

**Teachers as Adult Learners:
Re-conceptualizing Professional Development**

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Abstract

This case study examined a professional development experience that was facilitated for career and technical education teachers to help foster the integration of academics and career and technical education. Unlike most professional development experiences that treat teachers as passive learners, this professional development experience was designed to reflect principles of adult learning. The findings of this study suggest that when principles of adult learning inform and shape professional development experiences for teachers, teachers are able to reflect on their practice, construct professional knowledge with their peers, and develop more collaborative relationships with their fellow teachers. The examined professional development experience was deemed as highly effective by the participants and the participants recommended that principles of adult learning be foundational to all future professional development efforts.

Introduction

For more than two decades, teachers have been asked to respond to various educational reforms, including changes in curriculum that require more authentic activities and assessments; integrate state standards into the curricula; prepare students for standardized assessments; and include other innovations. These complex changes require teachers to rethink their beliefs about teaching and practices in the classroom. Professional development that provides teachers the opportunity to investigate, experiment, reflect, discuss, and collaborate with other teachers can help them change their practice (Darling-Hammond & McLaughlin, 1995; Lieberman, 1995; Little,

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1993); however, the one-size-fits-all workshops that are usually offered try to disseminate new information to teachers in an effort to fix what is broken (Diaz-Maggioli, 2004).

This common approach to professional development “requires little in the way of intellectual struggle or emotional engagement, and takes only superficial account of teachers’ histories or circumstances” (Little, 1993, p. 22). In such situations, teachers have been told that other people’s understandings of teaching and learning are more important than theirs and that outside experts have determined the content and delivery of teachers’ professional development (Lieberman, 1995). Such experiences can turn adults into passive learners, who can develop negative attitudes that become a barrier in the learning process (Knowles, Holton III, & Swanson, 2005). In fact, research suggests that “teachers are loathe to participate in anything that smacks of one-day workshops offered by outside ‘experts’ who know (and care) little about the particular and specific contexts of a given school” (Wilson & Berne, 1999, p. 197).

The purpose of this manuscript is to explore the needs of teachers and the learning contexts that will help them to grow as professionals. By conceptualizing a learning environment suited for teachers as adult learners, we propose that professional development can provide meaningful learning experiences for teachers within the context of their classroom. We then discuss a successful professional development program that was designed around an andragogical framework, and we provide data on the teachers’ learning and collaboration that occurred as a result of creating a learning environment reflective of principles of adult learning.

Background

If teachers are considered as professionals capable of making complex changes to their practice, they need opportunities to learn with other professionals within the context of their profession. Knowledge is not discrete, but rather it is situated in the specific activity and context in which it is learned and used (Brown, Collins, & Duguid, 1989). Lave and Wenger (1991) suggested that learning is situated within a community of practice. New members of the community start on the periphery of the community, and as they learn knowledge from more senior professionals, they become more fully contributing members. Teachers, like other professionals, learn by participating in the activities that are socially and culturally situated within their profession (Jenlick & Kinnucan-Welsch, 1999). In the context of their teaching community, the individual teacher has access to the wealth

of information, resources, and knowledge of the other teachers. Participating in activities and discourse related to teaching, working together to construct new ways to improve practice, and getting feedback from more senior professionals are all opportunities for learning about teaching. From this perspective, professional development can support deep changes in teaching if it is situated in classroom practice, is on-going, and is collaborative with other teachers. Because this professional development experience is centered on the teacher as a professional, it also must consider the needs of the adult learner.

Assumptions about Adult Learners

Adults, unlike children, have their own unique learning needs (Knowles et al., 2005). Teachers are adult learners and their professional development is a form of adult education, which shifts the focus of professional development to the needs of teachers and the different contexts in which they learn and teach (King & Lawler, 2003). While there is pressure from state and federal mandates to improve student achievement by introducing reforms in curriculum and pedagogy, professional development also must address the learners' needs if it is going to help teachers to grow as professionals.

