standards articulate generic principles of effective pedagogy and are supported by research from the disciplines of sociocultural theory, cognitive science, organizational theory, and critical theory (Tharp, Estrada, Dalton, & Yamauchi, 2000). The universal nature of the Five Standards allows their application to instruction in all subject matters. The SPC serves the purpose of describing specifically *how* the standards can best be enacted in various educational settings. When used as a research tool, it can provide valuable information on student learning outcomes related to implementation of the Five Standards and on the complex relationship between pedagogical theory and practice. More information on the SPC, including the SPC rubric, can be read online at http://crede.ucsc.edu/standards/standards.html.

References

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