
In-service and Pre-service Teachers' Perceptions of a Web-based, Case-based Learning Environment

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ABSTRACT Understanding teachers' perceptions of a web-based, case-based learning environment provides insight into the effective development and deployment of such conditions for preparing educators. *CaseNET* - a web-based, case-method teaching environment for professional educators - serves as both a source of information as well as a space for inservice and preservice teachers to interact with one another and to contemplate current educational issues as they relate to real-world teaching. A qualitative analysis of over 400 participants was conducted and results provided. Participants perceived *CaseNET* as an opportunity to engage in professional development via exploration, reflection, collaboration, and hands-on interactions with authentic teaching tasks. Results suggest that the combination of cases and technology provides a valued opportunity to engage developing teachers in professional behaviors.

Introduction

CaseNET - a web-based, case-method teaching environment for professional educators - uses the World Wide Web as both a repository for course materials and as a medium for communication among a connected community of professionals in the United States (USA), Canada, and Norway. The intention of *CaseNET* is to: (1) help pre-service and in-service educators develop and refine their abilities to recognize, analyze, and address professional problems through the use of case studies, (2) promote collaboration and group problem solving among professional educators, (3) model the use of instructional technology to support student-centered learning, and (4) provide participants with opportunities to develop technical skills. Course evaluations gathered from 431 students during 6 semesters provide information about the success of *CaseNET* in meeting proposed instructional goals and the utility of the learning activities and web tools

CaseNET provides. In the process, we provide a detailed description of the *CaseNET* environment that may prove useful for the subsequent development of similar learning environments. We examined participants' perceptions about the usefulness of *CaseNET* in developing professional skills by analyzing statements concerning community, teamwork, technical skills, and course design.

The Use of Cases in Teacher Education

Case studies are situation-based narratives that require an analysis of context and an understanding of the idiosyncrasies associated with real-world practicalities, presented to prompt a suggested action or implementation (Shulman, 1992; Merseth, 1996). Case studies come in various forms. They are sometimes written in first-person narrative, but they often present a third-person omniscient view of a situation. They might tell the story of a particular student or present the intricate system of issues woven into the context of a classroom or school. Educators can use cases as 'best practice' scenarios or as 'slices of real life' in the classroom. That is, cases may represent teaching both as it is, as well as how it should be.

Many teaching cases used in teacher preparation programs are text based (see, for example, Cooper, 1995; Greenwood & Parkay, 1989). Recently, newer technologies have been used to create case studies and communicate the intricacies of classroom practice with various media. For example, Herbert & McNergney (1996a, 1996b) offer cases about multicultural education in various locations around the world in both digital video as well as mixed-media (video, hypertext, graphics) on the World Wide Web (Kent et al, 1997; Kent, 1998; McNergney & Herbert, 1998; Kilbane et al, 1998). It appears teacher educators are investigating the use of multimedia cases as a way to use problem-based learning and technology in new and meaningful ways with developing teachers.

Technology in Teacher Education

In the USA, the National Council for Accreditation of Teacher Education (NCATE) recognizes that teachers 'hold the key to technology use in the classroom' (NCATE, 1997, p. 4) and recommend steps be taken to improve teacher preparation and continued professional development. These steps include requiring schools of education to have a vision and plan for the use of technology that reinforces a conceptual knowledge of teacher education, and encouraging each school to explore the use of modern communication technology in carrying out its various functions (NCATE, 1997).

Concern about the technological preparation of teachers, however, is not confined to teacher preparation programs. Current research on professional development in American schools performed by numerous

popular magazines (Siegal, 1995) and reputable research organizations reveals that few teachers receive training on how to use technology, and even fewer receive information about how to integrate technology into their instruction (CEO Forum on Education and Technology, 1997; Zehr, 1997; NCATE, 1997; Office of Technology Assessment, 1995). Reports issued by the Holmes Group (1990) and the Carnegie Forum on Education and the Economy (1986) advocate the use of both technology and case studies in the training of pre-service and in-service teachers. Several examples of their integration have been researched (Lacey & Merseth, 1993; Nelson & Smith, 1994; Spiro et al, 1992; Gilbert & Hostetler, 1998) and found successful in various contexts.

