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Supporting Online Learning for Advanced Placement Students in Small Rural Schools: Conceptual Foundations and Intervention Components of the Facilitator Preparation Program

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This paper examines the need for interventions to support students who are taking advanced placement courses in small rural districts and describes the Facilitator Preparation Program (FPP) as a strategy to address this need. Issues in the delivery of Online Distance Education (ODE) in small rural schools are summarized and the conceptual foundations and service delivery considerations of the FPP are outlined. Future research needs are also considered.

Many small rural schools have difficulty staffing teachers for advanced curricular courses (Cross & Dixon, 1998). These difficulties are often rooted in a variety of factors that are beyond the direct control of school administrators and community stakeholders (Monk, 2007). In an effort to circumvent staffing difficulties, online learning programs have been viewed as a way to provide advanced placement coursework for high achieving students in small rural districts (Barbour & Mulcahy, 2006). However, the success of such programs is not well documented and there are a variety of issues that impact rural students' completion and performance in AP online courses (Burney & Cross, 2006; Marcel, 2003). Consequently, there appears to be a need for programs that support rural students as they participate in online distance learning classes.

Accordingly, the goal of this paper is to examine issues in the delivery of advanced placement courses in small rural schools and to present the conceptual foundations and delivery components of an intervention program developed to support online learners in small rural schools—The Facilitator Preparation Program (FPP). First, the need for online distance education in small rural schools is examined. Second, issues in online distance education in small rural schools are summarized. Third, conceptual foundations of the FPP are presented. Fourth, the delivery format and intervention components of the FPP are described. Fifth, future research needs on the delivery and impact of the FPP are considered.

The Need for Distance Education in Small Rural School Districts

Across the United States, the context and resources of rural communities provide unique challenges in meeting the instructional needs of high achieving students (Cross & Burney, 2005; Marcel, 2003; U.S. Department of Education, 2000). One third of the public schools in the United Sates are rural and they serve approximately 10 million students (Johnson & Strange, 2007). Rural students are more likely to attend very small schools (i.e., less than 200 students), and over 50% of rural secondary schools have fewer than 400 students (Hobbs, 2004; Provasnik, KewalRamani, Coleman, Gilbertson, Herring, & Xie, 2007). Issues of critical mass combine with geographic isolation to limit the number of students in rural districts who are interested or prepared for advanced placement coursework (Barbour &

Mulcahy, 2006; Hammer, Hughes, McClure, Reeves, & Salgado, 2005). In addition, rural schools have difficulty attracting and retaining teachers who are experienced and qualified to teach advanced placement and associated perquisite courses (Beeson & Strange, 2000; Herzog & Pittman, 1995; Holloway, 2002). The difficulty in staffing such teachers in rural districts include social and cultural isolation, low salaries, insufficient resources and supports, multiple job demands, and competition from other districts (Gándara, Gutiérrez, & O'Hara, 2001; Monk, 2007). As a result, many rural districts have difficulty providing a comprehensive curriculum and advanced courses for high achieving students.

When difficulties in staffing schools combine with community population losses and resultant economic declines, some rural districts have elected to close or consolidate with neighboring districts (Jimerson, 2006; Schafft, Alter, & Bridger, 2006; Seal & Harmon, 1995). Yet, attending small rural schools has been shown to be beneficial and, in some cases, serves as a protective factor for rural youth from high poverty and ethnic minority backgrounds (Howley, 1995; Howley, Strange, & Bickel, 2000; Huang & Howley, 1993; Johnson & Strange, 2007; Nye, Hedges, & Konstantopoulos, 2000). Further, rural schools are often the community social and activity center and also serve as a primary source of employment. Therefore, school closures often initiate or exacerbate community downturn (D'Amico, Matthes, Sankar, Merchant, & Zurita, 1996; Jennings, Swidler, & Koliba, 2005; Lyson, 2002; Schafft et al., 2006). Consolidation can have other adverse outcomes including a lowered sense of community and school connection for students and less alignment between schools and community needs or values (DeYoung, 1995; Tompkins, 2006). Thus, many rural educators and community stakeholders desire to avoid school closure or consolidation (Jennings et al., 2005; Jimerson, 2006; Lyson, 2002).

