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Advancing the Scholarship of Teaching Through Collaborative Self-Study

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Through Collaborative Self-Study

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Many higher education institutions emphasize the importance of teaching in their mission statements. Good teaching is no longer simply a faculty member's duty; it is critical to the credibility of an institution. However, a relatively small portion of university resources are devoted to the development of faculty as teachers. Few university professors in any discipline receive pedagogical training to prepare them for the teaching task. The opportunities that are provided by institutions typically focus on quality assurance—bringing the poorest teachers and courses up to some level of minimum acceptance instead of enhancing the overall quality of teaching (Kember & McKay, 1996).

Professors who seek to improve their teaching skills prefer frequent faculty-initiated conversations to annual administration-sponsored workshops (Palmer, 1993), as professors rarely have opportunities for ongoing conversations about teaching with colleagues. Moreover, when such conversations do occur, important discoveries may not be captured because participants do not document or transmit their teaching knowledge. Thus, the top-down model of teaching improvement is unlikely to meet the diverse needs of faculty across the disciplines.

Self-study research is a mode of scholarly inquiry in which teachers examine their beliefs and actions within the context of their work as educators (Whitehead, 1993) and explore pedagogical questions. It allows professors to renew their instructional tools as well as discover new tools to convey the rich and changing complexity of knowledge in a discipline (Shulman, 1986a). When compared to participation in traditional teaching workshops, self-study research has numerous benefits. It specifically addresses the faculty member's teaching context, including the subject matter, student population, and other unique aspects of a class. Rather than playing the role of passive participants, faculty members engaged in self-study research actively control the purpose, agenda, and timing of their work as well as its outcomes. Self-study research also

enables faculty members to create a tangible product from their work in the form of teaching knowledge that is transferable to colleagues. This accomplishes academia's mission to reach beyond routine knowledge and seek answers for new questions (Debicki, 1996).

For over a decade, education faculty have used self-study research as an effective tool for both teaching improvement and knowledge discovery. Although self-study research has occurred almost exclusively within the discipline of education, it holds great promise as a mode of inquiry for university faculty in every academic discipline. Self-study research has several characteristics that make it well suited for use university-wide. First, faculty can use self-study research to advance knowledge about how to effectively teach various subjects in higher education. Shulman (1986a) suggests that good teaching requires instructors to have pedagogical content knowledge-an understanding of what makes the learning of specific topics easy or difficult. Primary and secondary school teachers obtain their pedagogical content knowledge from the re- search of university faculty in the field of education, who study such areas as mathematics or reading instruction. University faculty, however, seldom have access to an outside research team that generates pedagogical knowledge matching the faculty member's specialized subject matter. Professors must themselves generate discipline-specific pedagogical content knowledge. Self-study research is a valuable tool for accomplishing this task.

Second, self-study research encompasses many research approaches and methods, allowing university faculty members to build upon their existing research expertise. For example, some self-study techniques al- ready are familiar to faculty members who employ videotaping, journaling, or peer feedback to improve their teaching practice. Unfortunately, these types of self-study efforts are usually infrequent and sporadic rather than systematic (Mallik, 1998), and they may produce insights that are useful only to the individual. Self-study research provides a

more structured framework that enables faculty members both to improve their teaching and answer research questions about pedagogy and teaching.

Finally, self-study research can provide new insights into how teachers impact learning outcomes. Shulman's (1986b) model of research on teaching suggests that many factors affect student learning. For Shulman, the fundamental factors are the primary participants—teacher and student. Research on both teacher and student involves investigating each actor's capacities, actions, and thoughts. Of these, the teacher's capacity, the "stable and enduring characteristics of ability, propensity, know- edge, or character" (Shulman, 1986b, p. 7), remains largely a "black box." Although classroom instruction consists of the interaction of many worlds, each of these worlds must be studied in its own terms, including the world of the teacher. Understanding "the explicit and implicit theories" (Shulman, 1986b, p. 26) that teachers bring to bear in their work should be a central feature of research on teaching. Thus, self-study research focuses attention on building a richer understanding of the role of teachers in the classroom, extending beyond simplistic demographic or psychographic measures. A more holistic understanding of teaching across various disciplines can benefit current faculty members as well as improve teaching- related education for prospective faculty members.