Description of *CaseNET*

CaseNET (<http://CaseNET.edschool.virginia.edu> [1]) is both a set of courses for educators and the web site that supports them (see also Herbert, 1999). Learning experiences in each course help pre-service and in-service educators develop their abilities to recognize contemporary issues in education, analyze the implications of these issues on classroom practice, and make decisions about how they might be dealt with in a contextually sensitive manner. Even though the *CaseNET* courses use many web-based technologies to support student learning, it is not a distance education course in the commonly used sense of the word. While students interact with others using synchronous and asynchronous on-line communication, a majority of their participation in the course occurs in a cohort group with others at their own site. It might be more accurate to think of *CaseNET* as a hybrid of traditional teaching and distance education models. The various components of *CaseNET* are described in the following sections:

Course Design and Implementation

The titles of the courses – ‘Standards of Learning and Assessment’, ‘Teaching Across the Content Areas’ and ‘Using Technology to Solve Problems in Schools’ – indicate the focal concerns of each course. Although they share a common syllabus, the assigned readings, selected course materials, focus of class discussions, and final project assignments differ. Instructors are encouraged to adapt the syllabus and activities to meet the needs of their own students. A team of professors and graduate students at the University of Virginia’s Curry School of Education supported by The Hitachi Foundation oversee the design of the course syllabus, selection of readings, creation of support materials, development of the web site, and provision of instructional and technical support.

Audience

CaseNET was originally developed as a single university course for pre-service educators in graduate and undergraduate teacher preparation programs. Over the course of 7 academic terms (Spring 1996–Summer 1998), the ‘typical’ *CaseNET* participant has changed. The number of in-service educators from public school districts in Virginia and other states has grown each semester. School districts’ increased interest in technology training for K-12 teachers (that is, pre-college, from kindergarten upwards) and the need for credit-bearing professional development opportunities are most likely the reasons that the percentage of pre-service *CaseNET* participants has changed from 98% in the Spring of 1996 to 20% in the Spring of 1998. Geographic diversity is also represented in the *CaseNET* participant population. Educators from three countries, 15 universities, and 10 school districts have participated in *CaseNET* since 1996. Participants in *CaseNET* are able to receive undergraduate, graduate and professional development credit.

Course Structure

Students who participate in the *CaseNET* courses meet in a classroom at each geographic site with their instructors once a week for approximately 14 weeks. However, the length of individual class meetings and course timespan are often adapted to meet the individual needs of the *CaseNET* sites. Summer sessions often condense the course syllabus into a 2-week time period. The class size of *CaseNET* sections varies from 8 to 32 students, but the average class size is around 18. In most cases, instructors ‘team teach’ the course with another colleague. Instructors are university professors or local school district personnel. They receive training in instructional methods and technical details from the *CaseNET* project team at the University of Virginia during a 2-day workshop. Although levels differ, all *CaseNET* instructors are experienced K–12 educators.

Course Syllabus

The *CaseNET* syllabus promotes the use of technology to perform different kinds of tasks. Primary components of the course syllabus are discussed below.

Case Studies. The analysis of case studies with a five-step framework is the pedagogical axis of the *CaseNET* syllabus (for a description of the five-step framework, see McNergney & Herbert, 1995; Bronack & McNergney, 1999). The case library contains 15 cases in various forms. Most are presented in hypertext with links to photographs, audio, and video files. Several are completely video based and can be ‘streamed’ directly from the *CaseNET*

web site. The educational contexts, subject areas, grade levels, geographical locations, and educational issues addressed in the cases represent many classroom environments. Each case study presents learners with a realistic and complex classroom situation based on factual occurrences in schools. The cases offer learners opportunities to 'practice' the recognition and solving of educational problems.

