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Abstract

This study tells the stories of four successful graduate students within a cohort of learners who were earning graduate degrees in technology for education and training by distance. The students were practicing teachers in the Dakota Interactive Academic Link (DIAL) consortium. Courses were offered by the University of South Dakota, using videoconferencing through the statewide Digital Distance Network (DDN) and WebCT asynchronous discussions. Mezirows 1991 theory of transformative learning suggests that adult learners may experience a transformational experience. Results showed that the four study participants experienced major changes in their way of thinking about learning and themselves. Conducting longitudinal studies in which adults are interviewed throughout their graduate school experience is recommended.

Transformation of Rural Teachers Earning Graduate Degrees by Distance

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Introduction

This study tells the stories of four successful graduate students within a cohort of learners who were earning graduate degrees in technology for education and training by distance. The students were practicing teachers within the Dakota Interactive Academic Link (DIAL), a consortium formed in the 1990s to assist rural school districts in South Dakota.

One problem faced by South Dakota has been a shortage of teachers with advanced degrees. For teachers who live in isolated areas, attending traditional degree programs while keeping their jobs is not realistic. In response, beginning in 2000 the Division of Technology for Education and Training (TET) within the School of Education at the University of South Dakota (USD) offered two graduate degree programs by distance: a master's degree for teachers and a specialist degree for those who wanted to pursue leadership opportunities. For the master's degree, two of the required courses were conducted by Dakota State University (DSU) while the remaining courses were taught by TET faculty at USD. The specialist degree was aimed toward those who already had masters' degrees and were interested in seeking leadership positions in education or training.

Both degrees gave students theoretical and practical knowledge of educational technology and its impact on schools and businesses. Students studied instructional design, learning theory, integrating technology into curriculum, multimedia skills, and organizational change. Faculty emphasized a constructivist approach to learning in which

students reflected on their experiences through papers and projects, and participated online in the distance learning community of other DIAL students.

Twenty-five working K-12 teachers and administrators from across the state signed up to be part of the USD DIAL cohort. Most of these students had not taken classes for many years, yet had years of valuable teaching experience. Although ages ranged from students in their 20s to those in their 50s, most were women approaching mid-life. Technology experience tended to be fairly limited, although the interest in learning about using technology to improve teaching was strong. Some of the students had previously participated in summer workshops for K-12 teachers launched by then Governor William Janklow. These included the Technology for Teaching and Learning Academy (TTL) and the Distance Teaching and Learning Academy (DTL).

Although a rural state, all of South Dakota's school systems have been wired with high speed Internet access. Thus, it was possible to offer graduate distance courses using a combination of videoconferencing through the statewide Digital Distance Network (DDN) and online discussions. The school systems around the state provided the DDN sites for students to attend classes. Four to six sites were made available for each session, and students traveled to the nearest site. In the beginning of the DIAL program, classes met over DDN every other week: In later semesters they met less often, as students indicated they preferred online learning. WebCT, a course management tool, was used to hold asynchronous online discussions during weeks when class did not meet. Course materials were posted on WebCT. Instructors were available for consultation by phone or email. In addition, week-long hands-on courses were offered onsite at USD during the summer.

At the conclusion of their program, the USD cohort students from both the masters and specialist programs were evaluated based on their development of an electronic portfolio and analysis of a comprehensive case study developed by their program committee. They were required to give a defense of their portfolio to their committee. This involved a formal meeting in which students showed highlights of their portfolio electronically, summarized the content, and answered questions from the committee. They were evaluated for both content and technology use according to a rubric. The majority of the DIAL students graduated in 2003, with most of the remaining students graduating by the summer of 2004.

What makes a distance student succeed in completing a program? Previous studies have focused on what factors lead students to succeed or fail in distance programs. Stein and Glazer (2003) suggest that persistence for adult graduate students learning by distance may be related to having faculty be responsive to learner needs, reassuring students that the program can be completed, and being flexible regarding their situations. Howland and Moore (2002) found that successful online graduate students showed greater independence and a sense of responsibility for their own learning, while other students became easily overwhelmed. Successful online students have also been shown to be reflective (Aragon, Johnson, & Shaik, 2002). Another study looked at the role of personality, showing the importance of conscientiousness for college students taking an online course in English composition (Santo, 2001). The students who wrote the best papers and received good grades scored high in conscientiousness on a personality inventory. Those with very low conscientiousness failed the course.

Kemp (2002) saw resiliency as the primary factor associated with distance course completion. Personality and environmental supports strengthen an individual's ability to manage or cope with significant adversity or stressful events. When Kemp looked at completers vs. non-completers in 460 undergraduate students, who were first-time distance students at Athabasca University (Canada), she found that neither life events nor external commitments (e.g., family, job) seemed to affect whether students completed their courses. However, there were significant differences between the two groups in terms of some of the resiliency skills as revealed by the Resiliency Attitudes Scale (RAS). Persisters and those who failed scored higher than non-persisters on the RAS. She suggested, "knowledge of students' resiliency skills… allows distance educators to target interventions to those most in need…. Lack of resiliency, not lack of capability or skill, may in part be responsible for avoidance of certain courses and careers" (p. 78).

A study by May (1994) examined the distance learning experiences of women. She interviewed nine women from a variety of backgrounds who took a women's studies course by correspondence study or teleconferencing from Athabasca University during the 1990-1991 academic years. Typical reasons for choosing distance education were due to personal circumstances, denial of educational opportunities in the past and the chance to get an education now, or because they lived in a rural community with harsh winter weather where other opportunities were unavailable. These women planned their study schedules around the needs of their families, which required the constant juggling of priorities and commitments. The women expressed gratitude at being able to study from a distance. However, because distance learning "requires a considerable degree of learner self-determination and self-motivation, the women contended that it was best suited to self-starters" (p. 12).

Success can be more than the achievement of knowledge/skills and program completion. A measure of success for adult learners might be whether they experience a transformation that alters their perception in some major and positive way of what they want to accomplish in their lives. Mezirow's (1991) theory of transformative learning provides a way of looking at how adults come to reframe the meaning of their life experiences. Transformation represents a fundamental transition or change.

Transformative learning begins with a disorienting dilemma and ends with a reintegration into society with a new perspective (Mezirow, 2000). Adults perceive their learning experiences through a unique mental frame of reference that acts as a way of interpreting their experiences. A frame of reference is like a filter and may be within or outside the person's conscious awareness. Learners gain a new way of interpreting experiences when they become critically aware of current assumptions and potential consequences. This new frame represents a transformation in thinking and becomes a guide to future action.

King (2002) describes how transformative learning often begins with a trigger event that causes adults to question their assumptions and seek further information. The adults then find ways to integrate these new perspectives into their lives. According to Mezirow (2000), the movement toward transformation may not be consistently forward, and a learner can be temporarily stalled. The emotional experience of transformation is intense and may be seen as threatening. Thus, empathy and trust from the instructor and the support of a learning community of other students is essential. Boyd's transformative

learning model builds on Mezirow's, emphasizing the discovering of new talents and the development of confidence, empowerment, and self-responsibility (Taylor, 2000).

Only two examples of transformative learning in distance education could be located in the research literature. Benson, Guy, and Tallman (2001) show how the learning perspectives of four female graduate students changed after taking an online course in library media. Their intention was to use Mezirow's 1991 theory to describe the process by which the students experienced changes: However, only one student was identified as experiencing transformative learning. This student became more independent in completing coursework and interacting with others. The changes experienced by other students were minor and thus were not considered transformative.

Palloff and Pratt (1999), in *Building Learning Communities in Cyberspace,* devote an entire chapter to transformative learning. The authors teach at the Fielding Institute, a graduate distance-learning program for mid-career adults. They see transformative learning as being "based on reflection and on the interpretation of the experiences, ideas, and assumptions gained through prior learning…. The goal of transformative learning is to shake off the constraints of limiting perspectives we have carried with us" (p. 129). Palloff and Pratt argue that online learning is conducive to developing transformative learning in students because it is learner-centered. "When students are empowered to become experts at their own learning, they cannot help but be transformed as people. They learn about areas they never thought possible before, one of which may be technology" (p. 142). Communicating through asynchronous interaction encourages the ability to reflect on both the course content and the self. The environment must be supportive by encouraging students to apply course materials to their own lives.

One of Mezirow's (1991) points is that, to be transformed, learners must encounter a disorienting dilemma that causes the learner to critically assess their current ideas. Paloff and Pratt (1999) state, "by simply getting involved in an online class, a learner immediately encounters a disorienting dilemma" (p. 131). This may not sound like a major transformative experience, and yet for students who have never experienced it before, the online learning experience can be initially threatening. I have had students who were bewildered by the software (WebCT); how to use it, how to find the syllabus, how to shape their discussion responses in writing, and how to manage the unaccustomed pace and pauses involved in asynchronous discussion. Once they mastered this, it was very exciting to them. Paloff and Pratt (1999) believe that in an online course "personal growth becomes a companion to intellectual growth as the students assumes greater… competence, authority, self-confidence, and an overall sense of mastery and power" (p. 131). They caution that transformative learning may be a somewhat painful process.