In this article we provide a review of the existing body of self-study research. Conducted primarily by education faculty for the purpose of improvement in teaching and teacher education, our examination of this literature suggests that collaboration is vital to encouraging faculty from a variety of disciplines to undertake self-study research for the purpose of moving beyond teaching improvement to knowledge creation. Finally, a three-phase model of collaborative self-study research (comprised of assessment, implementation, and dissemination stages) is offered

that tailors self-study research to the needs of university faculty members who have the dual goals of improving their teaching practice and advancing knowledge.

Overview of Self-Study Literature

Self-study research conducted by university faculty began appearing in education journals, conference proceedings, and books around 1990. A review of this literature indicates that self-study research can be grouped into three categories that identify the primary focus of the inquiry: teacher identity, the relationship between teaching beliefs and practice, and collegial interaction.

Identity-Oriented Research

Identity-oriented self-study research includes introspective examinations of "who am I" and retrospective examinations of personal life history and professional development. The emphasis of this strand of self-study research is on developing awareness of one's current self and development as a teacher. Since teaching development within academia often is more an unguided, exploratory odyssey than a smooth, well- planned trajectory, many faculty members have focused on this aspect of self-study (e.g., Allender & Allender, 1996; Bailey, 1998; Cole & Knowles, 1996a; Elijah, 1996; Finley, 1996; McClay, 1998; Olson, 1996; Selley, 1998; Wilcox, 1998).

The need for self-definition is especially critical in situations where the values of a faculty member differ from those of the educational institution. Some self-study research reflects the tensions, surprises, confusion, challenges, and dilemmas faced by beginning university-level teachers. For example, McCall (1996) examined her conflict with her institution's perspective that the goal of teaching was to satisfy student- customers. Guilfoyle (1995) and Hamilton (1995) discussed their struggles in learning their roles as new members of the academy.

Although teaching and research were the expected roles in their positions, they found it disturbing to have research valued more than teaching. Tension mounted when their research on their own teaching as an alternative type of scholarship was questioned. Cole and Knowles (1996b) brought the discussion to its climax when they expounded on the battle around tenure and the defeat of individuals whose teaching-oriented research was considered inadequate. The cultural, intellectual, and political dimensions of the professorate compelled these teachers to engage in self-study to establish their identities and values within the academic community.

Relationship Between Teaching Beliefs and Practice

The second category of self-study research reflects faculty members' desire to improve their teaching practice. Many faculty maintain that examining their teaching beliefs is essential to both curricular and instructional improvement (e.g., Bullough, 1991, 1994; Munby, 1996; Russell, 1995; Wood & Geddis, 1999). Very often, implicit theories and hidden beliefs have stronger influence on teachers' practices than their conscious cognitive reasoning. Consequently, a clear understanding of the reasons and motivation for their actions may improve their teaching performance (Candy, 1991).

Self-study research examining teaching beliefs and practice utilizes a variety of perspectives. For example, Abt-Perkins, Dale, and Hauschildt (1998) questioned how biases embedded in their own biographies and social contexts influenced practice. Oda (1998) investigated the ways in which her cultural background affected her teaching, exploring whether this factor enhanced or hindered students' understanding of multicultural issues. Richards and Barksdale-Ladd (1997), with the aid of cases describing educational problems, unearthed subconsciously held professional beliefs that influenced their decision-making processes. Additionally, a few faculty have integrated student feedback into their examination of

links between belief and practice. Schiller and Streitmatter (1994) exchanged journals with students who provided commentary on the theory conveyed and the situations created by the authors' teaching. After chronicling her own feelings and thoughts about a course, Trumbull (1996) shared her journals with students who reflected on whether her intentions aligned with her performance.