Critical Perspectives. Several analyses by individuals who have expertise or informed views on the cases are provided in video and hypertext format on the web site. The writers and speakers are specialists in issues such as: bilingual education, international education, urban education, journalism, and Native American culture. The critical perspectives are associated with those cases in which the issues of expertise are prominent. Information gathered from these perspectives is discussed in class and through on-line discussions.

Discussion Groups. Students use threaded discussion groups to post their ideas and communicate with peers and instructors from other institutions. Each case in the *CaseNET* library has its own discussion group. Students share ideas in the discussion group about the issues and perspectives presented in the case and suggest knowledge, actions, and consequences. Students also share their ideas about professional perspectives in discussion groups created for this purpose. The discussion groups create a forum for students to exchange insights and ideas, any time from any place.

Course Readings. Readings are provided in HTML format on the *CaseNET* site to add to participants' professional knowledge base. Site instructors can assign readings from those provided, or choose to provide their own. Students are encouraged to read the readings on-line, but often print their own copies. The copyright law of the US (United States Copyright Code, 1999) governs the making of reproductions of copyrighted material, including photocopying, printing, and downloading. Any individual who uses such a reproduction for purposes in excess of 'fair use' may be liable for copyright infringement. Course readings are removed and updated each semester in order to comply with laws concerning fair use.

Virtual Library. The *CaseNET* virtual library provides students access to on-line resources such as the Educational Resources Information Center (ERIC) databases, links to their own university library's web site, or access to web sites related to *CaseNET* case studies. An interactive form allows students to ask the 'Virtual Librarian' questions about research. An archive of 'Frequently Asked Questions' from former *CaseNET* participants is another resource provided by the Virtual Librarian.

Video Conferencing. The discussion of cases is not confined to on-line asynchronous conversations. Cross-site video conferencing discussions with *CU-SeeMe* software allow students to converse about the cases. Scheduling for these real-time discussions is supported through an on-line interactive calendar. Teams of students from any *CaseNET* site, regardless of time zone, can use the calendar to schedule times to connect. Students use video conferences to acquaint themselves with their colleagues and to converse about their case analyses. *CaseNET* provides a reflector site – i.e. where all the participants connected may receive any of the other participants' video and audio – for all participants who want to video conference in groups.

Biographies. Students and instructors from each *CaseNET* location submit autobiographies and photos, which are posted on the web site. Email addresses are posted along with these biographies to facilitate interaction and communication among students.

Journals. Students keep journals of their ideas about course discussions and readings in on-line, password-protected journals. They enter and save their ideas but can revisit entries at any time or print them out. Course instructors are notified automatically by email when students save an entry. They can choose to review a student's entry with special instructor access if given student permission. Some *CaseNET* instructors use this feature to engage in more private communications with their students. Often, students use their journals as a tool for reflecting on their *CaseNET* experience, or as an initial 'sounding board' for their individual analyses of the cases they experience throughout the course.

Tutorials. Various hypertext tutorials exist on the *CaseNET* site to provide participants with information about how to use Internet resources, interact with various *CaseNET* features, and use recommended software. Tutorials provide support for learners with differing levels of technological sophistication. They are structured as 'on-demand' resources – that is, they are available at the moment the information is needed, and the student can proceed through the tutorial independently. The tutorials provide for more direct support on skills students are learning incidentally through participation in *CaseNET*. They include: 'How to Navigate this Site', 'How to use *CaseNET* Discussion Groups', 'How to Use the *CaseNET* Calendar', 'Using Your Journal', and 'How to Use *HyperStudio*'.

