ABSTRACT
                CaseNET is a Web-based learning environment where teachers
utilize the latest technologies to form communities of professionals who hone
their decision making skills via "slice-of-life" cases. Students involved
with CaseNET physically meet during regularly scheduled times at a designated
site. Each site is staffed with an instructor, or team of instructors who use
case methodology to guide the students' participation. The online component
of CaseNET is comprised of the cases, discussion groups, journals and
reference materials. Reflection encourages teachers to think like
professionals through an increased power to reason. Problem-solving in this
capacity is a direct result of teachers thinking about teaching as a
composite activity involving issues, perspectives, and possible courses of
action, and making decisions based upon the best perceived consequences. What
emerges from this view of reflective problem-solving is the five-step process
for analyzing cases around which CaseNET is centered. The steps in this
process include: perceiving issues, problems, dilemmas, and opportunities;
recognizing values and perspectives that drive actions; applying appropriate
knowledge; suggesting an action one might take; and examining the possible
consequences. (Contains 18 references.) (AEF)

CaseNET: Teaching Decisions Via a Web-Based Learning Environment

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In the recent National Council for Accreditation of Teacher Education (NCATE) report *Technology and the New Professional Teacher: Preparing for the 21st Century Classroom* NCATE president Art Wise comments:As technology moves from the periphery to the center in P-12 schools, it should also move from the periphery to the center in teacher candidate preparation. We must all work together to help ensure that tomorrow's teachers are prepared for the challenges of teaching in the 21st century. (pg. 2)

The Office of Technology Assessment (1995) suggested that the successful utilization of technology in classrooms resides primarily in the hands of teachers, and that the training of these teachers is vital for its success.

State and federal licensure agencies advocate standards for the integration and assessment of technology and teacher education. Such advocacy from policy- and decision-makers at all levels of the American educational system certainly may be advantageous to teacher educators, but only when one understands that the true educative value of current technologies such as the World Wide Web lies more in their use as a social medium for enabling effective decision-making, than as another productivity tool. Historically, most of the emphasis on technology within teacher preparation has historically been skills- and competency-based (OTA, 1995), with little context or foundation for its use in the act or profession of teaching.

Cases and Teaching Decisions

Generally speaking, classroom teachers make approximately 60 teaching decisions per hour (Jackson, 1968; Hunt, 1971). Each decision requires the teacher to possess dynamic skills of analysis and a keen sense of situation. Classroom teachers are engaged constantly in an environment where success requires fast, contextually-relevant decisions. The dynamic nature of "thinking as a teacher" is a professional attribute which demands flexibility, analysis, and perspective. Kennedy (1990) suggests that the approach historically taken to prepare teachers for making such decisions has consisted of a two-pronged approach: first, the development of a codified, theory-laden knowledge base, and second the development of useful decision-making skills for situation-based reasoning and analysis. Unfortunately, feasibility issues have generally dictated that these decision-making strategies be conveyed via a more formalized setting-one that lacks connection to any

real context-resulting in what some refer to as "inert" knowledge (Risko, 1991). As Bruner (1996) states: "The challenge is always to *situate* our knowledge in the living context that poses the 'presenting problem,'" (pg. 44). The use of *cases* may offset such concerns by offering a method of preparing teachers that most closely approximates the real-life environment of rigorous decision-making opportunities that classrooms afford.

A *case* is a situation-based narrative that requires an analysis of context and an understanding of the idiosyncrasies associated with real-world practicalities, presented to prompt a suggested action or implementation. The case study approach-though not an entirely new concept (Merseth, 1991)-has recently gained prominence in teacher preparation (Herbert, White & McNergney, 1992; McNergney, Herbert & Ford, 1993). Case-methods provide avenues through which the creation of a knowledge base and of an environment for contextual reasoning can be fostered. A case-study method challenges students to examine theories they have learned or are learning and to apply these theories to situations they may encounter in the future. Application of this method in preservice teacher preparation has been shown to bridge the gap between theory and practice (Sudzina & Kilbane, 1992). Although it is impossible for a case to address completely the complexity in teachers' lives, case methods may provide realistic environments through which various decision-making tactics can be applied and investigated (McNergney et al., 1994).