My study looked at the factors influencing success for four DIAL cohort students who had completed the distance education program, how the program had benefited them, and whether transformative learning had taken place. There were four research questions:

1. Why did the students choose distance learning and were they satisfied with the experience?
2. What factors contributed to their success as distance graduate students?
3. Were they using what they had learned in the program (and if so, how)? Had getting a degree opened up any new opportunities?

4. Did transformative learning occur for them? If so, in what ways did getting a degree change them?

It was hoped that the answers to these questions would lead TET towards improving its graduate program, as well as providing information that might benefit other graduate programs seeking to offer degrees by distance.

Methods

To get approval to conduct this study, I submitted a proposal and a Human Subject Consent Form to the Institutional Review Board at USD. My project was approved as exempt research. I also gained certification by taking a required online course in the Protection of Human Research Subjects. All faculty members at USD are required to complete this course before being allowed to conduct research on human subjects.

In developing my methodology for this project, I followed the guidelines of Guba and Lincoln (1981). These researchers emphasize that case studies should be holistic and lifelike, that they may even read like short stories. A major purpose of case studies is to "focus reader attention and illuminate meanings" (p. 376). Guba and Lincoln state that qualitative research should contain a thick description. To the qualitative researcher, "every aspect – sights, sounds, smells – of the lives of his subjects is of intense interest" (p. 135). Thus, providing an empathetic and vicarious description is essential. They add that the "extent to which a narrative not only portrays the context faithfully but causes vicarious experiencing to take place determines the relevance of the report" (p. 150). The report should clarify and summarize what has been observed during the investigation, leading to a working hypothesis. The thick description makes it possible for persons in other settings to determine whether the context of the case studies fits their own situation.

Stake (1998) recommends selecting cases from which we feel we can learn the most about both the individual case and the phenomenon (especially the latter if they may yield unusual insight into an issue). Cases may be looked at to develop a better understanding of a particular case or to provide insight into an issue or a theory. "The case is often looked at in depth… because this helps us pursue the external interest… The choice of case is made because it is expected to advance our understanding of that other interest" (p. 88). An advantage of the case study method is that "the reader comes to know some things told, as if he or she had experienced them…. We come to know what has happened partly in terms of what others believe as their experience" (pp. 94-95). To make this possible, the case study must contain a sufficient narrative description.

Glaser and Strauss (1967) examine two different purposes for qualitative research: verifying or generating theory. When verifying theory, the purpose is for accurate description and verification of existing theories. The researcher presents an accurate description of what is being studied and gives interpretive comments around descriptive passages and quotations from interviews. When generating theory, conceptual categories or their properties are determined from evidence and theory emerges from the data. My concern was with verifying theory.

Glaser and Strauss (1967) suggest that qualitative researchers can get crucial insights from their own personal experiences prior to research, as well as from existing

theories. As someone who taught several distance courses for the DIAL program, I had the opportunity to get to know some of these students in some depth, through our course-related and private discussions in videoconferencing and online discussion, before conducting this study. I had also briefly met them when they came to campus for a summer class (taught by another instructor). So, although I began to plan my study with this theoretical framework in mind, in a sense my study had already begun unconsciously by me noticing things in those who would become my participants. I was not trying to generate theory, but to demonstrate whether existing theory could apply.

Without any prior knowledge of these students, I would have been lacking a rich source of data – yet I admit that I was changed by the experience as well, which could have affected my interpretation of the data as well as what I went seeking. Knowing these students beforehand enabled me to develop the bond of teacher, mentor, and student. During the study, my interactions with these particular students began to alter, which I saw as possible of happening in a graduate program. As they grew more capable and self-confident (in ways that I would not have expected) and their lives began to change in positive ways, my own frame of reference was altered concerning what was a possible outcome for graduate programs.

I selected subjects whom I started to suspect a transformation was taking place. I went with the idea of "if you want to look for x, go where x is." I did not choose to interview cases that would disconfirm the theory because I was only interested in examining the characteristics of cases in which transformation was likely to be present.

My four subjects were all White women at mid-life (late 40s or early 50s). (Those enrolled in the program were nearly all women.) The four distance students that I selected also met the criteria suggested by Cookson (1989): persistence, achievement, satisfaction with their experience, and intention to take part in additional learning experiences. These students not only submitted outstanding work, but also their enthusiasm and drive was evident in every interaction I'd had with them as an instructor. The four individuals in the case studies represented working teachers who lived in rural areas and were interested in educational technology.

I got to know the students best when they took a course I taught on personal transition and change, based on the work of William Bridges (1980). McWhinney and Markos (2003) see Bridges' theory as an example of transformation theory. Personal change often begins with a crisis. While change is external, transition is the inner feelings that take place. According to Bridges, transition involves three stages: endings (the loss of the old identity); neutral zone (an in-between time that allows contemplation and exploration); and beginnings (in which a new identity develops). McWhinney and Markos use the terms "crisis, "entry into and passage through liminal space," and "reintegration" to describe these same phases. The concept of transition and transformation are similar in that both are internal processes, but transformation theory does not place an emphasis on three distinct phases.

My students' first assignment in this course was to write a paper about a personal change they had experienced and the transition they went through to adjust to it. There were frequent comments on the discussion board about the changes they were undergoing and the closeness they were developing towards each other. The content of the course may have influenced the transformation that I began to see in the four students who became my study participants.

Those whom I did not choose as participants did not know about the existence of this study. I did not want other students to feel neglected for not having been selected. The students who were chosen were told that my reason was that they were among the most successful students in the program in terms of attitude and achievement. I did not mention the transformation aspect, as I did not want to put this idea into their heads unless it came from them. Nor did I tell them who else was involved (although they may have talked to each other).

Because I served as both instructor and researcher, this study was not conducted until after the students had completed all coursework with me. Data were collected through site visits at participants' schools where semi-structured one-hour interviews were conducted. One student was interviewed at USD as she was not currently working at a school. Although a standard list of questions was used, additional questions varied depending on the specific experiences of participants. To ensure confidentiality the real names of participants, schools, and locations are not revealed in this article.

Interviews were videotaped for review by the researcher and one assistant. Permission was asked to videotape the interviews. Interviews were transcribed from the videotapes. The videotapes were also reviewed for facial expression and body language. Other sources of data included for this study were

- Portfolios (a compilation of the student's best work throughout the program)
- Portfolio defenses (oral defenses of the student's portfolio, a requirement for graduation)
- Course experiences (such as written assignments, presentations, discussions, email)
- Observation of work site (when I went to conduct the interview)
- Any informal conversations

I used a top-down approach of using transformative learning theory as a theoretical framework in data collection and analysis. I was unable to use pre-measures. Thus, I used my observations of the participants and their work from the time that they first became my students. When I first became a distance instructor for this cohort of learners, it was not my intention to do a study on them. Over a year's time, I began noticing changes in some of them. They were giving more thoughtful responses, doing more sharing with other students, and showing greater self-confidence. These were all areas that I encouraged through questions, feedback, and my constant emphasis of the cohort as a learning community in which we learn from each other. Around the same time, I was reading about adult learning to help me become a better instructor, when I happened to come across the theory of transformative learning. Serendipity! I was stunned because it seemed to reflect what I had been observing in my students.

Analysis was done through identifying and categorizing major themes that ran through each interview. Phrases within sentences, sentences, and sometimes entire paragraphs were coded (depending on how long a particular theme was being expressed). My research questions guided my coding, although I was also on the lookout for other recurring themes that might have emerged during this process. Each category was given a title and a definition. All of the data was put into categories. Some comments by participants seemed to belong in more than one category, so in some cases pieces of data

were coded twice. I felt this was necessary to faithfully represent the meaning of what was said. In some cases, a category name was changed during the process. For example, a particular category, as I continued to code, might come to seem more like two sub-categories or there might have been a better descriptor term to represent it.

A qualitative software package, the trial version of Ethnograph, was used to code the themes. I am inexperienced using qualitative software, so part of my purpose was to evaluate this software for possible purchase. I chose Ethnograph because it was one of the first programs developed for computer-assisted qualitative data analysis and had a good reputation among qualitative researchers. It also does not have a steep learning curve to master its functions, unlike some of the other packages I have heard about. I transcribed my data into MS Word, copied it, and then pasted it into Ethnograph. Each case study was placed in a separate file within a "project." Ethnograph enabled me to enter codes into a code list. When I found a phrase that applied to that code I was able to highlight and select the code, and Ethnograph would then place the code on top in blue letters and mark the section in brackets.

Ethnograph numbers each line, which makes it easier to code line by line. Sometimes a code represented a phrase, sentence, or paragraph, depending on how long the concept continued. While going through the data online, I noticed additional concepts I wished to code and was able to add those to the code list. In the end, every case study had the same code book, but not every code was used for each case. I made the code books the same for the sake of consistency and because it helped me to see what was not there as well as what was there. One advantage of using Ethnograph is that it enables you to look at how many times a certain code came up; this enabled me to compare the cases in terms of frequency of codes. I also used the search feature to sort the data (For example it allowed me to group together all the quotes dealing with transformation for that case study so that I could read them). I used the memo feature whenever I wanted to enter my own comments about the data (such as when and where I conducted the interview or comments about the setting).

Because I find it hard to read on a computer screen, I also printed out a transcript in Word so that I could read the data through wholistically. Ethnograph breaks everything into short lines, and the codes, once entered, can be distracting while reading. This also provided me with a holistic view that I needed to pull my ideas together.