Case Contest. Midway through the semester, a new case study is posted to the site. Students are allotted 6 hours and work in teams of three or four at each location to analyze the case. Each team posts their 5-page analysis on the *CaseNET* site. Each analysis is stripped of all identifying characteristics, and sent to judges. The judges – who have included education journal

editors, principals and former *CaseNET* instructors – rate case analyses with a rubric, making comments about analysis, practicality, and style. The judges' ratings for each team analysis are posted under an assigned number (to ensure confidentiality) to allow teams to read and consider one another's analyses.

Plenary Session. A *CaseNET*-wide on-line plenary session occurs after contest case analyses are submitted. An expert on the issues presented in the contest case is invited to analyze the case and to address each of the *CaseNET* sites via a live broadcast from Charlottesville. *CaseNET* plenary session speakers have included: US Assistant Attorney General Reginald Robinson, Former Governor of Connecticut Lowell Weicker, Eric Wee of the Washington Post, David Cordts of the US National Association of Secondary School Principals, and Cheryl Lemke, Vice-President of the Milken Exchange on Technology and Education. *RealVideo* technology is used to provide *CaseNET* sites with a color, live Internet broadcast. *CU-SeeMe* technology in turn provides the speaker with a view of his or her listeners. The speaker first presents an analysis of the case and then responds to questions posed by the viewers. Following the question and answer session, *CaseNET* sites 'break out' into small groups to continue the discussion on several *CU-SeeMe* reflector sites.

Final Project and Project Database. A choice of several final projects exists for *CaseNET* students. Students may choose to:

- write a curricular unit for their age level and subject area;
- write a case study that might be used by students;
- write a case study that might be used by other educators; or
- create a problem-based learning activity called a WebQuest (Dodge, 1997).

Some students produce their final project as a word-processed document, but others use *PowerPoint*, *HyperStudio*, or HTML. Students submit their final projects to a database where they are automatically indexed by grade level and audience – for example, 'K-6, teachers', or '9-12, students'. The project database is accessible to all current and former *CaseNET* participants.

Instructors' Notes. This section of the site is accessible to instructors only. They have a dedicated discussion group where they can ask questions of each other or the *CaseNET* team, discuss teaching techniques, or engage in other peer-building discourse. They can also find tips which help them prepare for each class session, links to the course reading library, teaching notes for how to work with particular case studies, and lists of questions they might ask students about assigned readings. Software needed for

various course activities – including *CU-SeeMe*, *RealVideo*, and recommended web browsers – is available for downloading from this area of the site.

CaseCentral Administration

This area of the site is restricted to the *CaseNET* project team. Development team members have access to web-based tools constructed so that complicated tasks can be more easily performed on-line. For example, team members can access an automatically generated listing of course participants, archive discussion groups, or automatically synthesize judges' comments from the case contest analyses. The CaseCentral Administration section provides an accessible means for quickly and efficiently conducting 'housekeeping' activities without having to access the central server and do these tasks manually.

Security

CaseNET confines access to those participating in the course. Access to materials and interactions are password protected and activity logs are monitored for breaches. *CaseNET* also provides levels of access within the site. For example, students are not allowed access to instructors' materials, and instructors are denied access to CaseCentral Administration sections. Measures preventing those not enrolled in the course from accessing the course materials and discussion groups are meant to encourage a safe, collegial environment for participants.

Method

We used the constant comparative method (Guba & Lincoln, 1989; Strauss & Corbin, 1990) to determine themes and patterns of thinking about various course components. We gathered these through the open-ended 'comments' section of an end-of-course evaluation form available to participants via the *CaseNET* web site. These comments were gathered from those in-service and pre-service teachers who participated in *CaseNET* over the course of 6 semesters (1996–98). Approximately 45% of participants submitted comments (N=431); therefore, we can assume that the results gathered are indicative of the in-service and pre-service teachers who participated in *CaseNET* during the period observed. All comments were used – some divided into sections according to emerging themes. From a set of 559 thoughts offered by the in-service and pre-service teachers, we formulated 6 overall themes. Later, we identified 35 subcategories within these themes. Table I provides a synthesized description of these themes and the subcategories that support each theme.