Collegial Interaction

The third category of self-study research encompasses investigations that are conducted collaboratively, as well as studies that examine the roles of social support, peer input and/or collegial relationships in teaching and professional activities (Featherstone, Chin, & Russell, 1996; Garcia & Litton, 1996; Johnson, Kaplan, & Marsh, 1996; Kleinsasser, Bruce, Berube, Hutchison, & Ellsworth, 1996; Knowles & Cole, 1996; LaBoskey, Davies-Samway, & Garcia, 1996, 1998; Lomax, 1998; Rios, McDaniel, & Stowell, 1996; Ross & Upitis, 1998; Upitis & Russell, 1998). More often than not, self-study research is carried out in concert with other colleagues.

An example of this stream of self-study research is an investigation by Guilfoyle, Hamilton, Pinnegar, and Placier (1996), in which the authors formed a collaborative group while they were doctoral students to focus on such issues as educational reform, academic socialization, and teacher development. The collaboration continued after group members became education faculty members working at separate higher education institutions. Similarities in their struggles gave them a broader perspective from which to understand and handle teaching challenges.

Assessment of the Existing Literature

Our review of the self-study research supports an earlier finding that it is a useful, effective means of improving teaching (Zeichner, 1999). Faculty members have successfully enhanced their teaching by developing a greater understanding of their identities, by examining conflicts between belief and practice, and by working collaboratively with others. The primary limitation of the literature is that researchers have applied their findings to themselves with little discussion about how their results inform the greater teaching community. In addition, much of the literature reviewed eschews addressing validity issues and provides the reader witt limited information in terms of data collection and analysis. Yet, because of their research skills, university faculty members are uniquely capable of creating knowledge that furthers understanding outside of themselves. Many of the self-studies cited above fail to capitalize on the potential of their inquiries for creating transferable knowledge that is of benefit to colleagues and other educators. Given university faculty members' dual mission of effective teaching and knowledge creation, self-study research should seek to create benefits beyond those that accrue to the individual faculty member.

Collaboration in Knowledge Creation

As noted earlier, many faculty members are already engaging in self- study activities for the purposes of teaching improvement. Leveraging these activities into systematic self-study research requires relatively little additional effort on the part of the faculty member and results in new knowledge creation. However, a central challenge in expanding self-study research outside the field of education is that education faculty view teaching and pedagogy as legitimate subjects for research, while faculty in other disciplines may not. Faculty in the humanities or sciences perceive themselves as experts in their disciplines but may not feel confident in conducting research on how to teach better within their discipline. These faculty also may worry that senior

colleagues and journal editors in their fields do not value scholarship about teaching and pedagogy. Academics often are more willing to accept self-study research as "practical knowledge" (i.e., research leading to change in one's practice) rather than "formal knowledge" (i.e., research resulting in new theories that extend beyond the practice setting) created through more established research traditions (Anderson & Herr, 1999; Fenstermacher, 1994; Huberman, 1996; V. Richardson, 1994). To address these concerns and encourage the use of self-study research across all university disciplines, we advocate that faculty members utilize a collaborative approach to self-study research. Collaboration in self-study research provides numerous benefits that can enhance the outcomes of research for the individual, the university, and the academic discipline.

One benefit of collaboration in conducting self-study research is social support. The aim of self-study research is "to provoke, challenge, and illuminate rather than confirm and settle" (Bullough & Pinnegar, 2001, p. 20), thus the faculty member may face criticism and controversy when attempting to disseminate the findings of a self-study research project. Social support provides motivation and encouragement that increase the meaningfulness of the work to the researchers. The involvement of multiple faculty members in self-study research also enhances its visibility and may positively influence perceptions of the work's value.

Another benefit of collaboration is that research groups foster a culture of reflectiveness (Schoenfeld, 1999) that results in higher-level discourse and critique. Collaborating researchers can ask questions, demand details, offer alternative explanations, and critically evaluate research more easily than an individual researcher can. Working with collaborators also can increase the scope of data collection and facilitate completeness, specificity, and clarity in the data (Anderson & Herr, 1999). As Maxwell (1992) notes, there is always the possibility for alternative, equally

valid accounts from different perspectives. That the "insights of one person [may] trigger new perspectives or insights in other team members" (Morse, 1994, p. 230) is an additional benefit to collaboration.