Case studies were then developed for each participant. The selections of quotations were based on the themes identified. What was removed from my final write-up was data that seemed irrelevant to my research questions, which the participants brought up. An example would be a long discussion that I had with one participant regarding the initial problem she had with discipline in her classroom and how she eventually solved it. Although interesting, this was not something covered in the DIAL program and it seemed unrelated to my study. A cross-case analysis was also conducted, looking for common patterns and differences.

Triangulation helped ensure the validity of data by looking at multiple data sources. A member check procedure increased validity by asking the subjects to give their reactions to the findings. "Member checking" involved giving any write-up of the case study to that participant, who was then asked to check it for accuracy. The students were allowed to make changes and to contribute updated information. In only one

instance did a student correct an inaccuracy. I did not ask students who were not participants to read the case studies.

In writing a case study based on an individual, there is always the possibility that the person will be recognized by someone in a professional or personal capacity. I changed the names and did not reveal the names of places or schools in an attempt to minimize this from happening. One of the reasons that I asked the participants to read over the write-up was to make sure that they were comfortable having this information made public. I was not asked to remove anything (some information was added).

I also discussed my findings with colleagues who had participated as instructors in the DIAL program. I asked them about their perceptions of these students and got similar concepts (i.e., "This student has grown tremendously since she began"). I asked the chair of my program to read over the draft of this paper and to look for anything that struck her as unlikely or did not match her view of these students and the program. I did not receive any comments from anyone that seemed to discount my perception of these students and how they had changed. This only strengthened my conclusion that these individuals had undergone a transformation.

When appropriate, during the write-up of the case studies that follows, I give quotations from the interviewees that help to illustrate their experiences and perceptions.

Results

Case Study 1: Abby

Part of my interest in these students was that I felt a personal connection, having made the decision in my mid-40s to obtain a doctorate in education. In the case of the DIAL cohort, the isolated rural environment posed special challenges, especially for the older female students who had both career and family responsibilities. Unless one has lived in or traveled through South Dakota it is difficult to imagine how one can drive for miles and see little sign of human habitation.

To meet Abby is to be swept up by a powerhouse of energy and optimism. In my classes, she was always the student I could count on to offer a perceptive comment and get a discussion rolling. Although not native to the state, she and her husband have chosen to live here for many years at the advice of a friend, who learned to love rural South Dakota. Rescuing her horses from a blizzard is just one of the experiences she can relate. She has befriended the people of the small community near her ranch, including the Lakota Native Americans. She likes to cook venison steaks for company and is proud of the time that one Lakota woman fell asleep beside her fireplace. "I feel honored because she felt comfortable enough."

Personal challenge is not new to Abby. She had no drive to be a teacher early in life. In fact, college was not in her plans. Her blossoming came later in life when, at the age of 40, she went to live on campus in a dormitory just like the other students and earned her B.A. "It gave me an `I could do this' feeling." Since 1992 she has worked as a special needs teacher at a high school on an isolated Lakota reservation. The school presents its own challenges. There are two school boards: one for the school district and the second for the Bureau of Indian Affairs. Nearly all of the students are Native American; 15 of 120 teachers are white like Abby.

Abby works with severely disabled 7th through 12th grade Lakota children. Common problems seen are mental retardation and Fetal Alcohol Syndrome. Abby teaches life skills in a special life skills classroom, using hands-on activities, geared for the ability level of her students. She developed the curriculum and also teaches a school-to-work transition program. "Transition is preparing kids for school to work, doing career exploration, and getting them job shadowing experiences," she explained. In addition, Abby writes individual development plans and modifies curriculum within the classrooms where the children are mainstreamed. "I've found over the years that there are some teachers more receptive than others for working with these students and modifying things in their classroom. It's been a goal of mine to make teachers feel comfortable working with handicapped students."

Abby gave her reason for participating in the DIAL masters program as offering challenge and increasing her career choices. It took her just three days to make a decision.

> I'm kind of a sink or swim person. I just went and did it. I thought I could manage being a distance student. Well, at age 50 this was an opportunity for me to be a student again. Focusing on getting my masters was a very important part of my life. It was a time also that I did some soul searching. I'm basically a dedicated, hard working person, and pretty determined when I set out to do something. I wanted to complete it. And I think I had the qualities that allowed me to pursue this program. And I was determined to succeed. I could improve not only my financial status but my personal goals and professional goals. I knew technology was an excellent field in which to be knowledgeable. After I got into the program I was very impressed with all the people there.

Abby did not see any major disadvantages toward being a distant student:

> I didn't miss out on being a distance student. Not at all. It worked so well for me because of my lifestyle, being out here in the middle of nowhere. Every place I go for everything necessary is over 100 miles. So to get to a college campus to take classes was not in the books for me. I don't want to give up my family time to do that. It wouldn't have been that important. Distance education offered that opportunity for me.

However, she indicated that distance education was not for everyone. "With distance education you have to be very self-paced and scheduled with your time. If you are not organized, you will have a difficult time. But it's such an exciting way. And it opens up a world of opportunities." The support of her family and community helped her get through it.

> This community was very supportive of anyone furthering their education. I share a lot of my desires, my goals, with my family. I was able to share my thoughts with family and friends, and the problems that face a graduate student. You know, the frustrating, the "I don't know how this

works," the technology problems. I've got a good support group within my community and my home to do that. My husband had to put up with my late night study habits.

My greatest challenge was to persevere when I was experiencing difficulties understanding, using, and implementing technology. I am driven to find the answer to the question or to find the glitches in my computer. But if we had problems doing a paper or doing a technology project, we could email or get on a Discussion board, and we'd get all kinds of feedback right away. The professors were excellent in providing information to help us work through those things. I would say 80 percent were very good about answering emails in a very timely fashion. The best part of it all now is that through DIAL I have contacts who can help me! The inner fulfillment of accomplishment outweighs any difficulties we have had to overcome.

The students that Abby teaches are considered high risk because of the complexity of their family situations. They are often "very behaviorally challenged." Her new technology skills have offered her an additional way to reach them. The life skills classroom has one PC connected to the Internet where children can look at web pages. Abby gives her students one-on-one assistance and has them write daily journals on the computer using Microsoft Word.

My students have severe written language deficits and difficulty expressing their feelings and comprehending basic life skills. A lot of my kids can't read or write, but they can copy. So I have a sharing session. I use a PowerPoint presentation to explain expectations and ask them questions. "What did you do last night? What did you eat for supper?" These are kids at the first or second grade levels, but they're high school age, so you have to adapt for that. And they will tell me answers to these questions or write little stories, and I write them down. They copy them into their journal and save them on a disk and they can edit and color it and add pictures. I print it out on paper so that they can copy it. Then I demonstrate basic Word skills such as saving and printing. The students follow the same steps. I put samples into their portfolio and document progress. I guess the most exciting thing was when one of my students said, "I can read my writing and it looks so neat!" Special needs students feel self-consciousness about poor handwriting. So when students see their documents in a nice format, it excites them. That's a small thing in technology, but when you're looking at special needs students, that's very important.

Abby's helpfulness toward other teachers has extended to technology skills:

I show them how to download things, to work programs, and import files. I think that's where I'm feeling a real strength now, that I can help other

people. My principal is very interested in the DDN and offering classes over that system. And we are not utilizing that system at all for classes. But it's basically because people are not trained in how to use the equipment other than the technology coordinator and myself. We sometimes get guest speakers. The principal will say that the Governor's going to give a speech over DDN and maybe some staff will be interested. The principal will ask me to turn on the equipment and set it up so it's ready to go.

Abby has also begun to use DDN to offer her own students a distance learning experience.

I've connected with another school that has special needs students so they could communicate with my special needs students. Each of my students introduces themselves and tells the other class about their school. Now the other school was primarily a white school. So when they saw our Native American students, their students were curious about the Native American culture. And our students shared things about how they got their Indian names and what they like to do. They spoke a few Lakota words. We only did it for about 20 minutes. The kids were just so excited to see themselves on TV. I'm going to connect with another teacher's classroom that is similar to my school-to-work transition class.

Abby appreciates the excitement of being a pioneer in distance education for rural teachers.

Technology has been in the business world forever. But it's new to education. For a lot of my professors, this was their first time teaching over the DDN. So we were all working out the technology bugs together. And I found that having all of us on that ground level was pretty exciting. We are setting the stage for future people. We're working out the kinks for others. You've got to change your way of teaching. You can't do the old lecture. We can mute you so we don't have to hear you. We can leave the room and you would not know that we'd left. Sick as that sounds, that's possible. You have to be a student that's dedicated and shows the respect to an instructor you would show in a classroom setting. And the instructor has to do the same for the students. We can't sit here for a two-hour lecture looking at a TV monitor and not move. Some professors offered sharing time. They asked for input from students. We've got to have that interaction and show our projects and use our technology capabilities to show what we've learned. It's fun!

How has going through the distance masters program made a difference for her?

There's so many ways in which this degree program has benefited me. The ability to operate and use technology in its many wonderful ways is

knowledge I could never have gained without the DIAL program. I didn't know how to turn on a computer until two years ago when I started this program. And I blow myself away as to what I'm able to do now. Unbelievable! It's exciting. I gained strengths never before imagined. If someone said I was going to be pursuing a master's in technology a year ago, I would not have believed them. I feel so lucky to have this opportunity to be in a program that is helping to implement technology in better ways into the educational system.

