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At the Crossroads of Change



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CHANGE THAT WORKS: URBAN RESEARCH STUDIES FOR USE IN RURAL SETTINGS

The issues currently facing urban and rural special education leaders remain critical, varied, and challenging. Across the United States, school district leaders face the challenge of increasing the numbers of highly-qualified principals who can meet the demands of closing achievement gaps and improving student achievement (Goor, Schwenn, & Boyer, 1997). Rural and urban school leaders need to possess the knowledge and skills to lead our schools and school districts in a manner that promotes the achievement and success of all students (Litchka, 2007). School leaders who effectively address challenges posed by current legislation, while meeting the needs of a variety of students, are essential in moving the core of America's education system forward if America is going to succeed (Steinke, 2010).

“Special education administrators play a critical role in the implementation of successful inclusion in diverse, standards-based environments. They provide the vision and leadership necessary to guide educators in both general and special education as they deliver instructional programs to meet the needs of diverse students with disabilities” (Voltz & Collins, 2010, p. 70).

The range and complexity of issues facing urban and rural school leaders are particularly daunting. Urban schools have been hit especially hard by the repercussions of current educational legislation, specifically the need to demonstrate Adequate Yearly Progress (AYP), because they have a large percentage of students who fall into one or more of the subgroups including students with disabilities, who are of color, and/or are English Learners (York-Barr, Ghore, & Sommerness, 2007). Rural school districts face similar challenges. According to Keller-Allen (2009), “the spotlight on local education agencies (LEAs) in their efforts to improve performance of all students, including historically underperforming groups, has increased scrutiny on LEA leadership” (p.1). To compound the problem, “districts and special education administrators face a shortage of licensed and certified personnel which necessitates filling special education positions with uncertified and untrained personnel” (Lashley, & Boscardin, 2003, p.14).

In response to the critical shortage and need for highly-qualified leaders, the National Urban Special Education Leadership Initiative (NUSELI) was created. The NUSELI program, grounded in the advanced standards for Special Education Administrators (Council for Exceptional Children, 2009) and cross walked with the Educational Leadership Policy Standards (ISLLC, 2008), was created to provide opportunities for school leaders to obtain a doctorate while remaining in their educational settings. The program was designed to assist urban school district special education administrators to gain the research-validated knowledge and skills and

the practical wisdom that would help them develop, implement, and evaluate exemplary programs, practices, and services for students with disabilities. The need to connect theory and practice and possess the knowledge and skills needed to be a successful leader in a diverse school must be a high priority for all school districts. Collaboration and technology were innovative features of the NUSELI initiative. Through a collaborative relationship between an urban university, two urban school districts, a cadre of experts acting as national faculty, and special education leaders from around the country affiliated with the Urban Special Education Leadership Collaborative, NUSELI participants who are professionals working in the schools were able to see first-hand through the use of technology the realities faced by current educators and administrators. It is through this lens that NUSELI participants identified the current needs in special education leadership and conducted research in those critical areas.

This paper will discuss the research studies of school leaders who have graduated from the NUSELI program. These dissertations completed by the NUSELI participants covered a wide range of topics of interest to both urban and rural education settings including: Response-to-Intervention (RTI); inclusive education for students with disabilities; lived experiences of high school graduates who have autism; a grounded theory study on principals' perceptions of best practices for serving students with disabilities; the perceptions of teachers on including all students in the general classroom; and, education for students identified as English Learners. We have chosen to discuss three of the studies in this paper to show how findings from an urban project are applicable to rural school districts. The results and implications from these research studies will be discussed as they relate specifically to both urban and rural settings. Additionally, strategies to enhance collaboration between institutes of higher education and school districts will be discussed and specific examples implemented by NUSELI participants will be presented.

Response to Intervention

Prior to the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEIA) in 2004, the discrepancy model was the traditional method of identifying students with specific learning disabilities (SLD; Elksin, 2002; Fuchs & Fuchs, 2006). However, due to misdiagnosis and overrepresentation of students from minority backgrounds, Response to Intervention (RTI) became an alternative approach and received federal approval with the passage of the IDEIA. IDEIA dictated that states "must not require" the use of a discrepancy model and that they "may permit" the use of other alternative procedures for determining a specific learning disability diagnosis (IDEIA, 2004). On July 1, 2010, RTI became the required process for identifying students with SLD for all schools in the state of Florida (FAC 6A.6.03018). Implementation of this approach required significant changes in how schools operated; and, seeing the realities that schools were facing from this requirement, one NUSELI graduate conducted a phenomenological study to gain an understanding of the experiences of 16 elementary school principals who implemented RTI in their schools. The results of the study indicated that principals found RTI implementation to be a difficult, but worthwhile experience (Butler, 2010).

Butler (2010, p. 7) focused on the following research question: What are the experiences of elementary school principals in implementing RTI? Of the 16 principals selected to be participants in the study, 8 participants were considered exemplary with RTI implementation as identified by area superintendents, and 8 participants were considered resistant to

implementation (Butler, 2010, p. 56). Face-to-face interviews were conducted with participants and data were collected through audio recordings of the interviews, as well as, notes written by Butler during the interview. To analyze the data, Butler used a constant comparative model, categories (Ary, Jacob & Razavieh, 2002) and placed data collected into categories based upon Fullan's (2007) nine critical factors affecting the implementation phase of a change project: (a) need, (b) clarity, (c) complexity, (d) quality/practicality, (e) school district, (f) school board and community, (g) principal, (h) teacher, and (i) state and federal agencies.

Butler (2010, p. 60) found that participants' responses focused on four main factors that affected the implementation of RTI: (a) clarity, (b) complexity, (c) quality and practicality, and (d) school district. The biggest challenges faced by principals when attempting to implement RTI within their schools were concerns regarding the clarity of the RTI process and procedures; the complexity of the change in regards to the amount of time required to successfully implement RTI; the ability to provide the resources needed to supplement curricula in each tier; the need for collaboration between school personnel; and, the need for professional development in the area of data collection and progress monitoring (Butler, 2010). The results of this study parallel the current literature on implementing RTI in rural school settings. Similarly, Robinson, Bursuck, and Sinclair (2013) found that rural schools implementing an RTI model also had a need for increased clarity on the RTI process, evidence-based materials to supplement instruction, strategies to increase collaboration, and professional development in the areas of data collection and progress monitoring.

Inclusive Education

Inclusive practices evolved from the passage of Public Law 94-142, the Education for All Handicapped Children Act, in 1975 and the Individuals with Disabilities Education Improvement Act (IDEIA; Gourwitz, 2014). The belief behind inclusive practices is that the achievement gap between students with disabilities and students without disabilities can be closed only if both groups of students are provided the same educational opportunities (Kilanowski-Press, Foote, & Rinaldo, 2010). Providing inclusive settings poses many obstacles and challenges to school-based administrators, and school leaders can either alleviate or generate barriers for the process (Praisner, 2000; Spillane, 2004). One NUSELI graduate saw first-hand the need to examine the factors related to school-based administrators' attitudes toward inclusive education and the relationship of these attitudes on the placement of students with disabilities (Vazquez, 2010).

Vazquez (2010) conducted a quantitative study to investigate whether there was a correlation between principals' attitudes toward inclusion and their placement decisions; whether there was a relationship between school-based principals' hypothetical placement decisions and their actual placement decisions; and, whether school based principals' attitudes toward inclusion were related to personal demographics, professional experiences, and formal training. To collect data, Vazquez mailed out the Principals and Inclusion Survey (PIS) developed by Praisner (2000) to school-based principals in a large urban district in the southeastern part of the United States. A total of 98 principals responded to the survey and included 42 male and 56 female participants (Vazquez, 2010).

Data analysis revealed a positive correlation between the participants' attitudes towards inclusion of students with special needs and their educational placement decisions (Vazquez, 2010, p. 52-53). Principals with more positive attitudes toward inclusion were more likely to believe students with disabilities could be educated in less restrictive environments. However, there was no significant relationship between the hypothetical placements of students with disabilities and their actual placement, as determined by data collected from the schools regarding actual placement decisions (Vazquez, 2010, p. 54). Although there were no significant differences in level of attitude towards inclusion based on gender, special education experience, and in-service training hours, there were statistically significant differences in principals' attitudes towards inclusion and the levels of special education credits in participants' formal training, as well as the number of special education content areas included in participants' formal training (Vazquez, 2010). Lastly, there was a statistically significant difference in the principals' attitudes towards inclusion of students with exceptionalities based on their experiences with students with disabilities (Vazquez, 2010, p. 70).

The results of the study share many similarities to the literature on principals' experience with inclusion in rural school settings. Irvine and colleagues (2010) found that principals in two rural school districts have an overall supportive attitude towards inclusion, but also have a need for professional development and formal training in special education. Although schools in rural communities may have no alternative to including students with exceptionalities in general education classrooms, there is a need for collaboration within schools and between universities and school districts to have successful inclusive classrooms (Irvine, Lupart, Loreman, & McGhie-Richardson, 2010).