Finally, collaboration in self-study research helps researchers avoid solipsism and increases the chances that faculty will create transferable knowledge. Self-study researchers are invested personally and profoundly in their studies (Bullough & Pinnegar, 2001), giving rise to questions about the work's validity. Theories developed through self-study research have been rebuked for their lack of generalizability beyond the research context. For example, Huberman (1996) criticizes teacher research as guilty of hubris, asserting that it makes exaggerated claims about generalizability. He questions whether emic knowledge re- ported by practitioners studying themselves is useful to others unless it is transformed into a more widely shared etic idiom. Furthermore, Fenstermacher (1994), V. Richardson (1994), and Cole (1994) raise concerns about the validity of introspective research as it is subject to in- complete information recall. These criticisms stem in part from inconsistency in the self-study literature in addressing validity issues.

Challenges to the validity of self-study reflect an underlying epistemological question about whether researchers can create useful knowledge when they are their own research subjects. From our perspective, validation, rather than validity, is a more important standard in self- study research. Validation focuses on the "judgment of the trustworthiness or goodness of a piece of research [as] a continuous process occurring within a community of researchers" (Angen, 2000, p. 387). Clearly, self-study does not reduce or eliminate one's obligation to conduct a systematic inquiry that meets the standards of the researcher's chosen methodology. A complete discussion of what constitutes valid research across the many possible research

paradigms and methodologies is beyond the scope of this article. However, we contend that the validation of self-study research is enhanced significantly through collaboration. Valid knowledge claims can emerge only when conflicting interpretations and action possibilities are discussed and negotiated (Kvale, 1996) by both the collaborative team and the larger community of scholars. Collaboration in conjunction with careful attention to methodology and data analysis can establish the validation of the research.

In conjunction with the benefits listed above, collaboration plays an important role in negotiating between theory and practice. We offer a process model for conducting collaborative self-study research that can improve teaching practice as well as create pedagogical content knowledge. If the scholarship of teaching is to advance, there must be inquiry-within research teams and the research community as a whole- into the process of inquiry itself (Hutchings & Shulman, 1999). Consequently, our collaborative process model contributes to the growing discussion about the process of teaching inquiry.

A Process Model of Collaborative Self-Study

Barnes's (1998) assessment of the field of self-study suggests three areas in particular need of scholarly attention: (1) the preconditions of successful self-study, (2) the meaning of validity in self-study, and (3) the process of self-study. These suggestions are incorporated into a three-stage model we offer for collaborative self-study. The stages of the model are: assessment, implementation, and dissemination (see Figure 1). This model, which includes consideration of the preconditions to collaborative self-study along with method validation, is intended for use across various research paradigms as there is a need to keep the scholarship of teaching open to a wide set of inquiries (Hutchings, 2000).Self- study research does not seek to locate the "best"

method for studying one's own teaching, but instead seeks to describe and understand more fully the important phenomenon we refer to as teaching (Hutchings & Shulman, 1999).

The assessment phase requires the researcher to conduct a multilevel evaluation to determine whether preconditions favorable to self-study exist. This evaluation involves considering the researcher's readiness for self-study, the environment for collaboration, and the existing discourse in the academic community on the researcher's chosen topic. The implementation phase directs the researcher to select data collection and analysis methods while giving continuous attention to process and validation. Finally, the dissemination phase asks the researcher to draw conclusions from the self-study process and provide insights to the multiple audiences of the process. This stage of the process   should enable improvement in teaching practice for the researcher and communicate knowledge about teaching to the larger academic community. Ideally, the model is an iterative one in which faculty members return to the assessment phase having derived new research questions from the research process.

Assessment Phase

Assessment of the situation is the first phase of engaging in self-study for the purposes of both teaching improvement and knowledge creation. Faculty should conduct three levels of assessment to determine if situational conditions are favorable to self-study. At the individual level, self-study researchers must assess their own readiness for engaging in self-study, as the process requires honest critique. At the group level, self-study researchers must determine the availability of colleagues with whom they can collaborate and the quality of the relationships with these colleagues. At the level of the academic community, a self-study researcher must select a focus of inquiry and situate it within the existing academic discourse to evaluate potential contributions to knowledge. Each level is discussed below.