What advice would she give to someone else considering distance education?

Go for it. Absolutely. Keep an open mind. Be willing to change. Surround yourself with positive people who are open to trying new things. Take risks. Share your feelings. Share your thoughts. Share your knowledge with others. What good is it if you don't share? It changes the people around you. Take that technology and use it. Don't be afraid of it.

I want people to understand how fortunate we are that something like this is provided to people in this rural area. That is so needed. People in this area don't want to leave. They don't go to the big cities. And when this opens up doors so they can communicate out of their setting and yet be here, it shows that there's more out there in this world that this little niche in which they live.

Local businesses have also been making the attempt to "open up doors." The community resource center and a local technology firm are two surprisingly high-tech buildings located in the small downtown area of the reservation. The community resource center provides training in career instruction, software applications, and Internet use. The center is also intended for training the community to work within that company. Since completing the masters program, Abby has been working on an idea for how she would like to use her knowledge of education and technology.

I have a vision. This area is a ranching community. Ranching is depressed right now. It affects everyone. The work ethic is not seen as important here and it needs to be for reservation life to improve. What I'm proposing is that we take target students, primarily high school seniors, and have them take training through that community service. Then when they graduate they would be the workforce that could go into the technology firm. Now the technology company could hire up to 300 people. They're very understaffed. They have contracts for jobs and they can't fill the contracts because they don't have the workforce to do it. And I in the future would like to help the school community so we can target that area of students for the workforce and hopefully improve the area here.

I can't take all the credit for this idea because it's been talked about, but talk is cheap. Somebody has to coordinate it. This person has to have the

technology background and know the people to contact. All of these things are so important in setting up a system such as this. You have to go through the school board to release students. You have to get credits for students if they're going to do something of this sort. Adults in the community do not have that work ethic. So I think it's important to target the students and take those that come to school every day who are interested in technology. I think it's something that can be done.

Abby referred to the course I taught in personal transition and change, based on the work of Bridges (1980). While change is an external event, transition is what happens internally. Transition consists of three stages: endings (the loss of the way things were), the neutral zone (an in-between time), and a new beginning. In this course students were required to write a paper about a personal transition experience.

The highlight was the class in transition and change because it had an atmosphere that allowed us to share a lot of inner feelings. One student had a good friend who was killed in a car accident. That connectedness - when you can't see somebody, but can feel their emotions - isn't always there over distance training. But I felt that the sense of connectedness with those other students was very close.

I think my overall ability to communicate with people has improved immensely. My writing abilities have improved immensely. I work very hard in trying to communicate what I'm trying to say. My education back in the `60s didn't allow me to express myself. I always felt like I had to write for the teacher instead of for me. In my educational experience, nobody asked me to think. It was just do this, take the test. I am a very poor test taker. I have test anxiety. I've shown myself now that I'm able to do things that show what I've learned. The way we're able to share thoughts and get to that higher level of thinking - I've never been able to do that, and now I can. I find it so exciting! Another thing that changed is how I look at my school system and see how things fit in. I can be more open to how changes are taking place here.

Abby felt that she had undergone a major change during the program:

I gained an inner strength that I didn't know I had. And I think that was so important. It was a time in my life that everything worked. My children were graduated from high school; they had their jobs and their homes. And it was time for me to focus on myself. But I have two boys, and I want them to understand how important education is to their life and how much more improved it could be due to education. I'm hoping maybe they'll see me doing something at my age and they'll turn it around and say, "I need to go back to school."

I want to make sure that I've made a positive influence on someone's life
so that they might pass it on and share something with someone else. And
I want to make a difference. Before the Good Lord takes me kicking and
screaming, I'm going to make a difference.

Case Study 2: Jill

Jill was the only study participant earning a specialist degree. Her master's degree
was in educational administration. Jill was the star of my specialist students, always
turning in the most carefully thought-out work. At the time she entered the DIAL
program, she was teaching language arts for junior high school students at a small rural
school district and serving as the K-12 librarian. Near her completion of the program, she
made a major career change. She left the rural school environment and obtained a job as a
college instructor in elementary and secondary education in a small city in South Dakota.
Her job now includes supervising student teachers and helping them work on electronic
portfolios. As an experienced teacher she's able to tell her students "what is in books
often doesn't work." During the week she lives in an apartment in the city: On the
weekend she drives to her rural home where her husband still lives.

Although Jill had always wanted to be a teacher, her initial interest was in
physical education. While in high school she became an assistant physical educator to the
teacher. Then she went to a huge college and as she put it, "got lost in the shuffle. I was
disillusioned. And I actually quit school after a year and a half and got married."
Eventually she decided that she wanted to be a teacher. "So that's when I went back to
school knowing what I wanted to do." She has been an educator for 26 years.

When Jill first heard about the DIAL program she thought it "sounded pretty
nifty." She filled out the papers the same day that she received them.

> I was interested because of the technology angle. Because I have always
> felt that when you get into a learning situation you stay younger and life is
> more exciting. I'd been [teaching] in the same school for 20 years, and I
> like change. So this was a way for me to continue to change. And that
> affected me more than thinking about it doing anything for me in the
> future. Every instructor that met us was very welcoming. They were
> excited about it, and I felt that excitement too. I felt that we were part of
> something neat and new.

What helped her most in getting through the program? "Perseverance. I did a lot
of this work at night, at home on my computer. I had to really budget my time. I either
was working or I was working on school work for quite a bit of the time." Another thing
that helped her was that her son had graduated and gone off to college. Jill did not see
taking courses by distance as a disadvantage.

> Taking this program over distance has helped me become more modern.
> The kids that we're turning out to be teachers today are going to have to
> deal more and more with technology and distance techniques, especially if
> they're going to teach in South Dakota. And I feel that my experience of

taking this program over distance has helped me relate to teaching courses over distance and has kept me up-to-date with the world – more forward thinking.

The support of other students was important to her:

As time went on, we became a close community. We'd email each other. When we had problems, we had similar problems. There wasn't enough time; we had to deal with equipment. A lot of times in class you'd have a 10-15 minute break, and that would be our time to visit and talk to each other, ask each other questions, or share concerns. The few times we actually were together helped us to be a stronger community. The week on campus in the summer, the conferences we went to - those things helped us to be closer than a true distance where you never saw each other. So I think we became a very strong community.

Jill began using her knowledge of distance education while still teaching at the high school.

I tried to get students into the distance room once or twice a year. For example, a teacher at a school about 100 miles away and I combined our English classes. It was on the theme of World War II, but in the end we came together for a two-hour presentation where our students were presenting things that they did. They were very excited about doing this. The other kids had a book celebration, a certain way that they critiqued a book. My students said, "Can we do that? It sounds like so much fun." If they think that it's fun, they're going to be interested in doing it. And they're going to learn. So we got new ideas, and they got to see the other kids at the other schools. They came to school looking forward to doing this. That is what I see as real value to students and teachers.

Why did she decide to leave the school district? "I was stagnating." Although she loved teaching, there was something missing.

I had been offered a job elsewhere the year before, but it wasn't a teaching job. I have an administrative degree. But when it came right down to it I didn't want to be an administrator. I knew I was restless, I knew I wanted more. That's all I could explain. I wanted more.

Another problem she faced was a lack of recognition of her increasingly sophisticated teaching and technology skills as well as being taken for granted by the school board.

Our school technology coordinator was always busy and you couldn't find him if there was a minor crisis. And I would say that one-third of my time was being pulled out of the library to work on somebody's minor

computer problems that I could help them with because they knew where to find me. And they knew that if they came and got me I would help them right then. So I was spending a lot of time trouble-shooting. But then I was letting other things slide. I was taking more things home and being more backed up. It was actually creating quite a workload. I suppose they knew I would never turn down staff members that had problems. I worked on the school technology plan because the technology coordinator asked me to help him and I wasn't going to turn him down. He'd have helped me for anything I needed. That's just the way we did things in a small school. But I never once got a thank you from the school board. There was never any acknowledgment. The technology coordinator asked me if I wanted to be the distance education coordinator, but the school board didn't feel they wanted to pay me for that because I'd do it for free if they told me. I was getting a little disillusioned. I had people say, "What are you getting all this education for?" And I'd say, "I don't know."

Her new image of herself and her capabilities no longer fit her old role. Her inner crisis was beginning to grow.

Then the school was hiring some teachers and giving them 17 years of experience whereas when I came in I had five years but they gave me three. A couple of the other teachers asked the school board to reimburse us for our years of experience. And one of the school board members said, "You knew what you were getting when you came here, and you didn't have to stay. But you stayed so we don't have to give you anything more." They only saw us as old teachers. They didn't seem to care. That's when I walked out of the meeting and looked at the *Chronicle of Higher Education* and got the job. And it was like, Why didn't I do this on my own? Why did I have to get mad before I did it? Because when I saw that job, it was just like Wow, I would really like to do something like this. But I never really thought that I would be able to on the university level. I thought I could apply and it would be good experience. So I applied, got an interview, and then I was offered the job. So in a way he did me a favor by making me mad!