English Learners

The education of students classified as English Learners (EL) is supported through educational legislation. No Child Left Behind (NCLB, 2001) addresses academic accountability by requiring states to implement statewide accountability systems covering all public schools and students. Under NCLB, schools must show AYP in closing the achievement gap for students who have not met academic proficiency and AYP calculations must include the achievement results of all students, including students identified as EL. In Florida school districts, the EL subgroup often times does not make AYP in the area of reading (Florida Department of Education, 2007). Additionally, the graduation rate of students identified as EL in Florida is consistently lower than the graduation rate of the total population of students (Echevarria, Short, & Powers, 2006) in part due to the requirement for students to pass the Florida Comprehensive Assessment Test (FCAT) in order to graduate (Berrio, 2010). Noting that the challenges facing students identified as EL are great, one NUSELI graduate conducted a quasi-experimental study to measure the effectiveness of a district approved computer-based intervention in increasing student reading achievement.

The purpose of Berrio's study was to review pre- and post-test benchmark reading assessment scores of students identified as EL who participated in a computer-based instruction (CBI) reading program to determine if the CBI program had any impact on the scores. Additionally, he reviewed the scores through the lens of gender to determine if the mean benchmark reading scores indicated any difference based on gender (Berrio, 2010). Berrio selected three schools to participate in the study. All three schools had over 90 percent of

students who qualified for free or reduced lunch and were identified as eligible to receive Title I funding. In addition, all schools had not met AYP for a period of five years and were classified as a Correct II school by the Florida Department of Education (FLDOE, 2007). Finally, each school had a significant number of students classified as ELLs (FLDOE, 2010). The first school was the control school, while schools two and three maintained both control and experimental groups. The study was conducted during a four-week summer reading program. The control group received six hours of the standard curriculum per day and the treatment group received five hours of the standard curriculum and one hour of CBI per day. The dependent variable in this study was reading benchmark scores and the independent variable in this study consisted of a CBI which was a program designed to assess student reading ability level and provide practice for mastery based on the student's current achievement level (Berrio, 2010).

Results of this study indicated that overall there was a statistically significant difference between pre-test and post-test scores based on CBI intervention (Berrio, 2010). The treatment group had a significant mean score increase of 13 points while the control group had an increase of less than 4 points. It is important to note that although the overall mean post-test score of the treatment group was higher than that of the control group, the control group in school three had a higher mean post-test score than the treatment group in school three (Berrio, 2010). No statistically significant difference was found in mean post-test scores based on gender (Berrio, 2010, p. 51). Additionally, the results demonstrated that a CBI program could be effectively utilized to increase mean test scores on benchmark test results of students identified as EL (Berrio, 2010). The increase in reading scores could assist in closing the achievement gap, decreasing retention of students identified as EL based on low standardized test scores, and increasing the percentage of students identified as EL who meet AYP (Berrio, 2010). Through technology and CBI programs, urban and rural schools could have greater access to supplemental materials to meet the needs of students identified as EL.

Discussion

A collaborative relationship among an urban university and two urban school districts provided a new vision with which to experience the realities faced in urban school districts. As we reviewed three research studies completed by the NUSELI graduates, we saw great similarity in the issues faced by urban and rural school districts. It is through this lens that NUSELI participants identified the current needs in special education leadership and conducted research in those critical areas including RTI, inclusive education, and education of students who are identified as English Learners. While NUSELI participants' research focused on urban schools and urban school leaders, results and implications for the field extend to rural educational settings and include the need for: (a) teacher and administrator preparation programs that specifically address RTI, inclusion, and the education of students identified as EL; (b) continued professional and staff development in the areas of RTI, inclusion, and the education of students identified as EL; and, (c) the continued collaboration between institutes of higher education and their local school districts.

Research indicates that professionals working with students with disabilities in urban and rural settings have identified the need for increased knowledge, skills, and experiences provided by teacher and administrator preparation programs (U.S. Government Accountability Office, 2009). The authors of the studies found professionals in urban and rural settings discussing the

urgency for formal preparation in the area of special education and evidence-based practices in order to have successful inclusive classrooms, as well as to successfully implement RTI in general education (Butler, 2010; Irvine et al., 2010; Robinson, Bursuck, & Sinclair, 2013). Vazquez (2010) found that participants with zero special education credits in their formal training had significantly less inclusive attitudes than those with 1-9 special education credits, 10-15 special education credits, or those with 16 or more special education credits in their formal training. Based on these results, institutes of higher education should consider including courses in their programs that cover specific special education content in each of their education tracks. Additionally, to increase professionals' attitudes towards inclusion, both teacher and administrator preparation programs may consider implementing an internship or field-based component to their courses that fosters positive experiences with students with exceptionalities. Along with suggestions for teacher and administrator preparation programs, the results from the research studies suggested the need for continued professional development for educators in urban and rural settings.

Continued professional development in the areas of RTI, inclusive education, and the education of students identified as EL was identified as a need for urban school settings. This continued professional development could also include increased collaboration within schools and between school districts and universities in rural as well as urban settings. Due to the continued challenges faced by urban and rural schools, technology could be used to deliver professional development and increase collaboration. Asynchronous and synchronous technologies could be integrated into teacher and administrator programs, professional and staff development initiatives, and collaborative efforts between institutes of higher education and school districts in an effort to increase the knowledge, skills, and dispositions of administrators in urban and rural schools in the areas of RTI, inclusive education, and the education of students identified as EL.

Collaborative efforts between institutes of higher learning and local school districts can prepare and support school leaders in an effort to meet the needs of all students regardless of educational setting. Opportunities for collaboration between school districts and institutes of higher education can be increased with the use of technology. By implementing synchronous technologies, such as Adobe Connect, Skype, ooVoo, and Google +, collaboration between universities and school districts can be strengthened, regardless of the physical distance between the institutions, to better support the needs of all professionals and students. Collaboration between school districts and institutes of higher education leads to continued research and connections between research and practice. Further, the direct link between institutions of higher learning and school districts enables school leaders to determine the effects of various technologies on student achievement while developing and evaluating programs and strategies aimed to improve student learning in an inclusive environment. An added bonus can be designing and implementing teacher preparation programs that are directly aligned with classroom and administrative needs. Additionally, technology has the power to increase access to evidence-based programs such as CBI that can supplement curriculum to meet the needs of students with disabilities and students identified as EL.

Conclusion

As urban and rural school leaders continue to be charged with the challenging task of improving academic outcomes for all students, especially students who are in one or more of the AYP subgroups, it is imperative to forge collaborative affiliations between school districts and institutions of higher learning. Collaboration, facilitated through technology, can provide school leaders with the knowledge and skills necessary to effectively address the requirements of current legislation and meet the needs of diverse learners. A doctoral program founded on collaboration can forge partnerships among universities and school districts and create a knowledgeable and skilled group of school leaders well versed in serving all children in our schools whether in urban or rural settings.

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RURAL PERSPECTIVES OF MODELS, SERVICES AND RESOURCES FOR STUDENTS WITH HEARING IMPAIRMENTS

The education of students with disabilities is a constantly changing field influenced by research, educational policy and advances in the medical and technological sectors. Specifically, the education of students with hearing impairments (HI) has been impacted by No Child Left Behind (2002), increases in universal hearing screening for newborns, and cochlear implants (Blackorby & Knokey, 2006; Mitchell, 2004). Rates of this population being educated in special schools is declining while integration into general education classrooms is increasing (Gallaudet Research Institute, 2002; Luckner & Ayantoye, 2013; Mitchell & Karchmer, 2006; U.S. Department of Education, 2002). Decreased numbers of students with HI, increased dispersion into general education classrooms, and lack of research support and well-designed studies limit the amount of information available pertaining to the educational experiences and best practices for students with HI (Cawthon, 2011; Luckner, 2006; Mitchell, 2004).

Rural communities are especially impacted by limited availability of resources and qualified personnel needed for effective delivery of instruction. Reported shortages in qualified personnel include special education teachers qualified in HI, speech-language pathologists, educational audiologists, general special educators, and general education teachers (Bowen & Ferrell, 2003; Marlatt, 2014). With more than 60% of their time in mainstream classrooms immersed in curricula for hearing students, language and literacy needs of students with HI, who comprise only 1% of the school population, are not being addressed effectively (National Association for State Directors of Special Education, 2011). In particular, “[students with cochlear implants] are experiencing linguistic deprivation” (Humphries et al., 2013, p. 873). A common response in rural communities to delivering services to students with HI is to group them into multi-age, multi-grade interventions (U.S. Government Accountability Office, 2011).

Physical distance poses another distinct barrier for students who are HI and being educated in rural areas. They commonly reside away from other students with HI. Limited access to public transportation has ramifications for parental involvement in the school setting requiring rural schools to be creative in responding to obstacles such as: transportation, parent networking, attendance at meetings and school events (Griffin & Galassi, 2010; Thurston & Navarrete, 2010; Trussell, Hammond, & Ingalls, 2008).

Purpose of the Study

This study sampled the various types of services available for children and youth with HI in two rural and two metropolitan areas of the United States. The differences in types of service models, assistive technology, parent involvement, and challenges experienced when delivering services were examined. The proposed research question was: Do the types of services currently offered to students with hearing impairment differ between rural and metropolitan areas?

Methods

The study began with background research about rural and metropolitan services for students in public or private placement for HI. A lack of research pertaining to rural services was discovered which began our line of inquiry. To reach the most participants and to enable the gathering of the greatest quantity of data, an online survey was used. Service providers of students with HI across various K–12 settings were emailed, including general education, special education, and private schools. The sample population was limited due to time constraints and low return of surveys, but was sufficient to enhance our understanding of current practices in rural and metropolitan settings.