The use of online distance education (ODE) has been proposed as an alternative solution to overcoming these challenges, preventing school closure or consolidation, and providing a comprehensive curriculum and advanced courses (Barbour & Mulcahy, 2006; Burney & Cross, 2006). Research has demonstrated that ODE is as effective as traditional classes in terms of learning outcomes (Bernard et al., 2004; Cavanaugh et al., 2004; Cradler, McNabb, Freeman, & Burchett, 2002; Hobbs, 2004; Waxman, Lin, & Georgette, 2003). Recent improvements in the necessary infrastructure and affordability of technology have made rural internet availability comparable to non-rural areas and ODE a viable option (Hobbs, 2004; Jimerson, 2006; Malecki, 2003). Accordingly, rural districts are increasingly using ODE and perhaps more so than urban and suburban schools. In fact, a recent report indicated that the proportion of rural districts (46 percent) with students taking ODE is nearly twice that of urban (23 percent) and suburban (28 percent) districts (Setzer & Lewis, 2005). Universities and rural community colleges are likewise expanding their ODE offerings (Cejda, 2007; Saba 2005). Further, internet usage is a necessary component of contemporary business, including those in rural areas, and is increasingly used for employee training (Malecki, 2003; Saba, 2005). Thus, experience with ODE during high school may help rural youth prepare for postsecondary educational and local job opportunities.

Issues in Online Distance Learning in Small Rural Schools

While ODE appears to be a promising option for addressing staffing difficulties for advanced curricular needs in small rural school districts, the literature also suggests that several factors need to be addressed. Although ODE appears to be effective in terms of learning, recent studies report that 50-70% of students who take advanced online courses do not complete them (Barbour & Mulcahy, 2006; Carr, 2000; Roblyer, 2006; Rovai, 2002; Simpson, 2004). Yet, little is known about factors that contribute to the non-completion of advanced online courses and relatively little research has focused on ways to improve course completion and student achievement. In addition, most work in this area has been conducted at the post-secondary level and has involved non-rural students and schools (Rice, 2006). As many rural schools have a strong need to use ODE to address the challenges they face, it is important that programs are developed to promote rural students' success in advanced ODE courses. Accordingly, the goal of this section is to describe issues that should be considered in the design of interventions aimed at supporting rural ODE students in AP coursework.

There is tremendous diversity across rural students and schools (Coladarci, 2007; Kannapel & DeYoung, 1999; Singh & Dika, 2003). Nonetheless, there are common experiences and perspectives unique to rural students and schools that are relevant to the development of rural ODE support programs. Each of these factors is briefly described below.

Individuals in rural areas tend to place substantial importance on relationships with others (Haas & Lambert, 1995; Singh & Dika, 2003). A lack of interaction and isolation is common in ODE (Benson, Johnson, Taylor, Treat, Shinkareva, & Duncan, 2005; Hannum & McCombs, 2008; Rovai, 2000; 2002). Thus, rural students may find the ODE experience particularly difficult. Limited interaction and isolation are also considered a key factor in the lower rates of ODE course completion (Barbour & Mulcahy, 2006; Marcel, 2003). Consequently, efforts to improve rural students' outcomes in ODE will likely need to focus on rural students' interactions and support from others.

Many rural schools are by their nature small (Hobbs, 2004; Provasnik et al., 2007). Though research has rarely involved rural schools or compared them to urban or suburban schools (Hardré, 2007; Hardré & Sullivan, 2008),