Knowles made several assumptions about the needs of adult learners (Knowles et al., 2005). First, adults learn what they need to know. The learners themselves must be aware of this need, and those who facilitate adult learning should take this principle into account as they design programs for adult learners. This means that teachers should be actively involved in planning their own professional development, based on what they believe they need to learn to be better teachers. In addition, teacher learning needs should be coordinated with the school and district plans for reforms and innovation (Hawley & Valli, 1999). In these situations professional development planning should be a collaborative effort among the various stakeholders, including teachers. It is important that teachers understand the importance of reforms and innovations and how they impact students so that teachers can take ownership in them and focus their learning opportunities accordingly.

A second assumption is that adults are responsible for their own learning, based on the assumption that adults have their own concept of self that is responsible for the direction of their own lives (Knowles et al., 2005). Adults resent learning situations in which they feel that they are being told what to learn. In many professional development efforts, for

example, teachers have no influence over the content or delivery and are treated like children in a typical elementary classroom. This situation turns adults into passive learners, and the learning process can be impeded by a negative attitude. Self-directed learning is more aligned with an adult's sense of autonomy (Knowles et al., 2005). Teachers should be active contributors to their own professional development experiences; they should be involved in the content and delivery of programs for them to be meaningful learning experiences. Thus, professional development should provide an environment for adults to have control over their own learning.

The role of the learners' experiences is also very important in the process of adult learning (Knowles et al., 2005). Adults have a wide range of diverse life experiences from which to draw upon. In addition, they will have many different backgrounds, learning styles, motivation, and needs that must be considered in the learning process (Knowles et al., 2005). Throughout their lives they will have experienced different types of learning, including experiential and cooperative learning, which probably were very meaningful to them. Thus, learning styles, teaching strategies, and activities that involve groups, peers, and collaboration should be included in the adult learning process. Professional development should provide opportunities for teachers to learn experientially and cooperatively on an on-going basis in the context of their workplace.

A fourth assumption about adult learners is they must be ready to learn; thus, it is important to schedule learning experiences to coincide with periods of readiness to learn (Knowles et al., 2005). For example, first-year teachers may not be ready to learn new instructional strategies in a professional development program aimed at introducing a school-wide instructional innovation. New teachers have many issues to deal with during their first year of teaching. The novice teacher is concerned with learning the rules, procedures, and daily tasks of teaching (Berliner, 1988). New teachers are intensely involved in their learning process, and they worry about their adequacy and survival as a teacher (Huberman, 1989, as cited in Levin, 2003). Issues such as classroom management, pupil discipline, and sense of adequacy are important in the teacher's early stages of development. Thus, professional development activities should take into account the stages of a teacher's development so that the teacher is ready to learn concepts that will help him or her be a better practitioner.

Another assumption of adult learning is that adults are problem-centered in their orientation to learning; they are motivated to learn if they perceive that what they learn will be immediately applicable to their life or work situations (Knowles et al., 2005). Professional development

experiences should provide content that is directly applicable to the teacher's practice. Teachers often complain about professional development content that is too theoretical and not useable in the classroom. They want practical strategies and ideas that they can immediately apply in their practice. Consequently, the professional development experience should be a venue for teachers to collectively articulate and address issues, problems, innovations, and/or reforms as they relate to classroom practice.

Finally, adult learners respond to external motivators, but internal motivation is more powerful (Knowles et al., 2005). External motivators might include salary increases, higher status, job titles and perks, incentive pay, academic credit, or promotions; but internal motivators, such as job satisfaction, the desire to grow, improved self-esteem, and quality of life, are usually more important to adults in their learning process. Sometimes, however, barriers such as time constraints, attitudes towards learning, and programs that ignore adult learning principles block these internal motivators (Knowles et al.).