Survey. The internet-based Survey Monkey instrument was used to gather qualitative data in an anonymous survey. According to McPeake, Bateson, and O'Neill (2014), electronic surveys have several benefits such as ease of analysis, ability to export to data analysis programs, reduced expenditure of time and resources, and reduced human error, thus increasing validity. The sites comprised two rural areas in the Southwest, a metropolitan area in the Southwest, and a metropolitan area in the Northeast. These areas were chosen in order to compare and contrast services provided in rural and metropolitan areas. The two rural areas have less than 50,000 people and two metropolitan areas have more than 50,000 people.

The survey (See Appendix A) began with a brief description of the reason for the study. The first six questions addressed demographic data (service provider role, educational setting, years of service, age of students, and students' cultural and linguistic background). The second set of questions pertained to the participant's work with students. The participants answered open-ended questions about their best practices for models, services, resources, challenges, and solutions. Participants also indicated their opportunities for and involvement in professional development in their education agency.

Results

To facilitate analysis by comparison, the data collected were interpreted by location, the rural areas in the southwest, and the metropolitan areas in the southwest and northeast.

Rural Areas in the Southwest

In the rural areas, 21 participants responded to the survey. When responding to questions 7 and 8, participants tended to blend the concepts of ethnicity, culture, and language providing therefore, general and merged background information of served students. All participants worked with Hispanic students, 5 with White students (non-Hispanic), 7 with Native American students, and 3 with African American students.

Since schools in these rural areas have limited local resources, services for students who have HI were provided by outside contractors. The most common services were interpreters, audiological and speech language therapy. A repeated sentiment was that deaf students lacked frequent and consistent services.

Participants characterized speech and language therapy, hearing evaluation and treatment, cognitive retraining, audiological evaluation, hearing aids and therapy as effective services within their models of services. Two participants described the systems that incorporated a total

communication model - signs, gestures, finger spelling, body language, listening, lip reading, and speech as effective practices. The push-in and pull-out approach was also mentioned but not explicitly described by four participants. The use of manipulatives, repetition, reinforcement, one-on-one instruction, and “eclectic resources” were also mentioned. One participant advocated for full inclusion as an effective practice. Seven did not respond.

Regarding the use of Assistive Technology (AT), six participants used FM transmitters during instruction, two used Smart boards, and others used iPads, videos, songs, and pictures. One participant mentioned the use of PECS (Picture Exchange Communication System) and AAC (Augmentative and Alternative Communication System). Two participants used hearing aids and sound fields, one used detection technologies to assess degree of severity. One participant used no AT. Five participants reported they would use more AT, such as Visual Phonics and speech to print closed captioning if they had access to them. Seven participants did not respond.

When responding to the inquiry on effective interventions, 3 participants noted that early identification and intervention were the key to success with HI. Three used vocabulary interventions and 2 used comprehension strategies. Other interventions were all reported individually as being effective: visual phonics, cuing omitted sounds, language clarification and restating, prewriting, retesting, use of peer buddies, sign language, SAP groups (flexible small group for preventive instruction), one-on-one assistance, self-determination model, and teaching body language such as gestures and lip reading. One participant indicated that “there is a wide spectrum of needs. Each child needs to be treated individually and each intervention is chosen depending on the level of need.” Seven participants did not respond.

Participants were also asked about parent perceptions of interventions. More than half (52%) responded that parents were satisfied with the interventions being used whereas three noted that parents need more education to help their children at home. One participant reported that parent perceptions could be related to an overall educational level or level of investment. As stated by one participant, “parents are not aware of the interventions nor have they communicated their perceptions of level of satisfaction.” Eight participants did not provide answers to this question.

Various challenges were acknowledged by participants. All mentioned the lack of highly-qualified teachers and specialists as a key issue. Four expressed concern about communication barriers between HI and deaf students and their nondisabled peers. Three participants described the lack of parental training and advocacy at home. Two more expressed limited school district accountability for student success as another challenge. Outside contracting was of concern to several providers in a rural area. One participant indicated that, “services provided by outside agencies hinder progress because services are slow to start; communication and schedule coordination is difficult because agencies service a wide area.” One participant noted that there is only one speech agency available in the entire geographic area and audiological care outside of speech therapy is 200 miles away. Six participants did not respond.

The solutions offered by participants to these challenges included better coordination between agencies with streamlined services, training for teachers and interpreters, and parental education. One participant suggested self-contained classes for “a language-rich environment to

help increase the language base.” Another participant suggested greater support for students with HI to speak intelligibly so that AT use could be minimized. Eight participants did not respond.

In response to the question on the kind of professional development received, all but one participant mentioned having received professional development in programs and content such as Fairview reading, Visual Phonics, ASL immersion, language interventions, and cochlear implant implications. Seven participants did not respond.

Metropolitan Areas in the Southwest and Northeast

All nine metropolitan participants noted serving students from many culturally and linguistically diverse backgrounds. Six participants indicated serving students with Asian, Indian, Latino, Brazilian, Pakistani, East European, and European backgrounds. Four worked primarily with Hispanic and Native American students. Two participants provided no response.

These participants stated that specialized services generally available include AT and speech language therapists. One participant stated that audiological exams were provided through their own audiology clinic.

In response to the effectiveness of models of service, individual participants responded that a least restrictive model with direct academic and language services, pull-out services, having an educational audiologist working along with teachers of DHH, and the use of amplifiers were effective. Three participants listed parental involvement, staffing ratios, and highly-trained staff as advantageous to their school selected models.

Four participants identified effective intervention practices naming parental involvement, providing education about hearing loss and features of sound, good amplification with aids and learning setting, support from educational audiologists and teachers of DHH/HI, visual supports, and support from administration as best ways to support students. Providing models and cues (visual, auditory, tactile), pre-teaching, assistive technology, teacher training, supporting the classroom curriculum, direct intervention, and articulation therapy were other effective interventions mentioned.

Metropolitan participants saw time, staffing, training, and resources as the greatest challenges in providing effective interventions. One participant noted that “use of amplification, and the need for the device to be passed around to staff and students when speaking” was indeed a great limitation. A residential provider also mentioned communication barriers between parents and students who go home only on weekends. Three participants did not respond.

The suggested solution to the above challenges included greater funding, time, parental education, and quality AT. One participant mentioned the need for a self-contained classroom to provide an environment with rich language. Four participants did not respond.

Regarding participation in professional development, one provider mentioned being engaged in activities offered through a state-approved private school for students who are DHH, one participant attended teacher training in-services each school year for explanations of HI and devices, and two participants attended local conferences, workshops, and seminars. One participant seldom participated because many companies offering workshops do not provide participants with American Speech-Hearing-Language Association (ASHA) Continuing

Education Units (CEU), which are nationally recognized standard units of measurement that document hours of participation in a continuing education course (ASHA, 2014). Four participants did not respond.

Discussion and Implications

Rural areas have less access to highly qualified specialists as well as a parent population that is less likely to be informed about interventions for their children with HI. Due to the limited number of responses, it is difficult to ascertain differences in parental involvement and perceptions based on geographical area. Rural areas use more assistive technology than the metropolitan areas, with FM systems being used most often across settings; however, rural areas have less access to maintenance of devices. Outside consultation is used in both rural and metropolitan regions, with speech and language therapists providing a continuum of individual and inclusive services.

The most prominent challenge in providing services for students with HI in rural areas is distance. It creates obstacles in access to professionals who provide services or interventions designed specifically for students with HI. Even when using collaborative centers, families must travel considerable distances to access them. Having high-quality general and special educators would reduce the strain on both families and regional service provider centers.

This study reveals the need for greater support of regular and special education teachers of students with HI. Support should include increased relevant professional development related to working with children with HI, working with others to develop professional skills, and increased awareness and use of technological tools. In addition, rural participants of the study noted that although families were satisfied with school services, they did not understand the importance of their involvement in the educational process or at-home interactions for children with HI. Rural and metropolitan participants alike perceived that parents need more coaching, education, and understanding about the effects of hearing loss.

Future research is needed on a larger scale and for more specific interventions that are effective for students with HI. A comparison of parent and provider perceptions in rural and metropolitan areas about services and satisfaction levels would further inform the field. Descriptive studies of models and assistive technology would reveal similarities and differences unique to each area, as well as inform the field about scientifically-based best practices currently in use in the general education setting with students who have HI.