But the main reason [I left] was that I wanted to be more challenged. I finally came to the conclusion that if I want to do more, I'm going to have to move to do it. And I think this has been a good move. I enjoy it here, I feel fulfilled. I miss the kids and the staff at the school and I always will. I had 20 years to make them part of me. But this job wasn't going to wait another year. And I certainly found challenges!

A challenge that Jill faced in her new position was simply getting the technology to work.

I'll give you an example. There was a distance session with several public schools that were doing a math lesson for fourth graders, and I asked if I could tape it to show to my students. So we set up the connection and it was supposed to start at 9:30 am. Well, I went up at 9:00 to make sure everything was working. Their machines were a little different than the ones I'm used to, and I couldn't get the video to record. So I called our tech man and he came over and started working with it. Finally, about eight minutes late, I got hooked up so that I could at least listen to it, and he could work on it while I listened. So I listened for about 20 minutes and then I had class in another room. I told him, "If you get the tape to record, just let it go so I can show it to my next class." He said okay. While we were having class, he looked in and said, "I got it!" When class was over, I took the tape out and ran downstairs to rewind it to get it in place for my next class. I went back up, put the tape in, and we saw about three minutes worth. After that, nothing.

My next class was doing final presentations. One of my students said, "Where is the SmartCart that we're supposed to have?" And I said, "I ordered it." Well, all the SmartCarts were gone. So they said they could bring over a laptop to hook to the system to allow the students to do their PowerPoint presentations. I had to start because everyone's on a minute-by-minute schedule. While a student was presenting, here came someone with this laptop and just left it there. I jumped up very quickly and attached all the wires and went to turn it on. We started the next presentation. Then I noticed the laptop screen was not turning on. Apparently, there's a process of how you have to turn on everything in order to get it to work. However, there are no directions and no one ever mentioned it to me. Mr. Tech Man finally got that hooked up. These little glitches ran us right into the next class, who was standing in the hall waiting to come in because we went into their time period. That was just one day. [laughs].

At the beginning of the year I had quite a few computers in the classroom, but half were PCs and half were Apples. One of the instructors asked if we could have all PCs so that everything would be the same. So the computer service people came over and took away the Apples. Well, now we have only nine computers, but my classes had 30 some students. I tried one activity with three college kids in front of a computer and it just didn't work. There wasn't room. What I wanted to do was have interaction as they were looking up certain things on teaching on the Internet. So it just wasn't a very valid lesson. That meant that anything that I had intended to use computers for, I didn't use. But I intend to do more.

Jill told these stories with a smile. Her determination to conquer any problems and succeed in her new-found career was evident in her voice.

Getting the degree has given me the tools that I needed to teach at the university level. But also I think it's given me an outlook on life or on teaching that's more modern. I see a lot of teachers that go and take whatever credits they need to renew their certificates and then they're done. Their classrooms don't change that much over the years. Some of them can keep their enthusiasm and some of them can't. By learning I feel I can keep my enthusiasm not only for teaching, but for looking at new things to teach and new ways to teach. I think the DIAL program has been one of the best things that could have happened to me.

Jill is currently working on a doctorate by distance at USD.

If I'm going to be a good college instructor, I feel I should be a doctor. I want to do this for me. I just feel that it's the right thing to do. I want to be successful. I don't like to do anything halfway. I just want to be good at what I do. Challenges are great, but I want to be good at it. I like to win. I was a very competitive person as a child, and I don't feel that I'm competing with anyone here but myself. But I want to be a winner.

Case Study 3: Carol

Carol teaches at a high school in a prosperous looking small town in rural South Dakota. Her background is in Family and Consumer Sciences (once called Home Economics) including areas such as nutrition, wellness, and parenting. Carol exemplifies the qualities of leadership and service. For the past 10 years she has been actively involved in volunteer leadership positions for professional associations, which includes serving as president of a national association. She has also received both state and national service awards. Her extensive involvement has allowed her to travel through much of the country, an opportunity not available for most rural teachers in the Midwest. Through our discussions her level of commitment to her students soon became apparent. Surprisingly, teaching was not her initial career goal.

I was into textiles and design, and I wanted to be a buyer for a large department store. And my grandmother, who was my mentor, said she thought I would be good in home economics and maybe I should go to college for that. I ended up in education because I got married in high school and knew I would end up in a small town. I had no desire to teach whatsoever. I kind of fell into this job and loved it from day one. I loved working with the students. That was 28 years ago, and I'm still in it, in the same school system.

When Carol became my student one of her earliest comments to me was: "I thrive on change. I seem to continually seek out new challenges that bring about changes." This was not Carol's first attempt at obtaining a masters degree. She once began a program in home economics that she did not finish. This time she was determined to succeed. What had gone wrong the first time?

As I now reflect back on that phase of my life I can understand some of the reasons why. It wasn't necessarily my goal. Now, many years later, I am pursuing a graduate degree in an area of extreme interest to me. I'm excited about technology and its implications to learning. I see it as a way to expand my knowledge of technology and its integration into my curriculum. I had attended a TTL Academy so I saw [the DIAL program] as an expansion of some of the theory and the technology skills I was introduced to there. It was a natural progression.

As far as it being an opportune time in my life, I don't think there has ever been an opportune time. I have one masters program that I never completed because of some things going on in my life back in the early `80s. This time when I went in my goal was it will get completed. [laughs] No matter what's happening in my life. I can always work on those personal things tomorrow. As I look over my professional career, it's been attitude that makes me successful. If I can walk into something with a very positive attitude and a smile on my face, regardless of what's happened prior to that, everything during the day goes better. It helps with whatever I'm undertaking.

She modeled her positive attitude with her students. "I use that attitude to turn around students who may come in here with an `I can't' or `I never can do this' attitude. It's hard for them to continue that attitude if I keep saying, `Yes you can.'" Like the other participants in my study, Carol saw certain advantages to being a distance student.

I liked the distance aspect better than having to go on campus. Other courses I've taken where I had to drive one night a week were extremely hard. With distance, there's that flexibility. I think that has been probably the godsend to working through this degree and being able to still keep my job. I don't think I would be able to do that if I had to travel to the university.

She also cited the community aspect as important:

The personal attention we've gotten here has been wonderful. The faculty came across to me as like family working together to help us meet our goals. And I haven't seen that in all the graduate classes I've taken in different universities. Another unique experience has been that you form some bonds. When you know that you need help, there's always someone to contact. At my school district we were unique because we have five people in the DIAL program. We were a support system. Lots of times we'd just sit after class and talk. The cohort is a family working together to help us meet our goal.

While completing her degree, Carol branched out of her usual field and began to facilitate and develop self-paced technology-related courses in various computer skills and software packages at her school. This required a change in the physical environment, which the school was willing to accommodate. The home economics suite is now also the technology lab. The laptop computers are right beside the kitchen, with only a counter separating them and serving as a room divider. The room is bright and cheerful with two windows that allow the sunlight to stream through. Brightly colored shades of yellow, blue, and orange predominate. Students can work on different courses at little tables. There are three to four chairs at each table with laptops. There is also a color printer and scanner and a video lab with video editing software. Examples of technology courses that students can work on include digital photography, computer animation (Flash), web page design, and multimedia presentations. Students may also get involved in a community service project such as updating a web page for an organization.

The way in which Carol teaches has changed dramatically since going through the DIAL program. "I used to see teaching as sharing your knowledge with the students. My teaching method now is based on constructivist learning theory." This means that she uses project-based learning in which students learn through doing. There are no lectures nor does she use textbooks. "Several years ago, our superintendent said he was not going to pay money to buy textbooks. So I use a lot of online resources and tutorials. Or I use parts from a lot of textbooks, since none of them have everything I want. That's the advantage of not having 15 students in a classroom. I can buy two copies and use them as a resource book."

Part of her constructivist method is that she does not tell her technology students how to solve a problem beforehand.

> I don't demonstrate the techniques prior to the students doing them. They have to try to figure it out themselves before I'll answer their questions. And it's exciting to have a student say, `Hey, I got it!' and to see their face light up. It's been a hard transition for some students because we have tended to spoon-feed them. With this whole idea that they're going to learn better if they explore and try to figure out the problem themselves, I see much more excitement on their part. I also see some frustration. For example, suppose the animation in Flash is not doing what they want it to do. I'll say, "What did you do to get to this point?" Sometimes I'll ask questions. Sometimes I'll take over the mouse and say, "Let's see how far back we have to go."

Carol was fortunate in that the new skills and knowledge she gained through the DIAL program were valued at her school district. In recognition of her abilities, she was also given the job of being a part-time curriculum coordinator. She was asked to chair the Technology Curriculum Review Committee to develop a technology plan.

> The committee looked at potential technology offerings, distance learning and independent study options, and made recommendations. We felt there was too much duplication and what was being done at the elementary school was not being built on at the high school. We weren't getting new

knowledge and new skills, we were just repeating everything. So we were taking a look at that.

Despite the school district's interest in technology, Carol did not see any formal expectations for technology use among teachers.