Conditions that help to motivate adults and that should exist in adult learning programs include: (a) an atmosphere of inclusion and respect in which participants feel welcomed; (b) relevant learning experiences that help participants to develop a favorable disposition toward learning; (c) challenging learning experiences that involve the participant's perspectives and values; and (d) a program that engenders competence by offering an authentic assessment that helps participants to connect their learning experiences to real-life needs (Wlodkowski, 2003, pp. 40-45). Thus, the professional development program should offer teachers a respectful environment that provides meaningful learning experiences, opportunities to practice what they learned in their own classrooms, and feedback and support from peers (Wlodkowski, 2003).

Re-conceptualizing Professional Development for Teachers

In planning professional development for adults, six principles that are "grounded in the literature and practice of adult education" (Lawler, 2003, p. 17) should be considered: Professional development should (a) create a climate in which participants feel respected; (b) encourage their active participation; (c) build on their experiences; (d) employ collaborative inquiry; (e) guide learning for immediate application; and (f) empower the participants through reflection and action based on their learning (Lawler & King, 2000, as cited in Lawler, 2003, pp. 17-19). Such principles can be found in collaborative professional development if designed and delivered

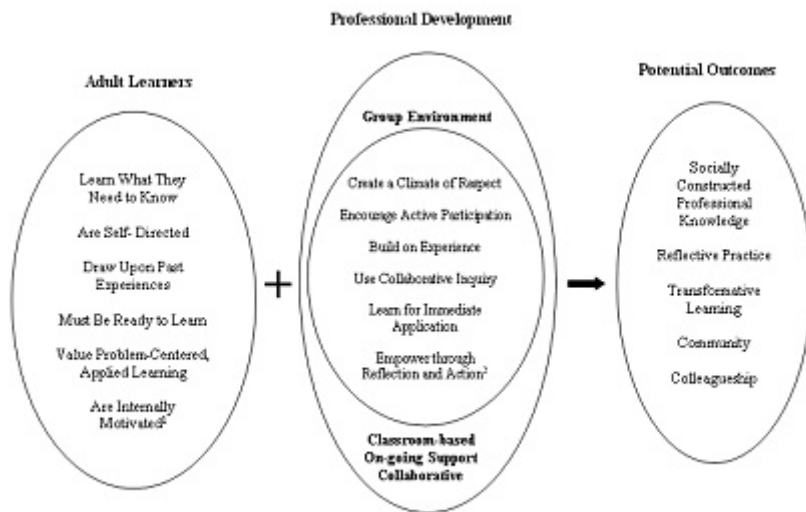
with adults in mind. Such collaborative efforts should provide on-going support and feedback in an environment that encourages learning and supports change. In addition, professional development for teachers that is learner-centered as opposed to content-centered can “help develop the ability to learn from experience, to integrate knowledge, and to think reflectively” (Daley, 2003, p. 29). As teachers have learner-centered experiences in their professional development, the hope is that they will develop more learner-centered experiences for their own students (Daley).

The assumptions about adult learners, as illustrated in Figure 1, provide a foundation for creating a group professional development experience for teachers that promotes a positive learning environment. The characteristics of such a learning environment should include a climate of respect, active participation of learners, opportunities to draw upon prior experiences and use collaborative inquiry, learning for immediate application, and empowerment through reflection and action. If the professional development environment provides opportunities for classroom-based experimentation, on-going support, and collaboration and if it considers the unique needs of the adult learner by creating an environment that respects and values teachers’ knowledge and experiences and empowers them to act, then there are several potential outcomes. Teachers can construct professional knowledge with their peers and become more reflective practitioners in the process. They may also experience transformative learning as they open up their frame of reference to new ways of teaching and learning. Finally, working collaboratively to become better practitioners has the potential to create a sense of community and collegiality among teachers as they share their knowledge, support each other, and become more caring professionals.