Evaluating self-readiness. Much of the potential value of self-study lies in its ability to capture the practical knowledge that teachers possess. Schon (1983) describes this type of knowledge as "tacit, implicit in our patterns of action and in our feel for the stuff with which we are dealing" (p. 49). Tacit knowledge is highly personal and hard to formalize, making it difficult to communicate or share with others (Nonaka & Konmo, 1998). Moreover, tacit knowledge is deeply rooted in an individual's actions and experiences as well as the ideals, values, or emotions he or she embraces (Nonaka & Konmo, 1998; Teece, 1998).

In conducting self-study, researchers must articulate their beliefs and interpret their actions. Lakoff and Johnson (1980) believe that

> self-understanding requires unending negotiation and renegotiation of the meaning of your experiences to yourself. It involves the constant construction of new coherences in your life, coherences that give new meaning to old experiences. The process of self-understanding is the continual development of new life stories for yourself. (p.233)

However, most people are reluctant to face the "invisibility of everyday life" because of its familiarity and contradictions (Erickson, 1986, p. 121). Erickson illustrates this point by referring to anthropologist Clyde Kluckhohn's aphorism: "The fish would be the last creature to discover water." Willingness to uncover and reveal existing frames of reference is a criterion of quality in self-study and an indication that the study is not being used to rationalize existing frames of reference (Loughran & Northfield, 1998).

Evaluating readiness for self-study includes considering one's disposition to confronting contradictions and taking risks. The overlapping roles of teacher and researcher can create tensions because of the "living contradiction" (Whitehead, 1993, p. 8) realized by researchers when their teaching practice does not match values they claim to embrace. Pinnegar and Russell

(1995) call self-study "high-risk" research because it reveals participants as both educators and human beings through documentation of successes as well as shortcomings. This process is analogous to medicine where clinical research is commonplace as medical faculty monitor their clinical work and do whatever is necessary to improve its impact (Shulman, 2000). Willingness to reveal and confront self are necessary preconditions to self-study (Cochran-Smith & Lytle, 1999; Moore, 1999; Northfield 1996). Because of the intimate nature of the findings in self-study, intellectual honesty and emotional maturity are needed as researchers recognize both positive and negative self-interpretations (Cole, 1994; Northfield, 1996).

Readiness to engage in self-study also includes being prepared to closely document one's behaviors, cognitions, attitudes, and emotions. Erickson (1986) and Cochran-Smith (1999) emphasize the importance of making one's practice explicit to the extent that it becomes a text to be analyzed, reviewed, and critiqued by the researcher and others. Researchers must demystify their intentions by expressing them in writing, as the process helps researchers explore and analyze newly discovered facets in their teaching lives (Richards & Barskdale-Ladd, 1997). Careful and honest documentation is needed to realize the full potential of self-study, as it provides greater access to the cognitive and emotional aspects of teaching than other research approaches. Writing is, as L. Richardson (1994) notes, "a way of 'knowing'-a method of discovery and analysis" (p. 516). For example, Hamilton (1995) describes how self-study has helped her discover a conflict between her expressed values and her behavior. Her recognition of students' frustration over the clash between her lecturing style and her professed belief in student dialogue enables her to make major shifts in her thinking and teaching. By making their motivations and beliefs explicit, researchers enable them- selves and others to study what might otherwise remain elusive (Richards & Barksdale-Ladd, 1997).

Determining access to collaborators. Without the participation of col- leagues, researchers may have trouble recognizing contradictions and misinterpretations when they evaluate their experience, making it difficult for them to improve their teaching practice. Furthermore, producing valid knowledge via self-study requires a commitment to verifying the data (including the techniques used) and, ultimately, the interpretations drawn (Loughran & Northfield, 1998). Collaboration requires participants to articulate clearly their practices to colleagues and to submit their research decisions and actions to the examination of peers (Munby & Russell, 1994). Thus, self-study participants must determine if they have sufficient access to trusted colleagues who can collaborate with them.