We have to do all of our own grading and our daily attendance on the computer. As far as using it in your classroom, there is nothing that says you must use technology. But 75 percent of our staff has attended at least one of the Governor's Academies. We've had several teachers who have written grants to implement a technology program within their classrooms. So I think it's just something that's evolved as part of the staff started to do it. It's kind of a domino effect. We have lots of technology being integrated into classrooms. And we have a super technology coordinator – I think that's the key. He was a well-respected teacher and member of the community and then became a technology administrator. And he's very patient and helpful.

Carol was most excited about a grant project that she was involved in with two teachers in other parts of the state. Together they had developed a course on parenting to be taught by distance. The teachers were paid to write the curriculum over a summer. They met over the DDN or at a central location to develop the course.

Our administrators also allowed us to team teach the course. So you are tying up three teachers for one period a day to teach one class, which is unique. I only teach seven weeks of the course and then I get to sit and watch the other two teachers, which has been the most wonderful experience because you get all these tips on how to teach via distance. And these were people that knew my profession.

The DDN parenting class involved six schools, with nine students at Carol's location. Laptops usually stayed in the home economics room, but students were allowed to take them to the DDN room for class sessions, where they were used to write down their ideas for projects. Students could save their files to the servers on the network, and all students could access each other's files.

I attended one session of this class. For the assignment given that day, small groups of students were required to create a video on discipline practices for parents. The students were given a storyboard template and a rubric for evaluating their videos. Carol answered questions over the DDN and suggested using a narrator and filming a role-play. The children already knew how to use I-Movie software for editing. Carol used an overhead projector to show them the steps, and some of the students were already experienced and could help others. She was not able to let the students play their final videos over DDN to each other because the download process was too slow given the schools' slow Internet connection.

We are critiquing what happened in the class and what we need to do differently before we give our final product to the state. One of the teachers involved had been teaching distance classes for two years. So that helped us also because she had knowledge of what worked and did not work. And we found out all kinds of things. The first time we tried a chat, we tried to put all 40 students in one chat room. That was a total disaster! We've tried all the technology that comes with WebCT. We've tried as much technology as possible that comes with the Vtel [videoconferencing] system. We have learned that you do not cover as much material via distance, and we have all this wonderful stuff we want to do. . It takes a lot more time to teach this way.

Despite any problems that occurred, Carol retained her enthusiasm for distance education.

I wish every teacher could have this opportunity. Part of why I became interested is that there is a shortage of family consumer science teachers across the nation. I don't know what the state plans to do with this curriculum. But we know that we will use it again, whether we choose to do it by distance or use the technology components just in our classroom. What you see happening here at our school would not happen in a large school district. And I think our students are getting a unique opportunity because we are small. There are special challenges for rural schools. Our challenge is numbers. We know that in 10 years our school will be under 50 high school students. There just aren't enough families out there. Distance will be the answer if we're going to keep quality education in rural South Dakota.

It seemed clear that Carol was thriving in dealing with such new challenges. Was the effort involved in getting her degree worth the benefits? "Yes, it has been worth it. In fact, I'm looking beyond. I'm seriously considering getting a specialist degree by distance." She thought a moment and had this reflection to offer.

I think as I look back, one of the most important impacts this program has had on my work is being able to understand learning theory. Before when I looked at all the theory, it made no sense. Once I got into the classroom, theory was the last thing I thought about. The positive impact of the program has been – and it might be because of where I am in my profession, my life and my career at this point – but I can see the application of the theory. It truly makes sense. I can't think of the specific classes because we talk about theory in all of them. Now I can go into my classroom and actually apply it and see that yes that does make sense. I can remember taking some graduate classes in constructivist theory back in the `80s. And again it made no sense to me. But this time it just clicked. Yes, that makes sense about the way people learn. Yes, I see that with my students. To me, that's been a high point through the whole program is

being able to integrate theory and practice. I am truly integrating the philosophy of constructivism and encouraging students to be responsible for their own learning.

Carol sees her future as continuing to grow professionally.

I can retire in three years, and I have been seriously considering that. I truly enjoy writing curriculum and integrating technology, so I would like to work with groups of teachers to come to a consensus as to what they need developed that could help them in the classroom. And I would like to develop it. I wish I could do that and still be in a classroom with students – but there are only so many hours in a day.

Case Study 4: Ellen

Ellen was glowing with pride following the successful defense of her portfolio at USD. It had been a hard year. A business and technology teacher for middle and high school students, she'd been laid off from her job due to the school district's financial problems. She described herself as "my family's complete support system," as a large part of her time was spent helping to run the family farm. Although Ellen was still searching for the right career opportunity at the time I interviewed her, the positive change in her skills and level of self-confidence was dramatic. Ellen wanted to be a teacher ever since childhood.

When I was a little girl in the second grade, my teacher had a tremendous effect on me. She gave me a lot of courage. I became a top competitor in our math competition that we had every week. I went back several years ago to find her, not even knowing that she'd still be alive. But I did find her in the nursing home and she was the same that I remembered, except that she was a lot shorter. She took interest in every student, and she made it a point to remember every birthday. Wanting to be a teacher started then, not knowing I would have all these hurdles to jump through for fear of intellectual capacity.

For a while it looked as if her dream had stalled.

After high school I went one year to college. I became a teenage pregnancy with the husband that I now have. I finished that year and then I quit. I will honestly say I'm glad I quit, because I don't think I was ready at that time. The experiences I would have with my children would help me to understand students when I finally did get the diploma so that I would be more effective. I was about 31 when I went back.

When she first heard about the DIAL program, "I didn't know if I was going to be intellectual enough to do it." She elaborated further.

When you've grown up in a very poor atmosphere and had a handicapped brother, and are being told continuously that you are stupid, you start to question if you are capable of doing any type of activities. There's an enormous amount of fear that has to be gotten over. It was going through the TTL Academy that gave me the inkling that maybe I would be able to do it. I had overstepped the boundary of fear. If I had made it through TTL, then maybe I could make it through a masters program.

Like the other participants in my study, Ellen has a positive attitude about learning by distance.

Being a distance student is a lot easier than being on campus. I think back to when I was young. Being on campus, there are just so many things going on. And I know in adult life you have too many things going on too, but with an adult you should be more settled. The difficulty was the family always wanting my time, but I had the ability to say no, whereas in my younger years I probably wouldn't have said no. If I had deadlines to meet I would put my foot down and say I just can't. But I like the distance because I could do it at my own leisure.

In one instance she found that the distance format was not the most conducive to learning.

When another student and I did a project together, I drove to the town where she lived three or four times. I felt we would waste so much time emailing back and forth, and I knew our project would be complex. I did email some stuff I found on the web because I wanted to see if she thought it could be used in the classroom.

One advantage of the distance program's dual format (online and videoconferencing) was that it made it easier to keep in touch with her instructors.

Meeting with the professors every other week on DDN was not demanding at all. I feel you do need some contact with your professor. It goes back to that encouragement. I don't care if you're an adult or a young person, you need that contact whether DDN or chat, whatever, just to keep up that motivation. Even if your professor has to say, you don't have your assignments done, do we need to talk about it. You need that with distance learning.

I think distance learning is such an easy way to get an education without all the traveling and dorm expense. And you can do it at your own time except when you meet with the DDN session. If someone doesn't want to do it, then now maybe isn't right for them or they don't have the motivation or self-discipline to do it. But one thing I noticed with our masters program, even with adults, is that you see some of the same

characteristics as you see with young people. You'd have the same old excuses. But I would highly recommend distance education as the way to go.

Getting her work done on time was not a problem for Ellen.

I am very self-disciplined in virtual learning. And don't ask me how that even came about other than being the oldest child. But I always had the feeling that anything I did for my dad was never good enough. I had hardly gotten through the ceremony for my bachelors degree when he approached me and said, "Okay, now it's time to do your masters." So I think I pushed myself. He was always comparing me to my cousins who have engineering degrees and a doctorate. I said, "Dad, that's fine. But they haven't gotten their masters when working." He finally called me up one day and said, "You know that would be pretty hard."

In my classes, Ellen was the most active student on WebCT discussions. She not only did what was required, but made it a point to respond to every student, which took a great deal of time. Bonding with other students was clearly important to her.

Probably the biggest sense of connectedness I felt with the other students was when we were all together for a conference. It was so good that we had all come together. Another time was when we all met in central South Dakota to learn what the comprehensive exam would be like and what to expect. I could sense from all of us that here we are getting to the end and it's coming to a closure. But probably what I enjoyed most with the program, especially the discussion boards/chats, was that we were able to share some of the more personal things about our lives during that time. You didn't have to see their faces. Sometimes they showed me some ideas of what worked for them in the classroom. I truly believe that we did bond. I feel that I will keep in touch.

Given her emphasis on connectedness, it was not surprising that the most important part of being a teacher for Ellen was the relationship with her students. She was pleased when she learned that a class, for which she had substitute taught, had brought her an apple as a gift – which the regular teacher picked up under the mistaken impression it was for her.

I got really involved with my students' lives. Sometimes they would come up to my classroom and we would have a venting session. So sometimes it was like you were the counselor instead of the teacher, but I guess in some ways that was the type of teacher I was called to be. The person that was willing to listen and help them through their struggles at that moment in time. Each time when I left a school, the kids had been so disappointed. And in a way that to me showed I was successful because I had made such a strong effect on their life that it bothered them that I was leaving. The

caring, the love, being a part of what's important to them – that's what matters to me.