One of the advantages of using teaching cases-specifically, using teaching cases as opportunities for analysis and contemplation-is the ease with which a case fosters *problem-solving and decision-making skills* (Merseth, 1996). These skills include the ability to analyze situations and the corresponding multiple perspectives of those

involved. A teaching case can assist the teacher to "think as a teacher would think" given the parameters of the case situation. Cases influence problem-solving and decision-making skills through the provision of vicarious situations through which educators can gain multiple perspectives and develop skills of analyzing situations from the viewpoints of those involved. Cases provide an excellent arena for the testing of ideas against given conditions-that is, conditions generally agreed upon as critical attributes of the given situation as depicted in the case scenario. Finally, cases used as opportunities for analysis and contemplation encourage the use of technical skills and critical knowledge which are unique to the professional educator. In these ways, the teaching case can assist the student to more ably "think as a professional" given the parameters of the case situation.

CaseNET: Web-based Learning through Cases

CaseNET is a Web-based learning environment where teachers utilize the latest technologies to form communities of professionals who hone their decision-making skills via "slice-of-life" cases (see http:// casenet.edschool.virginia.edu, for instructions on receiving a guest username and password). Students involved with CaseNET physically meet during regularly scheduled times at a designated site. Each site is staffed with an instructor, or team of instructors, who use case methodology to guide the students' participation. The online component of CaseNET is comprised of the cases, discussion groups, journals and reference materials. The value of CaseNET lies in the successful integration of teacher development, the Web, and case methodology.

The characteristics of Web-based technology lend an element of realism to the use of case-study methods in teacher education that is otherwise unattainable in print materials. For one, the Web allows for a highly interactive environment-enabling more meaningful transactions among people than any other technology before. Teachers can work together through the WEB, unhindered by space and time boundaries. The Web provides a true multimedia experience-displaying information in combinations of text, video, and sound. This has been an important factor in the successful combination of case-study methods and Web-based technologies. The Web provides an environment through which multimedia cases-those combining various media to provide a richer representation of the situation at hand-are more easily provided. Multimedia cases have high face validity (Herbert & McNergney, 1995). The situations portrayed in the cases are realistic and close approximation of real-life. Therefore, the combination results in an environment which is more accessible and truer to real-life than any other medium through which real-life approximations may be offered.

CaseNET matches the inherent characteristics of certain types of communication tools with learning activities deemed useful for teacher development. Instructors are using technology with an understanding of what it is that students need to do to continue developing as professional educators and also with a clearer conception of what role they, as instructors, play in such an environment. For example, teamwork is an integral component of the CaseNET experience, since decisions in schools are rarely made in isolation. Participants are encouraged to cooperate within teams and to compare analyses across teams in search of solutions to real-life educational problems. In reaction to one of the cases, one teacher commented:

> The teachers in this case didn't always agree on ideas and ways of carrying out projects. This case showed me that teachers must work together and compromise on projects like this and let the students make many decisions in order for it to be successful.

Teachers are encouraged also to forge relationships with participants from other CaseNET sites and to use these relationships as further stimulus for continued reflection concerning case issues. Another student suggested that CaseNET "helped me in self evaluation, self-awareness, and in peer interaction. I find in conferring with other teachers regarding a student or issue, I am much more aware of the perspectives, side issues, etc." In large part, both student and instructor are actively engaged in sharing, questioning, and directly experiencing the consequences of making teaching decisions.

We believe that masterful teachers reflect on life in classrooms. Reflection encourages teachers to think like professionals (Kleinfeld, 1992) through an increased power to reason (Sprinthall & Thies-Sprinthall, 1983). Problem-solving in this capacity is a direct result of teachers thinking about teaching as a composite activity-involving issues, perspectives, and possible courses of action-and making decisions based upon the best perceived consequences (McNergney et al., 1994). What emerges from this view of reflective problem-solving is the five-step process for analyzing cases around which CaseNET is centered. The steps in this process include: perceiving issues, problems, dilemmas, and opportunities; recognizing values and perspectives that drive actions; applying appropriate knowledge; suggesting an action one might take; and examining the possible consequences (McNergney & Medley, 1984; McNergney et al., 1993).

Issues. Cases are grounded in core issues and relevant facts. These issues are identifiable and provide the foundation for the interpretation of that particular situation. Issues may take the form of problems, dilemmas, or opportunities. Problems are issues that one may conceivably solve. Dilemmas are unique problems that have no apparent solution and, therefore, require some type of coping mechanism. Opportunities are simply occasions for improving on a situation which already appears to be

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working well, as is. The value of identifying the salient issues contained within a case is perhaps best captured in the following student statement:

> While students in other courses were making bulletin boards, we were dealing with real-life situations, ones that we will encounter in the field. This course helped me to realize the many problems that occur in schools and ways to handle those problems.