small rural schools are typically characterized by long-standing and intimate student-teacher relations which contribute to a "family-like atmosphere" (Burney & Cross, 2006; Herzog & Pittman, 1995). In contrast, ODE has an inherent physical distance between instructors and students (Moore, 1993; Moore & Kearsley, 1996; Rovai, 2002). Further, it has been suggested that there is often a psychological distance between ODE instructors and students (Moore, 1993; Moore & Kearsley, 1996). This distance, also referred to as *transactional distance*, stems from the communication limitations in ODE such as the absence of verbal or non-verbal cues and delays in responses. This distance may also be evident in traditional courses (Rumble, 1986), but some recent findings suggest that distance education courses may have a greater psychological or transactional distance. Specifically, Offir and colleagues (Offir, Lev, Lev, Barth, & Shteinbok, 2004) compared a traditional and video-based distance education course and found no differences in the number of student-teacher interactions. However, student-teacher interactions in the video-based course involved significantly less explanation and fewer non-verbal cues and student initiated questions. Furthermore, online instructors may be constrained by having to teach a standardized curriculum to large numbers of students (Hannum & McCombs, 2008). It is unrealistic to expect the online instructor to have a personal relationship with every student in an online course when they may have multiple sections of a course, with as many as 75 or 100 students or more. Thus, instructors of ODE courses are typically unfamiliar with students and are not able to provide the level of individualized support and personal relations that rural students may be accustomed to receiving. This lower level of support and the student-teacher disconnect may be especially challenging for rural students that are used to having close ties with teachers who live and work in the same small community and are well-acquainted with students' families (Hardré, Sullivan, & Roberts, 2008). As familiar adults and close student-teacher relations are characteristic of small rural schools, it is likely that there are school personnel who could provide the connection and support often absent from ODE. Thus, an approach capitalizing on this strength of rural schools may be both practical and essential for improving rural students' completion of and learning in ODE.

As a related factor, rural students often have a strong attachment to place and this includes the people in and the natural features of an area (Brehm, Eisenhauer, & Krannich, 2004; DeYoung, 1995; Howley, Harmon, & Leopold, 1996; Seal & Harmon, 1995). Attachment to place along with fewer local occupational and educational opportunities can lessen the importance of education for some rural students (Blackwell & McLaughlin, 1999; Crockett & Bingham, 2000; Hardré, 2007; Hardré, Crowson, Debacker, & White, 2007; Hektner, 1995; Rojewski, 1999; Seal & Harmon, 1995). This may occur because some rural students prefer to remain in their community and maintain their attachments rather than leave their community to pursue postsecondary education. In addition, the perception of fewer opportunities may lessen the perceived long-term benefits of schooling. Though it is often the social hub, some rural students may also dislike school when they feel the work is too demanding or they are bored (D'Amico et al., 1996). These suggest that some rural students may not be as motivated and engaged particularly when taking advanced courses that are more difficult, demanding, and perhaps seem less relevant. Given that ODE courses also typically have substantially lower completion rates (Barbour & Mulcahy, 2006; Marcel, 2003), efforts to improve rural students' success should consider motivation.

A curricular reform known as place-based education is prevalent in rural schools (Gruenewald, 2003; Haas & Nachtigal, 1998; Jennings et al., 2005; Rural School and Community Trust, 2003; Theobald, 1997). Place-based education makes learning more meaningful and engaging by situating learning within the context of the local community and environment, needs and interests, places and people. An intervention that likewise supports the need to address student motivation by, for example, suggesting strategies for making learning more meaningful and relevant may be congruent with approaches already used in rural schools. Therefore, rural schools may be more apt to adopt such intervention strategies as these may mesh with current pedagogic beliefs.

In sum, rural students may be more successful in an ODE courses when the context is commensurate with their typical learning situation, needs, and interests. It is likely that this is important for all students in an ODE and other learning situations. However, given that the school experiences of rural youth are often characterized by more close student-teacher relations, an ODE experience that has a level of interaction and support not only comparable to that in a traditional course or other schools but also more characteristic of that encountered by students in rural schools may be important. An ODE setting that recognizes, utilizes, and appropriately addresses individual rural students' and schools' strengths may also be more conducive to retention and learning. Finally, efforts to make class activities and work meaningful and relevant to rural students' interests and attachment to place may increase motivation and engagement and thereby improve outcomes. Accordingly, the FPP was developed with these issues and aims in mind as a guide for both the conceptual foundations and the delivery model.