As a business teacher Ellen taught her students software skills such as Excel spreadsheets. While getting her degree, she also began to integrate technology into other areas.

One of the things in terms of technology that made a real hit with my students was that I developed an international currency project. We did brochures for the country they would represent. They did a PowerPoint presentation. I had them go online to look at currency for the country; also they had to explain what they found on the Internet concerning their country, what type of government it was, and some things about the culture. I took them to a website where they could do money exchange so that they would see how the currency would exchange if they went there to visit. One girl had chosen the country of Brazil. She was big on horses and rodeo. And she met someone from a Spanish-speaking country and she was so excited. That project just took on a whole new meaning for her. When they got done doing that project, they all wanted to go overseas and see other parts of the world. One girl has talked about going overseas and doing international business. That project really had a tremendous impact.

Education is fun. I can't picture anyone not wanting to have fun with it. Every time you walk into a classroom, it's like the potter and the clay. You're going to mold someone. Technology should be used to engage learners and inspire them to become the most they can become.

For her internship, a required part of the masters program, she branched out from the education field and chose to develop a web page for a local business and helped the owners learn software. A neighbor who learned of her new technology skills asked Ellen for help with Lotus 1-2-3.

So we started doing it that night. She was going to pay me and I told me no. She said, "You know, I've sat in these classes and I just didn't think it was doing me any good. Now I'm here with you and I'm starting to understand this." I enjoy doing stuff with people. And I have gotten a lot more confident. When I started I was just above novice level on computers. And now I've stretched way beyond that. And so when I hear somebody say to me, "Oh, I can't do this or that," I say, "Please, we're not going to start that. Because you won't want to hear my story." I always say, "If I can learn, you can learn. But you get to learn on a nicer time scale than I did. I got sunk into it. You can just flow at your own pace because I'm here."

Despite her clear dedication as a teacher and her new skills, Ellen became the victim of a declining budget in her rural school district. She was laid off from her job

during her last year of completing the program. During my interview, she talked about the incident in a matter-of-fact tone without self-pity.

> When the time actually came [of my job being cut], I was starting to sense it already. The principal said to me, "The superintendent wants to see you." I thought here it is. I said okay. We sat in his office, and the superintendent said, "We've got to make some budget cuts. The principal is trained in business, so he's going to take over your classes. So we're going to let you go." The whole time the principal never said a thing, but I could tell he wasn't happy. A day later he came to me and said, "If I leave, would you stay?" I said, "No, I can't stay." Because after that initial shock, you can't stay. I felt this was God closing the door anyway. When it happened I tried to be jovial, but inside I wasn't.

> What upset me more than anything was the previous schedule they had laid out for the whole year. I didn't have any teacher preparation time. The school was not supportive in my getting my masters degree. The agreement was that you were to give back to the school district two years after completion. And we see what happened with that. So what hit me hard wasn't so much being cut but I felt like I had been abused. When I look back and how I ever made it through the masters program at that time, I look back and I am in awe. After I had been riffed this past fall, I learned there was a school policy for some funds to help with education. I should have been approved and I wasn't. I didn't apply for it at the time because I didn't know about it. The principal ended up leaving the school. They wanted me to come back for the rest of the year but would not promise me a contract. I said no. But I still go back and substitute.

For a time, Ellen worked at a nursing home while she explored her options. Rather than seeing this as a step backward, she saw it as a chance to learn new skills.

> I think working at the nursing home I've been able to maintain using my mind on a faster scale and not let my mind deteriorate. Because it did challenge me mentally if I was going to do the type of work I had to do there. What makes it unique is that I'm under clockwork. Five minutes is of the utmost [importance]. I'm watching the clock all the time. I think that's been good for me because it taught me I could do that too, better than the person that trained me. I'm in charge of all the drinks, I do the dishes, I set the table. And they really like me there because I'm always smiling.

Currently, she has left the nursing home and has been substitute teaching, almost full-time, at the very school that once let her go. Ellen seems to have personally thrived despite the difficulty in her circumstances. What has made the difference?

I'm such a strong Christian woman. And I believe the course I took on transition made me realize that this was just another change in my life and was nothing to take so personally. Also I looked at it as a time of allowing me to rest a bit. I think back, would I have had enough time to finish the course, do the internship, do the portfolio, meet all those demands, and still maintain the family demands on me? At first it wasn't easy because all the old thoughts came back. Well, you're the only teacher that was cut – you must not be any good. All those negative things would hit me. Then I got to thinking, maybe this is just God's way of slowing you down so you can finish up your masters. I think it's learning just to accept. Here's an Ending, getting through the Neutral Zone, and then another Beginning is coming for me. I am on a tremendous spiritual journey that has given me contentment.

Ellen admitted that getting through the masters program was a struggle at times. Was it worth it?

You couldn't even put a money value on it. The program has just been awesome, just the camaraderie of the students and the encouragement of the teachers. I think what the program did was give me a confidence in myself that had never been there before. The reality was that I needed to face the fear of what the kids had told me so many years ago. I needed to face the scars of the issues with my intellectual ability and not let that hinder me anymore. I don't know if it's totally overcome or not. It's still nagging at me just a little bit that maybe it's not quite over with yet. But it's not a big issue anymore.

How did I leap over the hurdles of fear? Each hurdle of fear was conquered through each accomplishment and encouraging word that professors and peers gave me along the way of life. These hurdles took so long to conquer because they had been engrained so deeply into my mind and needed to surface a little each time I was requested to do something in this program and in other areas of my life. The positive accomplishments and encouraging words were the factors that assisted in the elimination of these hurdles and played an intricate part in my success towards my education and in life in general.

A course that I taught had students work together on a special futures project to predict the future of education. As part of her project, Ellen developed a new millennium collage-poster showing her vision of the future. Today this stunning poster hangs on a bulletin board at the School of Education where it is one of the first things visitors see if they walk in through the side entrance.

The program gave me the ability to be more of a visionary teacher. I think I was too shallow before. It made me take a deeper look at the education field that we're involved in. Having done the Futures project was what

really tipped the scale for me. I believe there are things that are going to happen that will blow us away. When you see what's happened going from a manual typewriter to chatting or NetMeeting across the world, it's going to expand more rapidly. I don't think we have a thought of what a computer can do if it has the mind of a human brain. If you have a computer that can test at a higher level, then students could not move on to the next level of education. If you have a student with great ability to learn, they can graduate when they're 14. The present educational system creates no motivation for those intelligent kids who have some self-discipline and motivation. So I became more of an educational visionary and more self confident that Ellen was not as stupid as Ellen always thought she was.

In concluding, Ellen told me:

I'm just sad that it's all ending. There won't be that same oneness that we shared online. It does come back to transitions. We're all kind of wandering a little bit right now because it is coming to a close. And then there will be another new beginning of some sort. My first wish is to teach, probably also to continue on with my education and get a doctorate. If the world wasn't in such a mess, I'd like to go to China and teach there for six weeks about English as a second language. So the life cycle is not going to end. You can come out the butterfly – or not.

Findings

Strauss and Corbin (1990) comment on a controversy in the field of qualitative research: How much interpretation of data should be done by researchers? "Some researchers believe that data should not be analyzed per se, but rather the researcher's task is to gather the data and present them in such a manner that the informants speak for themselves" (p. 21). Although I allowed the participants a chance to "speak for themselves" and describe their experiences in the preceding case studies, I present here some general comments on common themes that emerged. However, caution should be used in generalizing these findings to other settings.

Each research question is listed below with its associated findings summarized in a table.

1. Why did they choose distance learning and were they satisfied with the experience?

Table 1

Reasons for Choosing and Satisfaction with Distance Learning

Common Themes	Description
Flexibility of distance education	Saving time and money in not having to travel to class or stay in dorm, ability to work on course when you want, not having to give up family time to travel.
Distance education as opportunity, opening up a "window to the world"	Useful for those living in isolated rural environments.
Being a pioneer through distance technology	Setting the stage for future distance learners, becoming "more modern" in viewpoint.
Appreciation for blended learning format	Dual format (online and videoconferencing); being at campus in summer and conferences.

One difficulty mentioned was persevering when experiencing difficulties using technology. This was made easier, though, by the helpfulness of faculty and other distance students. Students commented that the benefits of distance learning outweighed any frustrations they might have experienced.

2. What factors contributed to their success as distance graduate students?

Table 2

Factors Contributing to Success as Graduate Students

Common Themes	Description
Pursuing degree in area of strong interest (educational technology)	All four students felt that technology was a valuable area to go into in the education field.
Self-discipline	Keeping up with school work, as well as with family and job responsibilities. Being hard-working and dedicated. Perseverance.
Desire to succeed	Having a competitive drive, competing with oneself, being determined to succeed, achievement-orientation.
Value of community (instructors and other students) as support system	Being able to get feedback and help by distance. Having access to a cohort of learners. Sharing personal and professional issues with other students.

Common Themes	Description
Being self-paced and organized	Budgeting time between school, work, and family responsibilities.
Comfort with change	Willingness to take risks. Thriving on change. Seeking out new challenges.

3. Were they using what they had learned in the program (and if so, how)? Had getting a degree opened up any new opportunities?