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Appendix A

Survey Questions

1. I have read the information about “Perspectives of Service Providers of Children with Hearing Impairment Related to Best Practice Models and Teaching Methods” and agree to participate in the research.
2. Please select your location (Eastern metropolitan area, Southwest metropolitan area, Southwest rural area, Northern rural area in a Southwest state).
3. Type of educational setting where you provide service; Choose all that apply (Home/Homebound services, Residential/boarding school, Clinic, Day school, Special class for significant portions of the day within public /private school, Individual instructional setting within a public/private school, Resource class within public/private school, Full inclusion general education classroom)
4. Age of students/children served; choose all that apply (0–3, 4–7, 8–12, 13–17, 18–21)
5. Please select your service provider role (General Education, Special Education, Specialist for Children: Deaf/Hard of Hearing [HH] or with Hearing Impairment (HI), Speech Language Pathologist, Assistive Technologist, Paraprofessional, Other (Please describe))
6. Number of years serving students: Deaf/hard of hearing (HH) or with Hearing Impairment (HI) (1–3, 4–7, 8 or more)
7. Culturally or Linguistically diverse groups served (all children)
8. Culturally or Linguistically diverse groups served: Deaf/Hard of Hearing (HH) or with Hearing Impairment (HI)
9. What services are provided by your school district, agency, or special school for children/students: Deaf/Hard of Hearing (HH) or with Hearing Impairment (HI)?
10. Please describe the models of service you feel are most effective with children/students: Deaf/Hard of Hearing (HH) a. Why do you feel each type of model you have described is effective? b. Are there specific age groups, severity of or with Hearing Impairment (HI) or other circumstances that make a specific service model more effective?
11. What three interventions are most effective when you work with children/students: Deaf/Hard of Hearing (HH) or with Hearing Impairment (HI)?
12. In terms of effectiveness of these interventions: What is your understanding of the parents’ perception of the interventions? What is your understanding of the parents’ level of satisfaction with the interventions?
13. What specific types of Assistive Technology (AT) do you utilize that are most effective with children/students: Deaf/Hard of Hearing (HH) or with Hearing Impairment (HH) a. Which AT is best suited for your situation? b. Which AT would you like to utilize but is not available in your area?
14. What are the challenges in providing all of the services and interventions that you described? a. Challenges for you specifically? b. Challenges for your school district, agency, or special school overall? c. Challenges for the children/students: Deaf/Hard of Hearing (HH) or with Hearing Impairment (HI)? d. Challenges for the parents/family or caregivers? e. Challenges for other individuals or students in the general education class? f. Challenges for the other teachers?
15. What solutions do you see for any or all of these challenges?
16. What types of Professional Development activities do you participate in related to services for children/students: Deaf/Hard of Hearing (HH) or with Hearing Impairments (HI)?

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RETHINK THE CHALLENGES PRESENTED BY GEOGRAPHY: SUPPORTING STUDENTS WITH DISABILITIES IN RURAL SETTINGS

Rural school districts face a unique set of challenges. While the literature explores these challenges, questions on overcoming them remain. This paper explores how a special educational software platform, in partnership with rural districts nationwide, created a model to build on the unique strengths and overcome the challenges faced by rural schools.

Background

One-half of all school districts are located in rural communities. Rural schools also account for one-third of all public schools and educate 24% of public school students (National Center for Education Statistics, 2013). Rural schools display rates above the national average on several outcome measures including: slightly higher graduation rates, higher rates of parent and student involvement in IEP meetings (Williams-Dehm, Brandes, Chestnut & Haring, 2014), and a higher rate of inclusive practices (Jung & Bradley, 2006). Schools located in rural settings also face a unique set of challenges, including lower rates of teacher recruitment and retention (Sundeen & Wienke, 2009), decreased communication and access to specialists (Jung & Bradley, 2006), and lower rates of the use of assistive technology (Jones, Bausch & McLaren, 2013). The literature also discusses strategies utilized by rural districts that have been successful in overcoming some of the barriers associated with geography. Such strategies include the inclusive teaming of general educators, special educators, related service providers, and administrators working together during weekly planning meetings (Nagle, Hernandez, Embler, McLaughlin & Doh, 2006), supportive relationships with administrators and general education teachers (Berry, 2012), asynchronous online professional development (Erickson, Noonan & McCall, 2012), and professional development via online technology to increase special education teacher retention (Sundeen & Wienke, 2009).

Faced with challenges such as lower pay, geographic and social isolation, and decreased access to professional development and specialists (Elfers & Plecki, 2006; McClure, Reeves, & Salgado, 2005; Ludlow, Conner, & Schechter, 2005; Pennington, Horn, & Berrong, 2009; Sundeen & Wienke, 2009), many educators are left wondering what, if anything, can be done to overcome these barriers. This paper will discuss how rural districts have used technology to provide easy cost-effective access to professional development, strengthen collaborations amongst the students' educational teams, build relationships with other school districts, and achieve higher student outcomes.

Rethink is an award-winning program model for supporting students with disabilities in classroom settings. It offers an integrated and dynamic online solution, developed by nationally recognized experts in the field, providing teachers and staff the tools they need to improve student outcomes and gives school leaders the ability to evaluate program effectiveness and

student outcomes. Rethink provides school districts with on-site professional development. While effective with mid-sized to large urban and sub-urban districts, this support model proved a challenge for supporting small and rural districts.

Materials and methods

Understanding that the needs and resources of small districts vary greatly from those of their large urban counterparts, a tailored support program was developed to meet the unique needs of small districts.

Staffing. Rethink provides implementation support and professional development through Professional Service Directors (PSDs). PSDs are trained educators with extensive experience within the educational and service arenas. PSDs are tasked with supporting districts with successful implementation of the Rethink intervention. Acknowledging the unique needs of rural and remote education one PSD is dedicated to work strictly with small and rural schools. This led to the development of two distinct implementation and support tracks: regional and remote. The development of a remote implementation track ensures the unique needs of rural and remote school districts are appropriately addressed.

Remote professional development. One of the major challenges rural school districts face is lower rates of teacher recruitment and retention, particularly for special education positions (Elfers & Plecki, 2006). The literature has cited decreased access to professional development as a contributing factor to this particular challenge (Elfers, Plecki, & Knapp, 2009). Professional development is often limited in rural areas due to a lack of specialists in the area and the cost of bringing an expert into the district to provide training (Ludlow et al., 2005).

To combat this challenge, Rethink's Small School Support Program provides remote professional development to educators via the web. Educators access training on-demand through our Training Center and archived webinars. The Training Center hosts 11 modules on research-based teaching strategies. Each module provides participants with a brief video demonstrating a specific strategy (i.e. prompting), guided notes, and a test of comprehension. The archived webinars feature an expert in the special education field speaking on a variety of special-interest topics (i.e. feeding problems and autism). Educators are able to access these supports from home or school, at any time of the day that is convenient for them.

In addition to the on-demand forms of professional development, Rethink works closely with districts to provide synchronous online professional development. Districts, as well as individual educators, are able to schedule an unlimited number of trainings for their team. The trainings are scheduled with the Small School Support PSD, and are provided through GoToTraining. GoToTraining is an online training software that provides interactive training sessions. Participants are able to log in from separate locations, reducing the need for staff to congregate in one location for professional development. Given the location of schools within geographic regions this is a significant benefit and results in reduction in travel costs for schools. Rethink uses this software to provide training on such topics as making data-based decisions and managing problem behavior in the classroom. This type of support allows districts to access cost-effective professional development on their schedule.

Strengthen collaborations. One of the strengths of small and rural school districts is their inclusive teaming of general educators, special educators, related services providers, and administrators working together during their weekly planning meetings (Nagle et al., 2006). In an effort to build upon this strength, professional development opportunities highlighted ways in which Rethink could support this practice. Teachers accessing the online tool reported spending a large amount of time collaborating with parents, administrators, and other educators on specific student cases. Furthermore, in districts with high teacher turnover, teachers reported feeling the need to “reinvent the wheel” at the start of an academic year with new students. They backed up this sentiment by stating the lack of detailed student records coupled with the previous teacher leaving the district (and thus not available to discuss the previous student performance), made them feel unsure of the current strengths and needs of the students.

Participating districts worked with Rethink to improve student documentation. The online format allows all team members to enter and view notes on student performance from separate locations. This decreases the need for all members of the student’s treatment team to gather in one location, thus providing more opportunities to discuss individual cases. Additionally, educators reported the ability to view student records prior to a meeting better prepared them for the meeting and gave the meeting a better focus. These notes were also used to improve home-school communication and collaboration as teachers could easily print out detailed student reports to send home with the student. This documentation is also contained with an electronic document allowing for the record to travel with the student during year-to-year transitions and transitions between early childhood, elementary and secondary school.

Professional learning communities. Previous papers have discussed geographic and social isolation, teaching multiple subject areas, and a lack of access to professional development as contributing factors to lower rates of teacher recruitment and retention in rural areas, particularly for special education positions (Elfers & Plecki, 2006; Hammer, Hughes, McClure, Reeves, & Salgado, 2005; Sundeen & Wienke, 2009). Professional learning communities (PLCs) provide a way to bridge these gaps, providing educators with a social network and access to professional development. Understanding the need for, and interest of participating districts, Rethink collaborated with several rural districts to provide PLC opportunities in an online environment.

Educator of the Month. In the fall of 2014, Rethink partnered with an educational network in the state of Georgia to create a teacher-led monthly meeting for all school districts enrolled in Rethink’s Small School Support Program. Each month, a teacher is selected as the Educator of the Month and is invited to speak during a web-based meeting. The selected teacher speaks on such issues as data collection and progress monitoring, managing problem behavior, and classroom organization systems. Educators from other districts across the United States are invited to attend and join the conversation. For those unable to attend, the meetings are recorded and distributed afterwards. Rethink organizes the event and prepares all materials for the host educator so that minimal tasks are assigned to the selected teacher. These meetings provide an opportunity for educators to network with those outside of their district and learn from their peers.

Data Chats. In addition to multi-district PLC opportunities, Rethink has worked closely with individual districts to develop individualized PLC groups through the use of online discussions around student data. During these meetings, educators are asked to share student

graphs with their peers to facilitate a dialogue around data-based decisions. Teachers typically select one case that is going well and one they are struggling with for the discussion. Rethink facilitates these conversations and helps teachers adjust their data systems as needed. These meetings serve to celebrate teacher and student success stories and create a collaborative environment to address any difficult cases.