In assessing their access to collaborators, self-study researchers must consider their colleagues' abilities to be both supportive and critical. The personal and revealing nature of self-study suggests that collaborators should be colleagues whom the researcher respects and can trust (Morse, 1994). The need for collaboration must not compromise the self-study researcher's willingness to reveal the self. Collaboration should facilitate completeness, specificity, and clarity in the data by requiring researchers to recall and articulate their subjective experiences to an inquisitive audience. Therefore, prior to inviting colleagues to collaborate in self-study, researchers should evaluate their abilities to share interpretations, emotions, and cognitions with those colleagues. Griffiths (1998) indicates that openness might be easiest with like-minded people. Chances for successful collaboration diminish where there are serious differences in perspective, culture, power, and skill among the collaborating parties (Morse, 1994). Yet, the researcher must also consider those colleagues' ability to communicate criticism effectively. Associates should be selected for their ability to provide perspectives that differ from those of the self-study researcher, preventing her or him from becoming too committed to a single

interpretation, and thus open to "the dangers of narcissism and solipsism" (Connelly & Clandinin, 1990, p. 10).

In evaluating which colleagues might be suitable collaborators for self-study, researchers should strive to create a group that has a common purpose, shares in discussing problems, contributes to creating solutions, and has appropriate backgrounds for the enterprise (Schoenfeld, 1999). Minimally, the group must be like-minded with respect to the purpose, potential, and challenges of self-study research itself.

Defining a focus within academic discourse. Prior to conducting self-- study, participants must identify the purpose and goals of the self-study and become familiar with existing theories that address their question(s) of interest (Cole & Knowles, 1998; Hamilton & Pinnegar, 1998). Consequently, the focus of a self-study is derived from the teacher's motivation for conducting self-study, that is, the pedagogical research question.

The self-study approach facilitates both inductive and deductive inquiry. But like any systematic inquiry, self-study must be grounded in the extant literature to ensure it is not merely personal reflection. Participants in self-study are joining an ongoing dialogue about teaching that pro- vides shared meanings and a common language with which to communicate. To make a contribution to a scholarly conversation, researchers must understand that which has come before and articulate their own experiences within the context of the ongoing dialogue. Selecting a focus of inquiry helps establish the credibility of the self-study research and serves to guide the researcher's analysis and conclusions. For example, Placier used existing theories of college grading practices as a content framework in her 1995 self-study. Subsequently, her self-study led to a better understanding of her own grading practices as a college faculty member and also contributed to the literature on college grading.

Although self-study can be used for addressing multiple aspects of teaching practice simultaneously, selecting a primary focus may in- crease the usefulness of self-study by helping to organize the efforts of the researcher and the collaborators. For example, the focus is useful in determining what elements of classroom practice are salient as collabo- rating researchers observe, document, and discuss their experiences. Since teaching improvement is an ongoing goal for self-study re- searchers, a focused approach to self-study can also be applied iteratively to address a variety of teaching issues over an extended period of time.

Fundamentally, good research is difficult, time-consuming work (Erlandson, Harris, Skipper, & Allen, 1993). Before committing time and energy to a self-study process, self-study researchers should ensure that their research questions are relevant and feasible. The significance of a problem lies in its "timeliness, originality and importance, as well as its academic and practical values" (Erlandson et al., 1993, p. 44). Selecting a focus of inquiry and examining the existing literature related to it are critical to evaluating the significance of the research questions.

In summary, before engaging in self-study, the researcher must con- duct assessments at the self, group, and community levels to evaluate self-readiness, determine access to colleagues, and define a focus within the academic discourse. Favorable conditions in these areas are necessary preconditions to choosing self-study as a suitable research approach for advancing scholarship about teaching.