Conceptual Foundations of the Facilitator Preparation Program

In our efforts to develop a program to support rural ODE students, a primary aim was to design a model that is responsive to students as learners and that promotes their engagement with both the content and with other individuals. Accordingly, the FPP was established with a

focus on Learner-Centered Principles (LCPs). LCPs are based-on over 100 years of convergent theory and research about learning and development (Work Group of the Board of Educational Affairs, 1997). These principles are robust and represent the best knowledge about human learning and development and are applicable to all levels of reform and schooling including ODE (McCombs & Vakili, 2005). The LCPs are categorized into four broad areas or domains: cognitive and metacognitive factors, motivational and affective factors, developmental and social factors, and individual-differences factors (for more details see APA, 1997; Hannum & McCombs, 2008; McCombs & Vakili, 2005). These domains are holistic, overlap, and combine in numerous and complex ways to influence learners and learning. Each domain is briefly described below.

Cognitive and metacognitive factors

This domain refers to thought processes (i.e., cognitive factors) involved in learning as well as the strategies students use to learn and their reflections about their thought processes (i.e., metacognitive factors). The LCPs indicate that the learning process, particularly for complex material, is most effective when students intentionally construct meaning from information and experience, are provided support and guidance over time to construct coherent representations of knowledge, can link new knowledge with existing knowledge in meaningful ways, and can use and create various learning strategies. In addition, the LCPs indicate that learning is influenced by various environmental factors such as culture, technology, and instructional or facilitator practices.

Motivational and affective factors

This domain refers to students' effort (i.e., motivational factors) and emotional states, beliefs, and interests (i.e., affective factors) that influence learning. The LCPs indicate that students' motivation is necessary for learning and that student motivation impacts what and how much is learned. In addition, students' affect (i.e., emotional states, beliefs, and interests) influences their motivation and tasks that are of optimal novelty and difficulty, are relevant to personal interests, and provide personal choice and control enhance intrinsic motivation.

Developmental and social factors

This domain refers to the previous experiences and learning (i.e., developmental factors) and interpersonal relations between students and teachers or facilitators (i.e., social factors) that affect current learning. According to this domain, students have different developmental and social learning experiences and opportunities. Thus, activities that account for these differences both between and within students are more effective. In addition, this domain indicates that students' interactions and relations with other students and relevant adults has a strong influence on learning.

Individual-differences factors

This domain refers to the differences between and within students (i.e., individual-differences) that influence learning. The LCPs indicate that individual students have different strategies and skills for learning and practices that account for differences in strategies, skills, culture, and background are more effective. In addition, setting standards that are appropriately high for individual students and assessing students on their progress towards achieving those standards are integral to learning.

The LCPs guide the current intervention not simply because they are research-based and applicable to ODE. The LCPs are also used in to guide the development of the FPP because they are commensurate with the characteristics of rural students and schools in several respects. For one, the LCPs are purposefully broad so these can be applied to diverse learners and contexts as well as various courses or subjects (McCombs & Vakili, 2005). The LCPs also indicate that individual differences in students should be considered. Therefore, these principles may provide a means for intervention facilitators to acknowledge and be responsive to the variability and uniqueness of rural students using ODE. Second, the LCPs stress the importance of interaction between students and other learners or supportive adults. In other words, the LCPs indicate that these human elements which are typically lower in ODE should be a central part of the distance learning experience (McCombs & Vakili, 2005). As rural students are more apt to prefer interaction and learn in such a context typical of small schools (Burney & Cross, 2006), the LCPs and an intervention explicitly integrating these may be more applicable and effective in this setting.