Peer Support. Online peer support forums are a frequently utilized tool amongst educators (Hew & Hara, 2007). Recognizing this interest, Rethink launched a Peer Support area on the home page of their site. This tool is highlighted in all professional development opportunities for those enrolled in the Small School Support Program, and teachers are frequently directed to this area for support. The Peer Support forum allows educators to post questions, share resources, and join ongoing conversations with other Rethink users around the globe. Those active on the forum are able to share email address and connect offline from the forum if they desire.

Lesson resources. Knowing that many rural educators teach outside of their respected field (Berry, 2012), the need for specific lesson resources is paramount. As any educator is aware, the development of lesson and classroom resources takes a great deal of time and experience. Rethink provides educators with instant access to detailed lesson plans, instructional videos, and teaching materials. Without this resource, teachers new to special education would need to research teaching strategies and lesson plans, develop their own materials, and potentially enroll in continuing education classes which given geography may not even be available.

Discussion

In the first year implementation, we have witnessed tremendous growth in the Small School Support Program. We continue to partner with rural school districts to learn more about their needs and improve our support model. The areas our partners are most excited to grow are those of professional development opportunities and online PLCs. We have seen increased excitement and engagement around these aspects, and are dedicated to furthering the development of these resources.

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PROVIDING ACCESS TO BOOKS: A COMPARISON OF ELEMENTARY-AGED STUDENTS IN RURAL AND URBAN SETTINGS

Educators, politicians, and all stakeholders have debated the quality of public education since its inception. Reading achievement scores are often used to make judgments about the quality of public education systems. The particular scores among students from lower socioeconomic backgrounds and minority students weigh heavily on this judgment (Bishop, 1989; Greer, 1972; Hanushek & Woessmann, 2010; Rumberger, 1987; Sowell, 1993). An obvious achievement gap exists between rich and poor students, which has narrowed very little since the 1990s (Grissmer, Kirby, Berends, Williamson, & Endowment, 1994; Lee, 2002, 2006; Reardon, 2011). Students are expected to achieve competitive scores on standardized state achievement tests, regardless of their socioeconomic status (SES); failure to do so can have drastic, negative consequences for public schools (Armbruster, Lehr, Osborn, Adler, 2003; Mathison & Ross, 2013; U.S. Department of Education, 2013).

An achievement gap between rich students and poor students exists, and very little progress has been achieved at closing this gap (Grissmer et al., 1994; Lee, 2002, 2006; Reardon, 2011). However, it is worth noting students from lower socioeconomic backgrounds do, in fact, make gains in reading achievement during the school year (Alexander, Entwisle, & Olson, 2001; Downey, von Hippel, & Broh, 2004; Entwisle & Alexander, 1994; Entwisle, Alexander, & Olson, 2001). Interestingly, poor children actually make gains similar to students from middle- and upper-income backgrounds once their school days begin (Heyns, 1987). So, the question becomes: what can be done about this achievement gap in rural and urban settings? Rural and urban settings are often linked to students from lower socioeconomic statuses. This paper discusses the difference between rural and urban education settings, and discusses an empirically supported strategy for closing the achievement gap between rich and poor students.

Education Differences in Rural and Urban Settings

Problems with rural educational settings are not presented as often as problems in urban settings, despite schools being classified as rural more often than urban or suburban in the United States. According to the 2005 National Assessment of Educational Progress (NAEP) findings, students from rural settings score comparably to peers in suburban settings and higher than peers from urban settings. These data reflect state-by-state differences. Some states' rural schools score as high as or higher than suburban schools while other states' rural schools score much lower than suburban schools. The typical rural setting has fewer students who receive free and reduced lunch, while some rural settings face extreme poverty (Editorial Projects in Education Research Center, 2011).

Researchers note that more students living in urban areas are identified as lower performing than students in rural or suburban areas. This may be because urban schools operate in densely populated areas. These schools have more poverty, diversity, and immigration influences. The components of problems in urban schools are nuanced and multifaceted (Ahram, Stembridge, Fergus, & Noguera, 2013).

Urban schools are larger than rural schools with more faculty/staff and are most costly per student to operate. More extra-curricular opportunities exist in larger urban schools than smaller rural schools, but a similar participation percentage exists. Educational aspirations are different for students in these two settings. Urban students are more likely to aspire to attend a four-year college while rural students are more likely to aspire to attend technical schools (McCracken & Barcinas, 1991).

Summer Reading Loss

Despite several federally-funded policies and initiatives which attempted to rectify the wide achievement gap between rich and poor students, none have experienced much success. Allington et al. (2010) suggest federal policies and initiatives have been ignoring the root of the problem: summer reading loss. Historically, most research investigations exploring the summer achievement gap have supported this notion. While the current study focused on reading achievement scores, it is worth mentioning that the ‘summer setback’ can be seen across subject areas. Larger losses are demonstrated for all students specifically in the mathematics and spelling subject areas (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996).

A mounting body of research indicates the well-documented reading achievement gap is primarily due to summer reading loss; in fact, students who have limited access to print average a three-month regression in reading each summer (Allington & McGill-Franzen, 2013). By the end of sixth grade, at-risk students may experience a three-year deficit in the area of reading. Summer reading loss is an empirically-supported occurrence; numerous researchers have conducted investigations and found results to support this notion (Alexander, Entwisle, & Olson, 2001; Cooper et al., 1996; Downey et al., 2004; Entwisle & Alexander, 1994; Entwisle, Alexander, & Olson, 2001). In fact, Copper et al. (1996) discovered students from middle- and upper-class socioeconomic backgrounds tend to move forward at the same rate students from low socioeconomic backgrounds tend to move backwards.

Some researchers attribute the summer reading loss phenomenon to uneven learning opportunities during the summer months for students from lower socioeconomic backgrounds. It seems crucial for solutions to be identified, as educational placement decisions are sometimes made based on the discrepancies. Thus, the achievement gap between rich and poor students and the lack of remediation of this achievement gap can have long-term negative consequences for students (Alexander et al., 2001).

Researchers have suggested several potential solutions, although none have been implemented with much success. Copper et al. (1996) suggested extending the school year, or simply increasing the number of days students are in school, thus decreasing summer vacation

days, could remediate this achievement gap. Because schools seem to counteract the negative effects of summer vacation, as the gap between performances is nearly nonexistent during the academic school year, this solution has potential; however, it would be difficult to implement in some places (Alexander et al., 2001). Another empirically-supported, replicable intervention, which has been shown to remediate the summer reading achievement gap, is providing access to print materials for students from lower socioeconomic families (Allington et al., 2010).

Providing Access to Books

Providing access to and allowing students to select their own books is empowering and increases engagement and motivation to read for leisure (Allington et al., 2010). Many researchers believe that providing access to print materials is as effective as providing tutoring during the summer as a way to remediate the achievement gap between rich and poor students (Allington et al., 2010). Students from high-poverty backgrounds often have less access to print throughout childhood. Thus, these students have limited opportunities to practice reading skills in authentic ways. Providing access to books and other print materials is an impactful way to increase reading fluency and comprehension. In fact, providing access to books has been shown to be the most important predictor of reading achievement, when students' socioeconomic status is controlled (McQuillan, 1998).

Providing access to books for children in poverty can be difficult, often more challenging than providing books to children of middle- and upper-class socioeconomic backgrounds (McTague & Abrams, 2011). In a 2004 investigation, Kim explored the effects of providing access to summer reading books to rising sixth grade students attending economically diverse schools. Results indicated that children's fall reading scores increased one point for every book they read during the summer. Kim proposed that encouraging children to read during the summer could possibly prevent summer reading loss for low-SES students.

Providing access to print also increases motivation to read and improves attitudes towards reading. Moreover, allowing students to select their own books is empowering and increases engagement and motivation to read for leisure (Allington et al., 2010). In an award-winning (Coalition for Evidence Based Policy, 2011), three-year study on the effects of providing access to self-selected books to children from high poverty schools, Allington and McGill-Franzen found that access to summer books negated summer reading loss and concluded that access was as powerful as providing summer tutoring.

Discussion

This study provided at-risk students access to free books throughout the summer, in an attempt to remediate summer reading loss. Providing access to print is an effective and easy way to help deter learning loss for students who are deemed at-risk or for those who have disabilities. Specifically for rural educators, this intervention provides a practitioner-friendly way to remediate the achievement gap of students deemed at-risk. This includes students with disabilities and those from high poverty backgrounds.

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IT IS A SMALL WORLD AFTER ALL! BLURRING GEOGRAPHIC LINES THROUGH TECHNOLOGY

Abstract

Rural and urban schools often experience a digital divide, unable to keep pace with suburban counterparts. Technology inequities include lack of 'tech savvy leadership,' lack of resources and lack of ongoing professional development opportunities. Limited resources call for creative solutions such as community partnerships, and virtual experiences like digital field trips, augmented reality, and on-line instruction. Resources are recommended to help teachers integrate technology into the curriculum to support the varied and unique needs of a diverse group of students.

Introduction

According to a U.S. Department of Education National Technology Education Plan (NETP 2010), technology is a facet of every part of our lives. Subsequently, educators should leverage this and incorporate technology into "engaging, powerful learning experiences and content" (p. 10). The NETP plan recommends technology-powered learning, with the following goals: learning, assessment, teaching, infrastructure, and productivity. It is important that administrators and teachers improve their own technology skills, in order to effectively integrate technology into instruction and classroom management, to support high expectations overall for students.