Creating Meaningful Professional Development for CTE Teachers

While the literature recommends professional development that is collaborative, classroom-based and ongoing, much of the professional development offered to teachers during in-service work days often follows the typical training model. A disconnect exists between professional development that promotes teacher learning and change and the one-time seminars that teachers often receive (National Commission on Teaching and America's Future, 1996; Public Education Network & The Finance Project, 2005). Career and Technical Education (CTE) teachers, in particular, need professional development that teaches them collaboration skills and

Figure 1: Framework for Re-conceptualizing Professional Development for Teachers



Note: See Knowles, Holton III, & Swanson, 2005, pp. 64-68 and Lawler & King, 2000 as cited in Lawler, 2003, pp. 17-19.

strategies to help them integrate their curriculum with academic skills, especially with the rigorous student academic requirements set forth in recent federal legislation. Such professional development needs to provide learning opportunities that help teachers to work collaboratively with other teachers (including academic teachers), experiment with different integration strategies, and modify their teaching practices based on what they have learned.

In Spring 2006 a state career and technical education agency, working with two state universities, implemented a professional development course to prepare CTE teachers to integrate reading, writing, and math skills into their curricula. The course was developed and taught by master teachers with the support of university faculty, was available for academic or in-service credit, and offered a \$250 incentive stipend to course participants. The professional development experience was open to both CTE and academic teachers, which provided opportunities for teachers to collaborate

and learn from their peers, and it used a teachers-teaching-teachers approach.

Teachers teaching their peers is a common form of professional development in the integration literature (Stasz, Kaganoff, & Eden, 1994), and “a powerful way of linking professional development with team building” (Finch, 1999, p. 11). In addition to participating in teamwork and collaboration, teachers teaching teachers can also be used informally to help peers learn skills and knowledge associated with specific lessons. Teachers teaching teachers can have positive outcomes, including increased opportunities for teacher leadership, increased communication and collaboration, and increased learning among teachers (Rolheiser, Ross, & Hogaboam-Gray, 1999). Asking teachers to share teaching strategies with their peers also can reduce teachers’ isolation (Rolheiser et al., 1999). Peers can share their experiences and prior knowledge with other teachers to construct new meanings and behaviors. As part of this teachers-teaching-teachers approach, the master teacher invited three guest speakers—teachers of math, reading and writing—to present materials in their area of expertise. Table 1 shows the units (or modules) that were covered during the course.

Table 1: Integration Course Topics

Unit	Topics
1	Why Integrate/Overview
2	Testing and Assessment; Teachers take COMPASS test
3	Approach & Delivery: Math; Guest Speaker
4	Approach & Delivery: Reading; Guest Speaker
5	Approach & Deliver: Language Arts; Guest Speaker
6	Action Research and Introduce Final Project Independent time to collaborate with others, develop unit and evaluation, and present lesson/unit
7	Bringing It All Together—Teachers showcased their integration projects; Final Reflection Papers and Course Surveys completed

**Applying Principles of Adult
Learning to the Integration Course**

To collect preliminary data from teachers who participated in the integration course, a survey was administered at the end of each course regarding the learning and collaboration that teachers experienced in the

course. In addition, teachers were asked to complete a final reflection paper on their experiences. Qualitative and quantitative data from these two sources were collected and analyzed for teacher's comments on their professional development experience.

In addition to the course data, a research project (Sturko, 2007) was launched in Fall 2006 to study teacher learning and collaboration in two different professional development contexts, one of which was the integration course. Six CTE teachers, who participated in one or both of the professional development experiences, served as individual case studies on teacher learning and collaboration. Data were collected throughout the study and analyzed to better understand the teachers' learning and collaboration in the specific learning environments. Data were also analyzed to determine if the integration course adhered to the six principles of adult learning by (a) creating a climate of respect; (b) encouraging active participation; (c) building on experience; (d) employing collaborative inquiry; (e) learning for immediate application; and (f) empowering through reflection and action (Lawler & King, 2000, as cited in Lawler, 2003, pp. 17-19). The next sections present some of the data collected from the integration course participants and summarize the findings from the study.