Theme	N	%
Course expectations and worth	167	30
General support & expressions of course worth (113)		
General suggestions for improving course (27)		
Thanks or appreciation for <i>CaseNET</i> team (10)		
Not what participant expected (10)		
Interest in continued involvement (7)		
Development of professional skills	79	14
<i>CaseNET</i> prepares for teaching (36)		
Course promoted reflection and self-discovery (22)		
Helped participant see perspectives (14)		
Course beyond career development level (7)		
Course characteristics and components	59	10
Positive comments about instructors (35)		
More time for activities – required a lot of time (11)		
Requesting more feedback from instructors (5)		
Bad timing of activities in syllabus (3)		
Wasted time or too much time spent (3)		
Site implementation (1)		
Negative comments about instructors (1)		
Use of cases and case methods	68	12
Support of analyzing cases and case studies (36)		
Application of case study method or project (12)		
General support of case methodology (11)		
Suggestions to improve case studies (9)		
Teamwork and Community	81	15
Positive about working in teams (38)		
Support for global collaboration (23)		
Suggestions for improving teams (13)		
Comments about the case contest (6)		
Negative comments about working in teams (1)		
Technology usefulness, application, and skills	105	19
Learned technical skills/increased knowledge (23)		
Video technology – negative comments (12)		
Video technology – positive comments (17)		
Frustration with local technology (10)		
Frustration getting on-line (9)		
General positive feelings about technology (8)		
Frustration with <i>CaseNET</i> site (8)		
Increased comfort with computer (7)		
Application of technology (7)		
Virtual Librarian – wished they'd used it (4)		

Table I. Synthesis of open-ended student responses (N=559 comments; N=431 students).

Findings

Course Expectations and Worth

As we began our analysis, we were particularly interested in understanding whether or not participants' perceptions of worth and expectations matched the overall *CaseNET* goals. We discovered that 123 comments (20%) were statements that supported the course and indicated that it had value. Students also indicated they would recommend the course to others. They communicated that they felt challenged, for example: 'I truly appreciated the

way the professors conducted the class. I was not stressed out, but definitely challenged.' Another said: 'I loved the open-ended nature of the final project assignment because I created something of tremendous use to me and my students and learned so much more than I thought possible. I really stretched.'

An additional 10 comments (2%) indicated that the course was not what they expected. 'I probably came into the course with the wrong expectations. I was not interested in learning how to use case studies in my classroom. I wanted to learn how to use the Internet. For my purposes, assignments where one had to go out on the Internet and look for various information would have been much more useful.' Seven students (1%) indicated that they would be interested in continuing their *CaseNET* experience and that they would utilize the site resources (project database and Virtual Librarian section) in the future.

Development of Professional Skills

Some students revealed that they enjoyed case analysis (N=11, 2%) and said that it provided them with opportunities for self-reflection (N=22, 4%). Participants also felt that their knowledge of case analysis would help prepare them for teaching or help them in the classroom (N=36, 6%). One commented: 'The case analysis approach has provided me with another tool to solve complex issues.' Another student said: 'I really liked the analyzing of the case studies, I am now able to recognize perspectives and issues more readily and have learned from them.'

Several comments from 14 students (3%) indicated that interaction with peers and the case analysis process helped them to 'de-center' – that is, to reflect on issues from multiple points of view. One student suggested: 'Not only have I picked up more interpersonal skills, I have learned to see things from others' viewpoints. Feedback from others was appreciated and valued.' Another said: 'The groupwork was very rewarding, it is always good to get feedback from other members. They always see what you didn't see, so your analysis is much more thorough.' A few students felt the course was too demanding, with seven (1%) expressing a concern that the course was above their stage of professional development. As one pre-service teacher stated: 'I have not had the training to know how to analyze the problems that came up in the case studies. I think it is a good program for teachers who are already in the field.'