A Digital Divide

Many rural and urban school districts are still playing "catch up" to their suburban counterparts when it comes to technology. Cheung and Slavin (2012) report while suburban schools have an advantage regarding instructional technology resources and technical support, comparatively, rural schools are at a disadvantage with budgetary constraints, having to do more with less. However, the use of technology provides the chance for educators in rural schools to provide the same opportunities as their suburban counterparts. Redding and Walberg (2012) note that rural school districts often struggle with connection problems, citing limited or inadequate bandwidth capacity, which again can be an obstacle to leveling the technology playing field.

Also problematic for rural environments, there are many families that are less likely to have access to computers or broadband internet connections at home and also "less likely to have the necessary skills and knowledge to meaningfully use these resources" (Ritzhaupt, Liu, Dawson, & Barron, 2013, p. 292). Students are not able to practice and refine technology skills outside of their classroom (Ritzhaupt et al., 2013).

McCollum (2011) declares that low income, rural and minority populations receive scrutiny as technology “have-nots.” However, research shows the reverse to be true for African American youth, noting they are accessing the Internet for “gaming, watching videos and social networking at more than twice the rate of young whites” by using mobile technologies like smart phones (Watkins, as cited in McCollum, 2011, para 11). They are also using these devices to complete homework and conduct research. Watkins sees potential for integrating these devices into the classroom. Using applications like *Poll Everywhere* or *Skype*, or using smart phones to look up vocabulary terms, allows students with the technology at their fingertips to engage in content. *Poll Everywhere* is a website where teachers can pose questions and students anonymously text their responses.

However, Watkins cautions that they are by no means getting anywhere near the best digital technologies available. Given these inequities, it is important for educators in rural and urban environments to maximize the resources available to them.

Educating the Educators

21st century students are tech savvy, understanding the role technology plays in their lives. In Project Tomorrow, researchers surveyed 300,000 students, parents, and administrators from all 50 states, and conducted interviews and focus groups to verify the results. The survey indicated that schools limit student use of technology such as cell phones, email, and texting. Over 40% of 6th through 12th grade students polled indicated they saw their teacher as an obstacle to using technology in their classrooms (Project Tomorrow, 2008).

Rural schools are less likely to have “technology savvy leaders” to help teachers learn how to integrate technology into the curriculum, not only recommending technology resources, but suggestions on how to incorporate technology into lessons. In rural schools, 36% do not have full time technology leaders, with 23% not having any technology leader at all. Compared to city schools where 79% have technology leaders, teachers in rural school districts have less training opportunities. Neason (2014) states that rural teachers may have to travel hundreds of miles for technology training opportunities, as they are not readily available to them in their own localities.

Sugar and Tryon (2014) report that many schools do not have budgets that allow for the inclusion of a technology leader. They suggest the use of virtual technology coaches to provide professional development for PreK-12 teachers as they learn how to infuse technology into their classrooms, and to support continued technology integration. The development of professional learning communities can occur within a school or virtually as well. Professional development communities allow for learning, discussing and problem-solving technology strategies where teachers can share ideas and help each other become confident with a wider range of technologies than they would on their own. They assert that ongoing professional development helps to sustain initiatives, and one-dose professional development is not enough to support teachers in their technology needs, promoting a “sustained adoption of knowledge, and buy in from teachers” (p. 55).

Neason (2014) comments that schools have been incorporating technologies like laptops and iPads or tablets into classrooms, and teachers need to be able to teach with them the way

students learn. Neason asserts that technology without training can be disastrous. The provision of a virtual technology leader and virtual technology training can fulfill training needs, keeping educators and students on track.

Limited Resources Call for Creative Solutions

Local partnerships. Rural students need opportunities to explore the world and technologies to be competitive in a global world. Small rural districts often have limited resources, both physical and human (Sundeen & Sundeen, 2013). Kerr (2014) describes a partnership between pre-service teachers and a small rural school district, to conduct a STEM fair. The STEM fair was a final project for local university students who were enrolled in an engineering and technology methods class. The STEM fair met multiple needs. It provided STEM education to an underserved community, career exposure to the students, and teaching experience to the pre-service teachers. Although the fair was open to the public, it targeted the K-6 students who attended the elementary school, and provided a variety of engineering and technology experiences. Each student who attended left with a hands-on project. Materials were donated from a local hardware store, university book store, and a NASA Educational Resource Center (NRC). (A list of NRCs by state can be found on the NRC website). Kerr reports “in subsequent years, the STEM fair team grew to include local conservation groups, preservice teachers outside of Engineering and Technology Education, parent volunteers, and school board members” (p. 8).

On-line K-12 education. Low student enrollment, geographic isolation, financial constraints, and teacher retention are all reasons why rural schools use on-line education to supplement learning or provide additional academic opportunities. On-line learning allows small school districts to individualize instruction to the needs of their student population, and provide additional programs like Advanced Placement. Rural schools utilize on-line education more than urban and suburban schools.

On-line learning, however, is not without problems. The on-line format can be challenging for students particularly since it lacks face to face interaction, and when students and teachers encounter technology problems, it can be frustrating (de la Varre, Irvin, Jordan, Hannum, & Farmer, 2014). Additionally, Barbour and Reeves (2009) note that students also need to be “highly motivated by intrinsic sources, and have strong time management, literacy, and technology skills” (p. 402).

Supporting Learning through Technology Integration

Incorporating technology into curriculum has been a focus over the past decade (NETP 2010). When schools have limited resources, virtual experiences can support content, provide background knowledge, and help support instruction of learners.

Rawson (2014), in his review of the literature on collaboration between science teachers and school librarians, states that “technology tools may be especially effective in teaching scientific thinking and habits of mind. Video games, for example, have been shown to help students develop specialized vocabulary, systems and model-based reasoning, and collaborative problem solving” (p. 24). He also posits that students are accustomed to problem-solving

collaborations within their on-line networks and these practices can move beyond the social realm and into virtual science communities and networks, thus “creating the ideal hybrid spaces where students can connect their personal interests and identities to STEM learning activities” (p. 24). Subsequently, students have access to experiences that might not readily be available at their schools.

Virtual stories and field trips cover a wide range of subjects and are “virtually” available at every developmental level. They can be tailored to the needs of individual learners, used with small groups, or with the entire class. Kirchen (2011) states they allow children to expand their worlds beyond home, school, and their community without having to worry about weather, safety, transportation, or accessibility.

Virtual field trips can support learners before a field trip to build background knowledge, or after learning to extend knowledge. They can provide opportunities to experience places that they may not otherwise have access to. Simulations to augment, not teach content can engage students in ways that lectures can’t when hands-on activities are not available. Kirchen (2011) states that when it comes to technology, anything is possible. Students can explore distant lands, learning about the people and their culture, visit different historical periods, or travel under water to learn about whales. They can be pre-developed, or teacher-created using video clips, photos and narration. This flexibility allows for differentiation by learning styles, accommodations and modifications specific to each individual in a class, complimenting learning.

Using augmented reality is an efficient way of supporting students in the classroom. Podcasts, videos, and links to websites can be added to lessons, worksheets or in learning centers. Students who are absent can watch demonstrations, or listen to recordings. Remediation, language translation, and extension activities can be added by simply adding a Quick Response (QR) code or using an application like Aurasma. QR codes are two-dimensional bar codes. QR code generator websites make it easy to add content, and QR code readers are free and can be installed on smart phones, tablets, or any computer that has a camera.

Additionally, the universality of technology can be used to cross language barriers that prevent English Language Learners from actively being involved in the classroom and with their peers, encouraging diversity and cooperation (Hollenbeck & Hollenbeck, 2009). Liu, Navarrete, and Wivagg (2014) investigated using an iPod Touch to support language and content learning with internet-based multimedia resources, provide differentiated instructional support, and extend learning from classroom to home, establishing a better home/school connection. Students indicated they practiced more when they had the iPods, helping them read better and become better oral speakers.

Styslinger, Walker, Lenker, and Fink (2014) encourage instruction to begin in the classroom and end on-line. This can be problematic when students do not have access to home computers. Kirchen (2011) states some activities like digital field trips can be printed and sent home when families do not have access to technology. Learning, in instances when technology is not available at home, can also be extended to the school library or learning centers in the classroom.

Summary

Technology has the potential to enhance academics and level the playing field for students with disabilities and English Language Learners. Students with disabilities may be more inclined and/or comfortable using technology when the rest of the class also has access to similar devices. The advancement of devices and applications has allowed students with disabilities to use every day technologies while meeting their unique needs. As technology continues to change and advance, teachers also need to keep pace, but this can be a challenge without sufficient and ongoing professional development. As teachers become familiar and comfortable with equipment, applications, and teaching strategies, they are more likely to integrate it to create engaging lessons. The integration of technology can enhance student learning when it is used as a tool, incorporated with a purpose, and provided in the context of instruction.