Principle 1: Create a Climate of Respect

The integration course created a climate of professional respect for the teachers. Participation in each professional development experience was voluntary, not mandatory. Teachers could register for either in-service or academic credit if desired, and a money incentive was provided to offset their cost of registration. Teachers indicated that they participated to learn integration strategies, improve student achievement, and take advantage of the monetary incentive and for other personal development reasons (Integration Course Surveys). Unlike other professional development that often approaches the learning process as a transmission of information to teachers and ignores their professional knowledge and years of experience, participants reported that the integration course created an environment in which the teachers' professional knowledge and experience were valued and shared. This sharing allowed them to be active participants in the learning process and promoted collaboration with academic teachers, which helped to create a collegial and professional environment and helped to enhance the knowledge of the CTE teachers. The teachers valued this type of environment and expressed their appreciation for opportunities to share ideas and collaborate with their peers. One CTE teacher commented,

With the “No Child Left Behind” act, it has become very evident that all aspects of the education field must work together in an integrated fashion for the success of the students. As CTE classes continue to grow, we need to work more closely with core instructors to complement and reinforce what the students are learning in a career-based atmosphere. (Integration Course Reflection Paper, Spring 2006)

In addition, the integration course was facilitated by a master teacher from the teachers’ high school rather than an outside expert who often does not understand the particular context in which the teachers work. The professional development was successful in creating a climate of respect and professionalism that facilitated the learning process.

Principle 2: Encourage Active Participation

The integration course encouraged the teachers to actively participate in the learning process. While the integration course had some direct instruction and modeling by the master teacher, the learning process focused on teacher participation through experimentation and reflection. One teacher said modeling was an effective way for her to learn because she could see another teacher successfully using the strategy (Teacher Interview, 10/24/06). In particular, this course participant found that the master teacher was “well-prepared, modeled often, and her delivery was interesting” (Integration Course Reflection Paper, Spring, 2006). The modeling of the master teacher encouraged the teacher to experiment with integration strategies in her own classes.

Teachers were expected to experiment with and practice the integration strategies in their classrooms and report back their thoughts and ideas for changes or improvements. This experimentation required by the integration course gave some teachers a higher level of comfort at using integration strategies. One teacher commented, “I am more willing to try things and look at ways to incorporate the strategies into my classes” (Integration Course Reflection Paper, Spring, 2006). Reflection, both in writing and through group discussion, helped teachers to think about their lessons, their students, and how to improve what they do in the classroom. Class discussions encouraged further reflection, peer support, and knowledge construction among teachers.

Experimentation and reflection are part of the experiential learning cycle that promotes learning in individuals (Kolb, 1984). In the integration course, teachers learned by doing and working with other professionals.

This professional development experience was far from a dissemination activity (Wilson & Berne, 1999) that can create an environment in which teachers become passive participants in the learning process. Teachers were actively engaged in the learning and collaboration that took place in both professional development experiences.

Principle 3: Build on Experience

Professional knowledge is situated in practice (Brown et al., 1989; Lave & Wenger, 1991). As professionals, teachers' practice is an important source of learning for themselves and their peers. Sharing experiences from the classroom can help teachers to better understand their practice and their students, and it helps teachers to grow as professionals (Clark, 2001). The integration course encouraged teachers to experiment with new integration strategies and to share their experiences with peers. In addition, the classroom experiences of the academic teachers, especially those in English and math subject areas, were helpful in the CTE teachers' learning process. The master teacher made an effort to connect teachers' learning with their prior experiences in the classroom, and this helped teachers in the construction of professional knowledge. One teacher explained,

I think that hearing from other teachers in different subject areas say that "you don't have to be a perfect writer to grade writing assignments" was helpful to me....I also got to hear about what others were trying and think about how I could use that in my own class. (Integration Course Reflection Paper, Fall, 2006)

The integration course was also beneficial to the teachers because it provided information that was relevant to their classes and could be used immediately in their lessons. One participant commented that the course was valuable to her because she "developed better class materials" (Integration Course Survey). She explained, "Everything that I created I used in my class and for most will continue to use" (Integration Course Reflection Paper, Fall, 2006).