Finally, the LCPs indicate that attending to individual differences in, for example, culture and background as well as providing tasks that are of personal relevance and interest are more engaging and enhance learning. These notions are compatible with rural youths' attachment to place and the underlying ideas of place-based education. Specifically, these LCPs reiterate and support that educators or facilitators should attempt to make learning more meaningful. This might be achieved by, for example, prompting students' to consider whether and how what they are studying is evident in, applicable to, and useful for their community as is suggested by a place-based approach. Facilitators in rural schools may already be cognizant of and use these ideas in other situations (e.g., traditional classes). Therefore, the use of LCPs in the FPP model may simply validate and reinforce relevant practices. However, the LCPs may also provide additional support and confidence to facilitators as they help students make connections between ODE instruction and their previous, current, and future

learning activities. Given that this situation may be novel for both rural students and facilitators, this could be crucial.

Overview of the FPP Delivery Framework and Intervention Components

Many online distance learning programs require that schools provide a school-based facilitator to support students whom are taking distance learning courses (Kirby & Driscoll, 1997). Facilitators are distinct from course instructors and their basic role is to support and guide students. This includes troubleshooting computer problems, coordinating efforts with instructors and course administrators, monitoring student attendance, collecting homework assignments, proctoring exams, and helping students with any scheduling questions or problems students feel they cannot discuss with the instructors.

The Role of the Facilitator

The role of the facilitator is different from the ODE instructor in several respects. First, facilitators are directly available to students and are physically present when students are at a school computer and online during the schools' scheduled daily period for their students to be in the ODE class. In contrast, instructors are in a remote location, are not physically present, and may or may not be online or directly accessible during the time students are online as the course is asynchronous. The course is asynchronous in that students do not have a live and real-time interactive link to instructors through the use of, for example, satellite broadcasting or webcams. Rather, instructors and students largely communicate via non-live means such as posting assignments, comments, and reflections through threaded discussion boards in the course platform software (i.e., Blackboard Academic Suite) and by email.

Second, facilitators differ from instructors as facilitators do not teach content. Moreover, facilitators are not expected to have the requisite knowledge or skills to do so. Instructors are responsible for course design and delivery of all content. Instructors may ask facilitators to help check the completion of or to grade some tasks. In the current investigation, it was stipulated that facilitators need only be an employee of the school with a college education and that they do not need to be a teacher. Individuals who take on a facilitator role include principals, secretaries, librarians, coaches, and teachers of other subjects. Finally, facilitators are expected to help students with technical issues. For example, facilitators' responsibilities include trying to solve computer problems, accessing assistance if needed, knowing how to contact the technical support for their school and the course provider. Instructors also help students with these issues when they can, but often it is more difficult for instructors to provide the necessary assistance.

While it is expected that distance learning courses are supported by facilitators, the goal of the FPP is to provide an advanced form of facilitator training to include learner-centered approaches and strategies to promote students' engagement in ODE coursework. In addition to general facilitator training, the FPP training involves specific instruction on the conceptualization and application of learner-centered principles to distance learning courses.

Following the overview of the LCPs, FPP facilitators are provided scenarios depicting common issues and problems that arise for students in ODE. These scenarios are largely derived from research and experiences in pilot work with rural students and schools. These are intended to provide facilitators a better idea of what to expect and how the LCPs may help them deal with these situations. The scenarios are provided over a period of several weeks starting before the course begins and continuing over the first few weeks of the class. The scenarios are delivered in a multiple media format that includes text, audio clips, and images. Each scenario features one or more students with a problem to which a model facilitator responds. These include the following issues and topics.

FPP Topics and Scenarios

First day of school

This scenario presents strategies for introductions and ice-breakers. One goal is to model the creation of an atmosphere that allows students to collaborate, problem-solve and openly discuss anything course-related. Concrete activities are suggested and materials provided to build rapport between students and facilitators. Another goal is to underscore the importance of the facilitator's role in the classroom as being more than an administrator but rather a source of support.

Discussing assignments

This scenario models a facilitator setting aside a class period in the first week of the year to go over course logistics. Facilitators are asked to encourage students to brainstorm strategies for specific problems relating to technology, grades, being overwhelmed, or confusion with an assignment. In case the rigorous content is stressful for students, this scenario also provides facilitators with strategies to help students prepare for and deal with the increased academic press of advanced placement courses.

Student fears

This scenario depicts a reluctant student having a conversation with the facilitator concerning the students' fears about the course. The facilitator models some strategies that might be used for dealing with such issues.