Course Characteristics and Components

Perhaps one of the most useful components of the *CaseNET* structure is the availability of an on-site facilitator. Instructors' knowledge about technology and case analysis helped students in multiple ways. One student commented:

‘The most beneficial part of the course was when [our instructor] showed us new technology applications.’ There were 35 (6%) comments praising site instructors for creating an environment conducive to learning, analysis, teamwork and self-reflection. Instructors were lauded for making students feel ‘un-threatened’ by technology. One student mentioned that their instructors’ lack of technological sophistication was beneficial, saying: ‘I enjoyed the instructors of this course. They were not “computer nerds” and they did not try to act as if they were.’

There were some complaints about the types of learning tasks. For instance, 11 (2%) students suggested that there was insufficient time to cover some topics in depth. In some instances, participants shared their frustration over challenging new technology, as one commented: ‘Working with my team was probably the most beneficial aspect of the whole experience. We “suffered” together through the whole *CaseNET* experience.’ In some instances, both the students and the instructors worked together to solve educational and technical problems:

The teachers and students of the *CaseNET* class were very helpful in many ways. If problems became visible (with computers or cases) we were a great team to solve them quickly and correctly. You could find great difficulty finding a better group of people. They also make this class very enjoyable, but when it came to work they got it done in a professional manner.

Use of Cases and Case Methods

While more investigation is needed in order to determine whether skills acquired in *CaseNET* are readily integrated in classroom teaching, 12 (2%) of the learners indicated that they would make direct applications of case analysis and/or their final project with their own students. One student said: ‘I found the criteria for analyzing cases to be very helpful and [it] could be something that I could adapt and develop when analyzing short stories or novels.’ Another said: ‘I teach 4th grade [pupils aged 9 years]. I see the process as being a way of thinking and looking at things. I intend to pass this strategy on to my students especially in the study of Virginia History.’ Nine students (2%) suggested expanding the types of cases available and other ways of improving the existing case studies, for example: ‘I would like to see more cases geared toward graduate-level teachers. Many cases were geared for first-year teachers.’

Teamwork and Community

Teamwork and collaboration were considered an important aspect of the *CaseNET* experience. Around 81 responses (15%) indicated that community, through site-based teams, discussion groups, and video conferencing, was an

essential component in the course. To determine whether the course activities and web site created a professional community and encouraged teamwork, we asked questions about the case contest, about working in teams and about the utility of reading other teams' case analyses. 81 comments (8%) indicated that collaboration within or across sites enhanced their experience in the course. Thirteen comments (2%) supported the use of site-based teams for completing case analyses. Comments also communicated that work completed with a group exceeded that which could be accomplished alone: 'My favorite part of the course is the interaction amongst the team members. Four brains working together have so much more information than one alone.' On the whole, students enjoyed communicating with one another and recognized its potential and importance. As one student put it: 'We need more time to talk – or we need to take more time to listen!'

One participant cautioned, however, that not all teamwork was successful:

My paramount concern was the teamwork. We needed parameters set for teamwork to be a good working arrangement among three strangers, one of who took personal offense with any editing and deemed our contest case a failure in my opinion. This was my most frustrating incident. I usually like teamwork and think it has great professional potential.

Strategies for improving teamwork and collaboration were suggested by 13 respondents (2%), indicating that more intentional inclusion of participants from diverse backgrounds would be beneficial. As one student explained: 'I think it would be good to have more of a mixture of people in it next time. Some pre-service and in-service and some principles [sic] maybe.' Another suggested: 'I think more of an international perspective could be beneficial. There are aspects of American "culture" that I learned and benefited from, and I'm sure that there are aspects of Canadian culture that are beneficial.' In addition to more diversity, better structuring of activities and increased interaction were also suggested by several students: 'I really felt like even better use could have been made of the teams. There was one point when our teams were really clicking, cases 2 weeks back-to-back. Then suddenly the teams were on hiatus for a few weeks until the case competition.'