Principle 4: Employ Collaborative Inquiry

Teachers work in an environment that often encourages isolation and individualism (Hargreaves, 1992); however, collaboration is helpful in promoting teacher learning and changes in teacher practice (Darling-Hammond & McLaughlin, 1995; Fullan, 1995; Little, 1993). Teachers can collaborate in a variety of ways such as helping to develop and deliver

lessons; sharing activities and strategies; working together with difficult or disengaged students; cooperatively working to increase student skills in a particular area; observing one another's classes and giving targeted feedback; and providing support and encouragement to one another. The integration course was focused on teachers collaboratively learning integration strategies. Both CTE and academic teachers participated in the course, so class discussions provided opportunities for teachers from various subject areas to exchange ideas from their practice about integrating academic skills into their lessons. The master teacher structured collaboration with peers into the course activities; participants were required to work with a teacher in an academic subject area in developing and delivering an integrated lesson. The teachers found working with teachers in other discipline areas to be a helpful and meaningful activity. Several CTE teachers commented on the opportunity to collaborate with peers:

Teachers were supportive of one another and enthusiastic about implementing other teachers' ideas into their classes. (Integration Course Reflection Paper, Spring 2006)

Even though this was supposed to be a class for professional technical teachers, it was helpful to have academic teachers in the class. I feel I took a lot from... the sharing of ideas among teachers. (Integration Course Reflection Paper, Spring, 2006)

After talking with a math teacher and getting ideas about how to approach the problem, I think I will have better luck next year explaining the formulas and how to compute them. (Integration Course Reflection Paper, Spring, 2006)

Several of the academic teachers were very supportive of integration and were happy to collaborate with CTE teachers. One academic teacher commented:

This class opened my eyes to some of the alternate possibilities of partnering with [CTE] teachers....We fortunately had about half academic teachers and half CTE teachers [in this class]. We could ask questions and get ideas from one another about teaching strategies for different situations. (Integration Course Reflection Paper, Spring 2006)

A math teacher remarked,

I'm excited to know that there are competent teachers down the hall

reinforcing what I'm teaching and who care enough to ask me about my techniques and terminology so as to give continuity to the students' math education. They provide the practical, real-life, problem-solving applications that I don't get to spend enough time on. (Integration Course Reflection Paper, Spring 2006)

Another math teacher wrote, "I look forward to helping the CTE instructors with their math integration" (Integration Course Reflection Paper, Spring, 2006).

Teachers learned about the academic content area, such as reading or writing, and they learned how to better implement new strategies in their lessons. One teacher noted,

The [integration] course has had a positive influence and has been successful in relieving some of my anxiety and frustration....I have discovered that I do not have to be an English teacher, nor a reading specialist, to have meaningful reading experiences in my classroom. (Integration Course Reflection Paper, Spring 2006)

The master teacher also encouraged discussion and feedback from both the CTE and the academic teachers in the course, which helped to create a climate of mutual respect among the teachers. With guest teachers who shared their expertise in reading, writing, and math, the CTE teachers had a supportive environment to experiment with integration strategies and discuss their classroom experimentation with peers. CTE teachers, together with their academic colleagues, were encouraged to inquire into their practice, seeking ways to enhance and improve as professionals.

Principle 5: Learn for Immediate Application

Adults are interested in applying their learning to problems and issues they face in their work and in their lives (Knowles et al., 2005). This connection between professional development and practice is an important one for teachers; teachers must be able to immediately apply their learning to the classroom. One of the most important outcomes of the integration course was the teachers' ability to obtain useful, relevant information for their practice. One teacher noted,

I'm getting a lot out of the class because...I'm able to gather some more strategies with every [class]....Having to write lesson plans ...helps me to think about things that I really need to incorporate, whether it's a small 15-minute...math lesson, or a reading assignment. I really need to be doing more of that and enhancing the [students'] skills. (Teacher Interview, 10/18/06)

Not only did teachers acquire strategies that they could immediately use in their lessons to enhance their students' reading, writing, and math skills, but they also gained confidence in using these strategies through their experimentation and reflection during the course. One teacher remarked, "The structure of the class allowed me to not only work on the lessons between class times but also implement the lessons" (Integration Course Reflection Paper, Fall 2006). These strategies helped teachers to increase their pedagogical knowledge and expertise. This professional development experience was relevant to teacher practice and thus meaningful to the participants.