Implementation Phase

Self-study researchers can select from a variety of research methodologies to address a broad range of research questions across vastly differing contexts. Yet in doing so, they must develop a mastery of various methodologies and methods, understand the work of fellow

researchers studying the same questions (Huberman, 1996), and address validation explicitly in their writing. Validation is in part established by (1) the fit between research questions, data collection procedures, and analysis techniques, and (2) the effective application of specific data collection and analysis techniques (Eisenhart & Howe, 1992). However, validation is not established merely with techniques, but "like integrity, character, and quality, must be assessed relative to purposes and circumstances" (Brinberg & McGrath, 1985, p. 13).

The selection of data collection and data analysis methods is based on the outcomes of the assessment phase, namely self-readiness, collaborators, and the focus of inquiry. Some methods of self-study expose sensitive issues, which may be problematic for those who are not yet comfortable with sharing or questioning their deeply held beliefs. Similarly, some methods of self-study are unable to adequately capture cognitive, behavioral, or emotional elements that might be the focus of study. To get at the fullest, deepest questions about teaching, it is necessary to learn about the largest possible repertoire of methods from the widest array of disciplines (Hutchings & Shulman, 1999).

Data collection methods. Hamilton and Pinnegar (1998) explain that although self-study is a fairly new approach to research, established methods from other research traditions are often employed. Self-study researchers need to explain and justify how the methods chosen allow for valid data collection. Other authors provide detailed guidance on planning and implementing various research methods. Below we provide an overview of numerous methods that have been used in self-studies to date.

Many self-study researchers use some form of narrative inquiry as a data collection method. Narrative inquiry may take many forms, including life history (Cole, 1994; Oda, 1998), autobiography (Brown, 1999; Bullough & Pinnegar, 2001; Parker, 1998), metaphors (Bullough,

1991, 1994), personal essay (Vavrus & Archibald, 1998), and critical incidents (Mohammed, 1998). Another group of methods focuses on collecting the insights of others who participate in the classroom context. These methods include focus groups (Squire, 1998), classroom observation (Selley, 1998), student questionnaires (Grunau, Pedretti, Wolfe, & Galbraith, 1998), interviews (Loughran & Northfield, 1998; Perselli, 1998; Squire, 1998), and journaling (Wilcox, 1998). Finally, several methods emphasize generating relatively objective documentation via artifacts and transcripts. These include faculty course portfolios (Gipe, 1998), E- mail transcripts (Upitis & Russell, 1998), audiotaping (Oda, 1998), and videotaping (Cunningham, 1998; Tidwell & Heston, 1998).

Data analysis methods. Data analysis tools are as wide-ranging as data collection methods. Data analysis methods must be appropriate for the type of data collected and must uphold the notion of validation dis- cussed earlier. At issue are the inferences drawn from the data given the methods applied, not whether the data in themselves are valid or invalid (Hammersley & Atkinson, 1983). In analyzing their data, self-study re- searchers must look for both frequent and rare events and remain open to disconfirming evidence.

Regardless of the process chosen, self-study researchers must articulate the steps taken to analyze the data in such a way that the conclusions are believed. Our literature review suggests that few self-study re- searchers adequately discuss the reflective processes they use to analyze data, and few use established techniques such as content analysis. One exception is Kelsay's (1989) study of reflective teaching. She acknowledges the impossibility of reporting all the qualitative data collected, thus creating the need "to provide the evidentiary warrant for assertions in the form of vignettes or particular descriptions that portray the actions and narrative

of the informants in the study" (p. 7). Kelsay demonstrates care in articulating her attempts to avoid fitting data into preexisting theories prior to developing the theoretical framework.

In sum, a variety of methods are available for data collection and analysis in self-study. Prior to selecting data collection and data analysis methods, research questions must be clearly identified, theoretical   bases of inquiry must be examined, and the existing research stream must be considered. Self-study researchers can respond effectively to questions about the validation of their studies only if they carefully choose and implement their research methods.