Technology Usefulness, Application, and Skills

We recognized that technology is often criticized for dehumanizing learning activities and has the potential to encourage isolation, but participants' responses indicated that this was not the case. As one student commented: 'I thought technology would isolate us, but it actually linked us!' Indeed, we found that technology did link people together both across and within sites. Particularly interesting was the fact that some of the linkages within sites

were strengthened by the pure challenge of using technology in new ways. Participants shared their knowledge with each other, as one explained: 'I feel I have learned and increased my technology skills considerably. [O]ne member of my team showed me several things that I had not known what to do [sic]'.

Of the comments generated from open-response items:

- 105 (19%) addressed technology, with 17 (3%) supporting the use of video conferencing technology;
- 23 (4%) communicated participants' perceptions of increased skills;
- 7 (1%) indicated increased comfort with using computers and the Internet;
- 7 (1%) suggested participants desired to apply directly the technology skills and knowledge gained through *CaseNET*;
- 8 (1%) expressed positive feelings about the use of technology in the course.

One respondent's comment is illustrative: 'I feel that I have crossed the great divide – my trepidation with unfamiliar hardware and software has virtually disappeared. More and more I am thinking of ways to enhance communication with my peers through the telecommunicating resources I now have.' Another participant had a similar experience:

After the first class, I had a headache for 2 days and I did not want to return. I am computer literate, however the thought of the Internet overwhelmed me. Four months later, I feel quite differently. I wrote a final project in which I wrote a 5-day lesson plan for my students on the Internet. I can't wait to introduce my students to Internet and I can't wait to get Internet in my office.

While a majority of student comments indicate technology was effectively used in the course, areas of improvement were identified by 41 (7%) of the comments we analyzed. These comments indicated frustration with local technology (N=10, 2%), frustration about poor network access (N=9, 2%), and difficulty using the *CaseNET* site (N=8, 1%). These problems adversely affected the course experience for participants. As one student, in a site scheduled for Internet wiring that never materialized, describes: 'Without Internet access, this class was dramatically changed. Much paper and assignments. [N]o interchange of ideas with others in other places.'

Of the total number of comments, 23 (4%) communicated that participants felt that their technical skills had increased since the beginning of the course. Participants commented on their increased knowledge of the Internet, saying such things as: 'I feel that after taking this class I will be more confident using the Internet for my professional purposes.' They also communicated recognition of their own growth in using the computer. One student noted, for example: 'I was a total computer novice when I began this class. I struggled with the technology of the course. Although my computer

skills have improved, I still need some basic skills.’ Another 7 (1%) indicated that they planned to directly apply technology in instruction. One participant said: ‘I’ve browsed many web sites and gathered material and was able to utilize it in my classroom.’ Another revealed: ‘I have gained some insight into how teachers can use the Internet in their classrooms.’

Conclusions

While case studies have been used in various professions to stimulate reflective decision making and problem-solving practice, the use of case studies in the preparation of teachers is relatively new. It is our belief – through our work with *CaseNET* – that the combination of cases and technology provides a unique opportunity to engage developing teachers in professional behaviors. Apparently, both in-service and pre-service teachers engaged in *CaseNET* share our perception. Although case studies provide opportunities for educators to learn and practice professional behaviors, their use alone does not guarantee these outcomes. The way cases are implemented is crucial (Moje & Wade, 1997).

Teachers not only need training in new tasks but also need new kinds of professional development. In their work with the Apple Classroom of Tomorrow, Sandholtz et al (1997) who were researching staff development models, found that ‘when learning to integrate technology into their classrooms, the most important staff-development features include opportunities to explore, reflect, collaborate with peers, work on authentic learning tasks, and engage in hands-on learning activities’ (p. 142). The perceptions of previous *CaseNET* students engaged in an environment modeled after these principles appear to support such an orientation.

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Note

- [1] Visitors may log onto the *CaseNET* web site by using the username ‘welcome’ and the password ‘welcome’.

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