Additional Resources

Art/ Drawing

[Weavesilk.com](http://weavesilk.com)

<http://drawisland.com/>

<http://www.queeky.com/app>

<http://www.artsonia.com/>

Augmented Reality

<http://www.aurasma.com/aura/>

Geography

http://education.nationalgeographic.com/education/?xpop=1&ar_a=1

<http://www.scoop.it/t/geography-education?tag=technology>

QR Code Generators

<http://www.schrockguide.net/qr-codes-in-the-classroom.html>

<http://www.qrstuff.com/>

<http://mashable.com/2011/06/22/qr-code-apps-android/>

<http://www.free-qr-code.net/top-10-qr-code-readers.html>

Virtual field trips

http://www.naeyc.org/files/yc/file/201111/Kirchen_Virtual_Field_Trips_Online%201111.pdf

http://www.educationworld.com/a_tech/tech/tech071.shtml

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SPECIAL EDUCATOR PERSPECTIVES ON ESSENTIAL SCHOOL COUNSELOR KNOWLEDGE AND SKILLS

The role of the school counselor was redefined for decades based on the evolution of society, federal legislation, professional activism, and educational reforms (Ockerman, Mason, & Hollenbeck, 2012; Paisley & Borders, 1995). While all school faculty and staff worked with students with disabilities, their perspectives on what were the most pressing social, emotional, and academic issues and the most effective intervention for this population differed (Repie, 2005). Students with disabilities made up the total case load for special educators, but special educators were not able to coordinate and provide all services their students needed. Trolley, Haas, and Patti (2009) likened special education to a “multi-disciplinary effort” that involved everyone from pediatrician and other medical professionals at birth to rehabilitation counselors upon high school graduation (p.3). School counselors provided support and services for students with disabilities, but they often lacked the background knowledge and expertise with this population that their colleagues in special education possessed. In addition, while the American School Counselor Association (ASCA) recommended a ratio of 250 students to one school counselor, the average ratio for the United States was 471 to one. The state in which this study took place had a student to counselor ratio of 444 to one (U. S. Department of Education, 2012).

In the process of developing a graduate school counseling program for a small private university in the south, a group of practicing and retired school counselors identified special education as the area for which they felt least prepared when they began their school counseling careers and discussed the need to embed knowledge and skills needed by school counselors to work with students with disabilities and their families throughout the program coursework and experiences. As a result of this discussion, two faculty from the school of education surveyed special educators in the regional school districts served by the university to determine what they believed were the essential knowledge and skills school counselors needed to develop in order to effectively serve students with disabilities and their families.

American School Counselor Association (ASCA) Position Statement

While the role and function of school counselors continued to lack definition, the literature identified several areas where school counselors could provide support and services for students and disabilities and their families (Krushner, Maldonado, Pack, & Hooper, 2011). According to the ASCA, school counselors were responsible for the achievement of all students “within the scope of the comprehensive school counseling program” (p. 48). In particular, they were responsible for utilizing research and best practice with students identified as disabled based on the definition included in the Individuals with Disabilities Education Act (IDEA) of 2004. School counselors were charged with utilizing individual and group counseling and classroom guidance curriculum. They were to include parents of students with disabilities and advocate for students with disabilities. They were to identify students who needed assessment

and to participate on multidisciplinary teams assisting with academic and transition plans. (ASCA, 2013).

School counselors had a responsibility to become fluent with disability legislation such as IDEA and Section 504 of the Rehabilitation Act to ensure their students received appropriate accommodations and support. In addition, students benefited from knowledge of this legislation as well and increased capacity to advocate for themselves with this information (Milsom & Hartley, 2005).

Section 504 of the Rehabilitation Act prohibited schools that received federal funds from excluding or discriminating based on disability and required “reasonable accommodation” (U.S. Department of Justice, 2009, p. 12). School counselors worked with students who qualified for Section 504 services through assessment, accommodations, advocating for students and empowering students to advocate for themselves (Owens, Thomas, & Strong, 2011).

Transition to Postsecondary Education and Work

Krushner, et al. (2011) found that while students enrolled in special education had more contact with their school counselors than their peers in general education, they had lower educational expectations. Expectations for students with disabilities who lived in suburban areas were higher than for students with disabilities who lived in rural and urban areas. An issue for rural school counselors was the multitude of roles and responsibilities they shouldered. Issues for students with disabilities in rural schools included school location, access to college-prep programs, and financial considerations. Counselors operating from an “ecological perspective” (McMahon, Mason, Daluga-Guenther, & Ruiz, 2014, p.461) were able to facilitate the transition from high school to postsecondary education for students with disabilities through individualized services such as career interest and skill exploration, a variety of assessments, and connecting students and their families with student support services in postsecondary institutions (Krushner, et al., 2011; McMahon, et al. 2014; Milsom & Hartley, 2005).

Psychoeducational groups used concurrently with individual career counseling provided school counselors with another intervention to facilitate school-to-postsecondary education and school-to-work transition (McEachern & Kenny, 2007). In addition, counselors collaborated with special educators to help students with disabilities understand their disabilities, educational history, challenges, and successes in order to be prepared to meet the requirements of post-secondary education and to advocate for themselves (Milsom & Hartley, 2005).

Current Study

Two faculty from a small rural university in the south surveyed special educators in surrounding school systems to learn what they believe are essential school counselor knowledge and skills for working with students with disabilities and their families. The survey listed the knowledge, skills, and attitudes identified in an ASCA position statement (2014) that effective school counseling preparation programs help candidates develop. Special educators were asked to rank the items in order of importance (1 being most important and 11 being least important) in preparing school counselors for working with students with disabilities and their families.

Participants were then asked to provide additional knowledge, skills, and attitudes specific to working with students with disabilities and their families that school counselors needed to develop.

Preliminary findings indicated that special educators ranked “understanding of the continuum of mental health services, including prevention and intervention strategies for addressing academic, personal/social, and career development to enhance student success for all students” and “collaborating and consulting with stakeholders (e.g., families/guardians, teachers, administration, community stakeholders) to create learning environments promoting student educational equity and success for all students” equally as most important in preparing school counselors to work with students with disabilities and their families. Special educators also ranked “understanding of outcome research data and best practices as identified in the school counseling research literature” and “understanding the importance of serving on school leadership teams and acting as educational leaders” equally as least important in preparing school counselors to work with students with disabilities and their families (ASCA, 2013).

Participants additionally suggested that school counseling programs should recruit candidates who have a background in special education. They discussed the need for school counselors to realize that all students with special needs are not alike. Their experiences and perspectives make each student unique.

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A RURAL SOLUTION: COMPETENCY-BASED SPECIAL EDUCATION CERTIFICATION DELIVERED INDEPENDENT OF TIME AND PLACE

Many individuals seeking teaching certification are considered “non-traditional”, meaning they are older (often over the age of 24), and typically have family and work obligations in addition to attending school (National Center for Education Statistics, 2002). Attending a traditional, campus-based program can be challenging for non-traditional students. Family and work responsibilities may conflict with scheduled class times, and if the student commutes any distance to campus, this can make scheduling even more difficult. Online courses and programs may alleviate some of the scheduling issues (Choy, 2002; Paul & Cochran, 2013), but many programs still require courses to be completed within a specific timeframe. Furthermore, it is critical that adequate support is provided to enable students to successfully complete the courses (Paul & Cochran, 2013). An additional concern for many non-traditional students is that the program acknowledge the knowledge and experience they have obtained through years of real-world work and life experiences (Wyatt, 2011). In the sections below, we will describe the Western Governors University (WGU) approach to online education and the ways in which WGU addresses the needs of non-traditional students.

WGU addresses the strengths and needs of non-traditional students by offering an accredited, competency-based teacher certification program that delivers all course work absent of time and place. Students may work on their courses whenever and wherever they choose. It differs from many online programs in several significant ways: (a) it is competency-based, (b) students may complete as many courses as they are able to in each 6-month term, (c) students pursuing teacher certification participate in supervised field experiences, and (d) individualized support is available for all students.

NCATE Accreditation

WGU Teachers College is fully accredited through the National Council for the Accreditation of Teacher Education (Western Governors University, n.d.). WGU is the first fully online university to obtain NCATE accreditation.

Competency-Based

All programs at WGU are competency-based, meaning that students must demonstrate the knowledge or skills required for their specific degree. Students demonstrate the identified knowledge and skills by successfully completing course assessments. A variety of means are used for measuring competencies, including proctored objective exams, written papers, case studies, and presentations. There is no set amount of time a student must spend in each course;

they receive credit for the course once they complete the assessments. Therefore, students can take advantage of skills and knowledge they already possess to move through some courses quickly. Students are provided with online access to the materials for each course (e.g., textbooks, modules, videos) and work through them at their own pace. They are encouraged to move quickly in order to finish their program in a timely manner, but based on personal circumstances, one student may finish a given course in 2 weeks and another may take 2 months in the same course. Regardless of how long they spend in a course, as soon as all competencies are passed, they receive credit for the course.

Six-Month Terms

Students at WGU enroll in 6-month terms and tuition is paid per term, regardless of how many courses the students take each term. Thus, the more courses students complete each term, the less overall tuition they will pay. Students are required to complete a minimum of 3 units each term to remain in good standing, but are encouraged to complete at least 12 units per term in order to finish their program in a timely manner. If students complete all courses they initially enrolled in for a term, they may add more courses, but any course enrolled in must be completed within that term.

Supervised Field Experience

WGU students participate in two forms of field experiences. The first consists of Preclinical Experiences (PCE), which take place early in their studies and require 60 hours of classroom observation, in addition to completing written assignments. The second is Demonstration Teaching (DT), which is more commonly known as student teaching. DT lasts a minimum of 16 weeks for Special Education candidates (minimum of 8 weeks each in an elementary classroom and a special education classroom), and students receive recommendation for certification in both Elementary and Special Education (Mild-Moderate). All of these experiences are coordinated with students' local school districts. Students in DT are observed throughout their placements by Clinical Supervisors, who are often retired teachers or current/retired school administrators.