Dissemination Phase

Scholarship should be public, susceptible to critical review and evaluation, and accessible for exchange and use by other members of one's scholarly community (Shulman, 2000). To participate in the dialogue of the academic community, self-study researchers need to articulate the findings of their research for others, identifying how the results con- tribute to the academic discourse while addressing any limitations of the study. For self-study to be a legitimate tool for knowledge generation, those involved have to define and connect their work with broader theoretical conversations in the academy. Self-study researchers can con- tribute to the canon of teaching knowledge by discussing the theoretical underpinnings of their research and sharing insights gleaned from the content of their studies. Researchers must attend carefully to context and setting; otherwise, the reader will struggle to make connections, and conclusions will inevitably lack grounding (Bullough & Pinnegar, 2001).

Our examination of the self-study literature indicates that self-study is conducted by university faculty primarily for the purpose of teaching improvement. Self-study researchers complete their research processes by incorporating the knowledge they have gained into a plan for teaching development (Loughran & Northfield, 1998; Sagor, 1992), and when these

researchers subsequently seek to publish their work, it appears that only then do they recognize and attempt to address how the larger academic community could benefit from the knowledge created. Unfortunately, post hoc recognition of the value of the findings fails to ensure that epistemological and methodological issues are considered at the onset of the research process.

To capture self-study research's potential for expanding the scholarship of teaching, we advocate that faculty members make publication of their findings a primary goal of self-study research. By planning for this outcome from the beginning of the research process, self-study can be conducted with sufficient care to withstand the critique of the academic community. To this end, Cole and Knowles (1998) encourage researchers to explicate the goals, intentions, and processes of their work for public appraisal. Until self-study research is more widely represented in academic discourse, self-study research reports must include thorough discussion of validation efforts. At minimum, self-study research documentation should include an audit trail and discussion documenting the adequacy of data collection and analysis (Maxwell, 1992; Miles & Huberman, 1994; Morse, 1994) and provide evidence of the thoroughness and comprehensiveness of the understandings (Madison, 1988).

Finally, self-study research is an iterative process where discoveries prompt new research questions. The knowledge gained and disseminated from a research project may impact the beliefs and practices of the researcher, his or her collaborators, and other teachers in the discipline, creating new directions for research. The process of disseminating the results of self-study research creates a feedback loop that spurs re- searchers to begin self-study anew.

Conclusion

Collaborative self-study research holds significant potential for creating valid, useful pedagogical content knowledge as well as for improving teaching practice. Although most self-

study research is currently conducted in the field of education, the process is appropriate and accessible to faculty members in all disciplines. When faculty engage in self-study to advance theoretical knowledge, they connect their work with existing knowledge and theory in the field, engaging in "praxis" (Bernstein, 1985, p. 223) that is at the core of knowledge creation.

The process of self-study research facilitates faculty development in both teaching and research. By engaging in self-study research, faculty members address different epistemological and methodological questions and utilize new data collection and analysis methods, expanding upon the research skills they already possess. Further, faculty develop new expertise in teaching. Most doctoral education emphasizes acquiring disciplinary knowledge and research skills, with relatively little emphasis on teaching practice and pedagogy. When faculty members treat teaching as a subject of inquiry and examine their beliefs, assumptions, and teaching experiences, they step outside themselves to gain new perspectives of the teaching act (Cochran-Smith, 1999). Although not a substitute for formal pedagogical training, self-study research provides an alternative means of faculty development.

Academe has often undervalued scholarly work on teaching. Although research on other phenomena is recognized and rewarded, teaching often is considered as a private act between faculty and students (Greene, 2000), making faculty's teaching a practice that is neither studied nor discussed. Using the collaborative model proposed in this article will assist in establishing self-study research as an accepted mode of inquiry and further the dialogue on teaching in higher education.

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FIG. 1. A Three-Phase Process Model of Collaborative Self-Study

Assessment Phase	Implementation Phase	Dissemination Phase
The teacher-research is open to honest critique.	Understand the criteria for the validation of research.	Communicate findings to academic community.
There are associates with whom to collaborate.	Choose appropriate data collection and analysis methods.	Improve one's own teaching practice.
The research question contributes to pedagogical knowledge.	Maintain integrity through data collection and analysis.	Develop new research questions in light of current findings.