Time management

This scenario features a student who tends to procrastinate and is discussing this with the facilitator. The facilitator covers a number of strategies for effectively organizing the workload.

Helping students help themselves

This scenario is designed to encourage students to interact with their online peers.

Too much work

In this scenario, a student is overwhelmed by the workload and is far less confident than the student initially appeared and believed. The facilitator models several strategies that address these.

Disengaged

A student who is at the top of the class during the first weeks of the course but later has falling grades and seems increasingly disengaged is portrayed in this scenario. The facilitator discusses this with the student to find out more about where the student is having difficulties and what may be the source.

Worries about grades

This scenario has a student who is considering dropping the course because of concerns about her or his online course grade being lower than typical and adversely affecting her or his Grade Point Average (GPA). The student is also having difficulties managing the workload that are an addition to numerous other responsibilities. The facilitator attempts to allay the students' anxieties by discussing college expectations and the benefits of taking challenging courses.

Supporting FPP facilitators

An important consideration of the FPP model involves creating a facilitator community in which facilitators who have a common course are able to share their experiences and learn from each others' perspectives and responses. Accordingly, FPP facilitators are provided an online discussion board related to each scenario and are asked to post their comments about the scenario, which LCPs they believe are evident, what they think the LCPs suggest could be done in the situation, and any comments about other facilitators postings. The goal is to establish a supportive discussion venue in which facilitators can collectively guide each other through unique or difficulty issues in a collegial manner that is founded upon learner-centered practices and approaches for promoting the engagement and success of students.

Another key feature of the intervention is the use of data to provide feedback and professional development for facilitators through the duration of the course. Specifically, students and facilitators complete rating scales assessing relevant LCPs and related factors including beliefs about learning, motivation, class experiences, and facilitator support. The results of this survey are aggregated at the classroom level and provided to FPP facilitators. Facilitators are provided with direct feedback sessions. This involves a brief phone discussion between the facilitator and an FPP Support Administrator. A main focus of the survey and feedback session is how students perceive their ODE setting in terms of LCPs and related factors and the implications for adapting and augmenting current strategies.

Research Needs and Considerations

The Facilitator Preparation Program has been developed to be a response to issues that impact the successful completion of advanced curricular distance learning coursework for students from small rural school districts. While this model addresses a significant need and has been designed to incorporate scientifically validated learning principles, the efficacy of this model has not yet been established. Before this model should be implemented at wide scale there is need for evaluations of the efficacy of the FPP. Accordingly, a randomized control trial efficacy evaluation is currently underway that is being conducted in over 35 states with over 40 intervention and 40 control schools. This study focuses on students who are taking advanced placement courses in English literature. Preliminary findings suggest that the FPP does enhance student retention and course completion. Specifically, students with facilitators that received the FPP had a 66% completion rate whereas students with facilitators that received the standard training used by the course provider had a 43% completion rate (Hannum, Irvin, Lei, & Farmer, 2008). Additional analyses will examine the impact of the model on academic achievement. Further randomized control trials are needed to examine the uses of this generic model with courses in other academic areas, particularly science and math.

In addition to research on the effectiveness of the FPP, there is a need for qualitative and quantitative studies that examine the process factors and variables that impact students' adaptation, motivation, and achievement in ODE courses. Also, there is a need for studies that clarify factors that support and enhance the activities of the facilitators. Currently, message board discussions are being archived and systemically reviewed for recurring themes and concerns as well as perceptions of what works well and what does not. Information along these lines should assist in the development and refine of the FPP and in the adaptation of the model for distinct course content areas.

In conclusion, the FPP has been developed as an approach to support the successful use of distance learning coursework in small rural schools. By focusing on common perspectives and needs of rural learners and by developing a model that relies upon Learner-Centered Practices, the FPP shows promise as a practical model to address this need. With future efficacy and development research, it is possible that the FPP may become viable approach to enhance distance learning instruction in a variety of hard to staff content areas that extend beyond advanced curricular instruction.

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