Principle 6: Empower through Reflection and Action

The last principle is probably the most important: Professional development must empower teachers through reflection and action. Learning through experience is powerful and involves a cyclical process with four stages: experience, reflection on the experience, abstract reconceptualization of the experience to consider other possibilities, and active experimentation, which leads the learner back to the first stage of the learning cycle (Kolb, 1984). This process of experiential learning helps to empower learners because they are able to take action and make changes to their environment (Lawler, 2003). The integration course used experimentation and reflection as part of the learning process. It challenged teachers to look at their own practice to find ways to enhance it for improving student performance. One teacher explained,

Through this class, I questioned my current teaching techniques and how they could be improved or modified to help students prepare for their future....I believe that any teacher would benefit from this class, whether CTE or academic. (Integration Course Reflection Paper, Spring 2006)

Another teacher commented, "The single most valuable portion of this class has been the opportunity afforded to reflect on past teaching and to creatively integrate academics into my daily classroom work" (Integration Course Reflection Paper, Spring 2006). Through authentic assessment activities, teachers were required to use integration strategies in their lessons, reflect upon student outcomes from those lessons, and share their reflections with their peers. This empowered the teachers by helping them to gain confidence and enhance their pedagogical knowledge.

Significance of Findings

In this era of mandatory educational reform, professional development for teachers has become an important component of the reform process. Teachers not only need to learn about innovations and programs but also how to change their teaching practice to implement such reforms to bring about improvements in student learning. CTE teachers, in particular, have been tasked with complex changes through federal legislation. Such changes involve not only creating curricula that incorporate state and industry standard, but also promote academic skills to better prepare students for the 21st century workplace and for postsecondary education, which many occupations require. CTE teachers have been tasked with integrating reading, writing, and math skills into their technical curricula, which requires changes not only in the way they teach in their classrooms but also how they think about teaching in general. To bring about change in CTE teacher practice, professional development should introduce teachers to integration and help them learn how to implement integration and related assessment strategies in their classroom.

The importance of introducing integration to teachers in a meaningful professional development experience was a key to the success of the program. Traditional in-service professional development often does not consider teachers as adults with unique learning needs; however, the six principles of adult learning incorporated into the conceptual framework of this professional development created a learning environment in which teachers could grow as professionals. The course designers initially created a climate of professional respect by involving master teachers in the design and delivery of the course and by inviting both academic and CTE teachers to participate. The design of the course encouraged teachers' active participation by providing opportunities to experiment, reflect, and model integration strategies within the context of their classroom, and by providing opportunities to collaborate with colleagues in the process. Teachers could draw upon their professional experiences related to integration, as they practiced the strategies and provided feedback to their peers. These authentic activities were meaningful to teachers because they considered the context of individual teachers' needs and provided practical and immediate application in the teachers' learning process.

Teachers, like other professionals, need both intrinsic and extrinsic motivation to participate in professional development. The extrinsic motivations for this course included in-service or academic credit along with a monetary stipend. More importantly, however, teachers were offered

a stronger intrinsic motivation that included collaboration with colleagues and an opportunity to learn practical strategies which they could immediately incorporate into their lessons. Experimentation and reflection, along with peer feedback, helped the teachers to gain confidence in their abilities to integrate their curriculum, deliver it to their students, and assess the outcomes. It was through these course activities that teachers were empowered to act on what they had learned about integration.

In conclusion, because of the design and delivery of the course, teachers were able to reflect on their practice, construct professional knowledge with their peers, and develop more collaborative relationships with them. The integration course was a successful professional development experience for teachers because it accomplished the introduction of a pedagogical innovation and provided teachers with the experiences they needed to practice, collaborate, and apply to their practice what they learned about the innovation. As future professional development activities are planned, the principles of adult learning that guided the design and development of the integration course should be considered as foundational in the professional development process.

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