Table 3

Use of Knowledge/Skills Learned in Program

Common Themes	Description
Using technology in teaching	Abby used technology to teach mentally disabled Lakota children. Ellen developed a web-based international currency project for high school students.
Using DDN skills	Abby used DDN to connect to other schools and set up DDN for the school principal. Jill used DDN to connect to another school for English class.
Taking a constructivist approach	Carol used a constructivist approach to develop and facilitate self-paced technology courses in computer skills and software.
Designing new courses	As a family and consumer science teacher, Carol developed a state grant project on parenting taught by distance.
Technology planning	Jill helped the school's technology coordinator by working on the school technology plan.
Use of technical skills	Ellen developed a web site for a local business. Jill did troubleshooting when other teachers had computer problems.
New career	Jill obtained a new job as a college instructor in elementary/ secondary education.

4. Did transformative learning occur for them? If so, in what ways did getting a degree change them?

Table 4

Transformative Learning

Common Themes	Description
Growing sense of self-confidence and inner strength	Positive accomplishments led to greater self-confidence. Examples of student comments: Abby: "I blow myself away as to what I'm able to do now… I gained an inner strength that I didn't know I had." Ellen: "There's an enormous amount of fear that has to be gotten over…. Each hurdle of fear was conquered through each accomplishment and encouraging word that professors and peers gave me along the way of life."
Reflection	Students developed a greater ability for reflection and the construction of knowledge. Examples of student comments: Abby: "In my educational experience, nobody asked me to think…. I've shown myself now that I'm able to do things that show what I've learned. I've never been able to do that [before], and now I can. I find it so exciting!" Carol: "I am now able to understand and use learning theory…. It truly makes sense."
Using skills to help others	This was a strong theme. Examples of student comments: Abby: "I want to make sure that I've made a positive influence on someone's life so that they might pass it on and share something with someone else. And I want to make a difference." Ellen: "Education is fun. Every time you walk into a classroom, it's like the potter and the clay. You're going to mold someone."
A vision of new possibilities	Students' view of their purpose in life began to change as they developed a vision of possibilities that they had not considered before. Abby: "I have a vision…. The work ethic is not seen as important here and it needs to be for reservation life to improve. What I'm proposing is that we take target

Common Themes	Description
	students, primarily high school seniors, and have them take training through that community service. Then when they graduate they would be the workforce that could go into the technology firm."
	Jill: "I was getting a little disillusioned. I had people say, `What are you getting all this education for?' And I'd say, `I don't know.' The main reason I left [to take a new job as college instructor] was that I wanted to be more challenged. And I think this has been a good move. I feel fulfilled."
	Carol: "I truly enjoy writing curriculum and integrating technology, so I would like to work with groups of teachers to come to a consensus as to what they need developed that could help them in the classroom. And I would like to develop it."
	Ellen: "The program … made me take a deeper look at the education field that we're involved in. I believe there are things that are going to happen that will blow us away. … So I became more of an educational visionary and more self- confident…. I am on a tremendous spiritual journey that has given me contentment."

Conclusion

The perception by students that distance learning was useful for those living in isolated rural environments meant more to me once I visited Abby's school on a Lakota reservation. I had never before understood what it meant to be isolated until I experienced the drive there; over miles of road with no towns or even gas stations or convenience stores. There was no bookstore on the reservation, nor was there access to the types of activities that exist in a city. I understood Abby's passion for using distance education to transform lives. The perception by Jill that one becomes "more modern" by using distance technology gains new meaning when seen in this context, as learners become connected to others in the world and gain exposure to new ideas.

There were no surprises in examining the factors that students felt contributed to their success. However, one of these factors has led to a change in the TET program. In the past we did not use the cohort method; students entered the program at different times and thus did not have a common experience to share with other students. With the DIAL students, being in a cohort and being able to share with other students was clearly important to them in feeling emotionally supported during the program. Since the study, we have formed other cohorts and are waiting to see the results. For required courses students will take the same classes at the same time and will graduate at the same time.

It was gratifying to find out that students were using what they had learned in the program. Yet it was unfortunate that Ellen was laid off from her job and was working limited hours as a substitute teacher. Since the study, her hours as a substitute teacher have increased and she has not had to seek additional work outside the teaching field. Jill's move from K-12 to college teaching enabled her to share her knowledge with student teachers. Although Carol remains at the same teaching position, what she does is innovative and radically different from what she did before.

All four study participants experienced transformative learning as a result of their experiences in the DIAL program, although the way in which the transformation manifested itself was different.

- For Abby, the transformation was in developing a vision of the future in which she would play an important role to help rural Lakota children lead a better life.

- For Jill, it was in taking on a new job with advanced responsibilities that she had never thought she could do and beginning work on a doctorate by distance.

- For Carol, there was a change in the way she thought about learning and the role of the teacher, and expanding into a new realm of technological possibilities for rural educators.

- For Ellen, the transformation was in the way in which she thought about herself. It was not an external event such as a better job or a promotion. It was deepening her awareness of her own abilities and a spiritual sense of her purpose in life.

I was especially pleased with the transformation that I saw in Ellen, who seemed the most changed. For someone who started out insecure with a low opinion of herself and her capabilities, it was wonderful to see her blossom into a confident and skilled woman who was willing to keep on learning and helping her students to grow.

Finally, I have thought about what I have learned from doing this study. Before I came to USD, I worked in the training field for business/industry. The world of K-12 teaching was new to me. Although I do teach courses in training at USD, I also teach other courses in the TET program that are taken by K-12 teachers. The DIAL students were my first exposure to K-12 teachers, and as a result I learned a lot from them about what it is like to be a teacher and the problems that they face. During the study itself I had the chance to see their environments and gain a better understanding of, as well as an appreciation for, these teachers. There were so many interesting comments that I had to leave out of this write-up because they were not relevant to my research questions. Doing qualitative research is like uncovering buried treasure.

Study Limitations

In retrospect, I could have chosen one or two negative case study examples (i.e., students who showed only modest achievement and who did not appear to have changed). This would have provided a clearer basis of comparison for the positive case studies.

There are also a couple of students who, to this date, have still not finished the program, for a variety of reasons. This could have been looked at as well.

All of my four subjects were middle-aged women. I chose them because they were exceptional learners. I do not know whether the combination of their gender and age might have been related in some way to their success.

Another limitation of this study was that I did not know these students at the beginning of their program. When I was hired at USD, the students had already taken several courses. Had I known them at the beginning, I could have conducted interviews before their program began. This pre- and post-look would have provided a stronger basis for evidence of change. This is an area for research with another cohort of distance students.

My stake in the topic was that I felt compelled to write about the experiences of students that I saw as having made strides during the program. In South Dakota the very geography and rural way of life does not typically lend itself to lifelong learning. It is rare for a town to have a bookstore. These teachers, some of whom had taught for many years, received an opportunity that they would not have had without their schools being part of the DIAL consortium.

Another reason was my interest in transformative learning and the hope that educators might begin to think about it as a program goal, rather than just attempting to produce skills and knowledge. As Ellen commented, "technology should be used to inspire learners to become the most they can become." I hoped that those considering becoming distance graduate students – in South Dakota or elsewhere – might be motivated by the stories of these four learners.

Possibilities for Future Studies

Ellen's comment about a teacher being like a potter molding clay seems particularly apt. In this study, transformative learning occurred as an afterthought rather than being a planned part of the TET graduate programs. But what if it were planned right from the beginning? There are some questions to consider.

Should transformative learning be a goal for advanced programs teaching adult learners? What are the benefits? Will it help it lead students toward new possibilities for their lives and serving their communities? Will it encourage lifelong learning? Will students themselves find transformative learning a valuable goal as a way to expand their perspectives?

What are the indicators of transformative learning? Is there a way to describe these indicators clearly and precisely so that they can easily be identified? In other words, how will we know when students are displaying signs of transformative learning? Are there different degrees of transformative learning that can take place? (For example, was Ellen's reaching a spiritual awareness at a higher level than someone exploring new career possibilities?)

If we agree that transformative learning is valuable, then how can it be nurtured? How can we help adult students to experience such transformation? What strategies might we use to encourage transformational learning? For example, Kampiak (2003) suggests having students write autobiographies in which they reflect on their lives and use a central theme.

How do students who obtain transformative learning differ from those who do not? Including a wider variation of participants in the study would help to answer this question.

Are individuals within a certain age group or at certain stages of life more likely to value and attain transformative learning? McWhinney and Marcos (2003) state that "transformation becomes a goal most commonly at mid-life, when individuals are likely to suffer an awareness of loss and personal mortality" (p. 32). In my study, the subjects were all middle-aged. What if several different age groups were examined and compared?

There should be an evaluation component to research that looks at: (1) whether transformative learning is being achieved by the majority of students; (2) how we can improve the process; and (3) what effect transformative learning has had on the students and on institutions.

Once a transformation has taken place, will it continue or will individuals revert to their previous state and old ways of thinking? In the case of the DIAL cohort, the learning community officially dissolved once the program was over and students had graduated. Without this support, will they continue the progress they have made?

Conducting longitudinal studies in which adults are studied throughout their graduate school experience (and even afterwards) is recommended. This may make it possible to determine how to facilitate the transformative process of adult learners. It would also be easier to contrast the images of before and after the transformation. The result might be to increase not only their perceived value of the degree they received, but also their future contributions to society.

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