Teachers make decisions largely based upon the issues they perceive as timely and important. However, what constitutes "timely" and "important" depends upon situation and context. Therefore, merely identifying categories of issues is insufficient. What is necessary is a recognition of the types of skills necessary to distinguish important from relatively inconsequential. CaseNET provides an environment for honing such skills. As one student stated: "This course presented me with many new issues and helped me develop skills for how to deal with them."

Perspectives. One reason for variability of what may be perceived as salient issues within each case is the fact that various perspectives play a key role in deciding which issues rise to the forefront and which ones are left, for the time being, unattended. One's perspective is often heavily informed by the beliefs one holds about students, about teaching, and about the essential qualities of the content at hand. Teachers make decisions largely based on the interactions of these beliefs. For this reason, an essential component of the case analysis process is an identification of the perspectives and values held by each stakeholder with the case. In multimedia teaching cases, these stakeholders are often students, parents, principals, and other teachers.

Cases provide exposure to various school settings and to the myriad perspectives which are naturally associated with each situation. In so doing, students gain the ability to generate a mental image of each participant's vantage point which the student may use to develop a more robust plan for action. CaseNET participants can draw on the critical perspectives of experts, as well as the professional knowledge of their peers through web-based discourse and repositories of information. These activities are deemed important to teacher development, and most if not all are absent from the more formal, decontextualized approaches of preparing teachers. As one student commented, "To see how people reacted to the situations in the case gives us a running knowledge of how things could happen and what we could do to change it."

Knowledge. Knowledge is the component that distinguishes teachers as a community of professionals who know things that others do not. This professional knowledge is informed by practice, theory, and research that teachers may draw from and bring to bear upon the problems represented

in each case. Such knowledge provides the foundation and support for the actions one may suggest as appropriate for addressing these problems. Knowledge resides in multiple sources. Printed materials, previous experience and theoretical pieces-may all be valuable resources for making informed decisions. The current that runs throughout each is the fact that knowledge is valuable when it is shared among like-minded peers. Solving cases in teams provides an environment where such peers may benefit from the knowledge held by each individual. Bruner (1997) suggests that: "There are things known by each individual ...more still is known by the group or is discoverable by discussion within the group; and much more still is stored somewhere else-in the 'culture'..." (pg. 52). We agree. For this reason, CaseNET provides several avenues through which participants can communicate and share professional knowledge-through discussion groups, journals, videoconferencing, and other social technologies.

Action and Consequences. At some point, teachers are required to *do* something in their classrooms. The five-step process for case analysis suggests that, after considering the issues, perspectives, and appropriate knowledge, one might suggest a projected teaching action. In other words, if you were this teacher in this situation, what might you do? It is important to understand that, in most situations, there does not exist one "right" action. Instead, it is quite possible that there may be many defensible courses of action that one would possibly choose to address the issues embedded in a particular case. Such an understanding frees the teacher to begin considering varying courses of action she *might* take, given the situation presented in the case. Pragmatic teachers consider the likely consequences of their projected actions. This consideration consists of both the projected positive and negative repercussions of chosen actions. As teachers become more experienced as professional decision-makers, they become more aware of the fact that not all actions turn out well, and not all decisions have the intended results. It is critical, therefore, for developing teachers to constantly remain aware of the potential consequences of their actions in real-life teaching situations.

Conclusion

The elements of the five-step process described above should not suggest that each situation may be addressed in such a linear fashion. Indeed, context often dictates that one begin at one end and progress in the opposite direction, or even begin in the middle and jump around. The journey from one end of the decision-making process to the other is rarely a direct one, and effective utilization of the process with teaching cases must reflect this as well. We only suggest that, in order to foster a more meaningful system of making teaching decisions, both inservice and preservice teachers take into account each of the five factors delineated in the process. CaseNET is intended as an environment in which developing teachers may learn to "play the

game," within the relatively safe confines of a case-study before making decisions in actual real-life situations. As one student recognized: "Everything we did in the course we will take with us to our future classrooms." Another student offers the following:

> The most valuable part of the course is the interaction with preservice and other inservice teachers. Our class discussions and on-line chats provided the most stimulating experiences. And it is such an eye-opener for preservice teachers and equally educational for inservice teachers to "see" the different ways each of us views a classroom situation. This course certainly offers a wealth of information on the subjects of teacher thinking and expert and novice differences.

A recent report sponsored by the Office of Educational Research and Improvement (OERI) suggests that the use of technology in schools may be a catalyst for the change that is occurring through a concerted focus upon the professionalization of teachers (SRI International, 1996). What we offer with CaseNET is an environment where this professionalization, fostered by case analysis and interactive technologies, is displayed in the quality of the decisions participating teachers make.

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