Student Support

Student Mentors. Individualized student support is an area in which WGU differs significantly from many online universities. When students enroll in WGU, they are assigned a Student Mentor (SM). The SMs meet regularly (weekly or biweekly) with their students throughout their WGU program, either by phone or through a video-conferencing system. They discuss overall academic progress, ensure students are engaged and making progress in their current courses, inform students about licensure exams and other program requirements, refer students to University supports, and collaborate with Course Mentors.

Course Mentors. Academic faculty members at WGU are referred to as Course Mentors (CM), as their primary role is to mentor students in the academic content of each course. CMs deliver live classes using a video-conferencing system. In order to deliver the programs absent of time or place, WGU students are not required to attend these classes, but they are offered at least

monthly for students who choose to attend. They are typically scheduled in the evening or on weekends to accommodate working students, and are recorded so students unable to attend may view them at a more convenient time. The classes are intended to address the most difficult aspects of a given course, rather than all of the course content. In addition to the classes, CMs create materials (e.g., recordings, case studies, written examples) to enhance student understanding of the course content and post them for the students to access online.

CMs have a student caseload for each course and access to a database that indicates when each student is scheduled to begin the course. CMs make an initial contact (via email or phone) to welcome the student to the course and to provide study recommendations. All the readings, videos, and other course materials are provided to the student online, and they are encouraged to stay in touch with their CM as they work through the materials. CMs provide students with a calendar link that allows students to schedule an appointment if they have questions about the course or would like to discuss the content. Students who need a bit more encouragement or support to finish the course in a timely manner can schedule a recurring weekly or bi-weekly appointment with their CM. Some students complete courses with little or no individual contact with their CM, while others have regular contact throughout the time they are working on the course.

University Supports. WGU is committed to using the online environment to offer students the support they need to succeed in their chosen program. The University offers both academic and personal supports to ensure students successfully complete their program. Examples include WellConnect, the Student Success Center (SCC), and the Center for Writing Excellence (CWE). WellConnect provides a number of services to help students balance home, work, and school, and has staff available to students 24 hours a day/7 days a week. They offer counseling services, financial and legal consultation, and parenting support. WellConnect also provides referrals to supports within the student's local community when appropriate. The SCC helps students in a number of areas that affect their academic success, including goal setting, study skills, test anxiety, time management, and career services. The CWE helps students develop college-level writing skills and to master APA formatting through individual appointments, live classes, and videos.

WGU has developed a program that successfully meets the needs of college students in a timely and cost-effective manner, while holding students to high academic standards. This nationally accredited program is delivered to students absent of time or place, which makes this approach particularly suited to non-traditional students, who may not be interested in or able to attend a campus-based program. As WGU continues to develop programs and student supports, the focus will remain on quality, accessibility, and affordability.

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EVIDENCE-BASED PRACTICES IN RURAL SCHOOLS: TEACHER CANDIDATES LEARN TO DO WHAT'S BEST FOR ALL STUDENTS

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Abstract

The topic of developing clinically rich field placements within rural schools is important to the field of special education teacher preparation. By providing teacher candidates with high-quality rural field experiences, they are more likely to consider employment in those schools. Faculty and staff at a four-year comprehensive college and a nearby community college established a common set of evidence-based practices taught during the undergraduate early field courses. This developmental sequence allowed teacher candidates to become proficient at implementing evidence-based practices in rural schools. It is hoped that this case study will demonstrate the process of how partnerships were enhanced between institutions of higher education to benefit surrounding rural school districts in western New York State.

Introduction

One of the primary recommendations from the National Council of Accreditation of Teacher Education's (NCATE) Blue Ribbon Panel on Clinical Preparation and Partnerships (2010) was that teacher educators must form and sustain meaningful partnerships for the purpose of improving student learning. No Child Left Behind (2001) and the Individuals with Disabilities Improvement Act (2004) have provided national mandates requiring student achievement to be reported for both students with and without disabilities. New York State schools are also simultaneously implementing the Common Core Learning Standards, Response-to-Intervention (RtI), and Race to the Top teacher evaluation requirements. All of these federal and state accountability requirements are aimed at increasing student achievement and holding professionals accountable. Smaller, rural school districts face the same pressures as their larger school district counterparts but with fewer resources and personnel.

This paper describes one rural teacher preparation program's journey at The State University of New York at Fredonia (Fredonia) in meeting the challenges confronting teacher

educators, special and general education teachers, and school leaders. These efforts were assisted in large part by a 325T federal five-year grant from the U.S. Department of Education, Office of Special Education Programs, entitled *Project Redesigning and Improving Special Education - Undergraduate Program (RAISE-UP)*. The teacher preparation improvement grant allowed faculty and professional staff at Fredonia and Jamestown Community College (JCC) to reflect upon the preparation of undergraduate teacher candidates for rural inclusive classrooms.

As a contextual reference, a brief historical description is provided of our rural teacher education programs and the implementation of clinically rich experiences with nearby schools. In addition, we provided a description of grant-related activities undertaken over the past six years to forge more meaningful partnerships among teacher educators in rural Chautauqua County.

Teacher Education Programs at Both Institutions

Fredonia has a long history in teacher preparation. This comprehensive college started as a normal school almost 150 years ago. Fredonia is located in the western part of New York State approximately 50 miles south of Buffalo, near the Pennsylvania state line in a rural setting surrounded by grape vineyards and dairy farms.

Our Childhood Inclusive Education program is a “merged” undergraduate general and special education teacher preparation program addressing the needs of elementary students with high-incidence disabilities as described by Blanton, Pugach and Florian (2011). Historically, this institution of higher education (IHE) prepared only general education teachers at the elementary and secondary levels until 2007, when a dual certification program was established at the elementary level (i.e., Grades 1-6 childhood and childhood with disabilities), within the College of Education.

One unique aspect of Fredonia’s teacher education program is that special education faculty members were always included in general education programs and curricula. There was never a separate special education department. Of the 18 current faculty members, three have terminal degrees in special education and many have taught core general education courses and at times supervised field-based experiences (for more complete program descriptions see Maheady, Harper, Karnes, & Mallette, 1999; Maheady, Harper, Mallette, & Karnes, 1993; Maheady, Jabot, Rey, & Michielli-Pendl, 2007).

Jamestown Community College (JCC) was founded in 1950 as part of the State University of New York (SUNY), making it the first community college in the SUNY system. JCC has two degree granting campuses and two extension sites; the main campus is in Jamestown, New York which is 80 miles south of Buffalo near the southern end of Chautauqua Lake. The teacher education program developed in 2005 was intended to be a transfer degree program. Currently, JCC has transfer degrees in Early Childhood Education, Childhood Education, and Adolescence Education.

Implementation of Clinically Rich Experiences

Implementing clinically rich experiences require sweeping changes in how teacher educators design, implement, monitor, evaluate, staff, and fund their preparation programs (NCATE, 2010). Significant among these many challenges are: (a) the implementation of more rigorous accountability procedures that link teacher education to teaching practice and the improvement of student learning, (b) more selective and diverse candidate recruitment and placement practices, (c) the fundamental redesign of teacher education curricula, and (d) expanding the knowledge and research on what makes clinical preparation effective.

Fredonia had a number of factors working in its favor when designing clinically rich experiences. *First*, the institution has a long and positive history of partnerships with area rural schools and nearby JCC. *Second*, the program had an existing infrastructure for integrating and distributing clinically rich experiences throughout candidates' preparation experiences. For example, undergraduate teacher candidates complete a minimum of five structured field experiences prior to graduation, often in rural settings. These clinically rich experiences were also mirrored in the first and second years of JCC's teacher preparation program. *Third*, university faculty members had already focused program attention on the measurement of teaching practice and student learning in schools (e.g., Maheady et al., 2007; Maheady, Mallette, & Harper, 1996).

Interface Between 325T Grant Activities and Both Teacher Education Programs

Two specific grant-related activities are presented here to highlight events during the six years of the grant which closely aligned the Fredonia and JCC teacher education programs. The initial focus was on the Fredonia syllabi review process as required by Project *RAISE-UP* followed by dialogue with JCC faculty based on the review process.

Fredonia Syllabi Review. As a result of completing the Office of Special Education Program's (OSEP) required syllabi review of 16 education courses during Year 1 of the grant, Fredonia faculty dialogued about embedding evidence-based practices throughout the curriculum. These discussions occurred during College of Education extended meetings and retreats. This systematic syllabi review process led Fredonia faculty and professional staff to enriched discussions with rural school district partners and later with JCC faculty.

Fredonia grant personnel proposed using the acronym IEP for the LRE (least restrictive environment) to summarize our syllabi review findings. The IEP stood for *Inclusiveness, Evidence-Based Practices, and Partnerships*. *Inclusiveness* indicated that all teachers, including special education teachers, should be responsive to the diversity of students in their classrooms. Next, *Evidence-Based Practices* should be systematically incorporated into teacher candidate practices to promote increased student learning outcomes. Lastly, *Partnerships* should be expanded in which our teacher candidates work with schools to promote positive student learning outcomes, especially through clinically rich field experiences.

Dialogue with JCC. As described by Chorzempa, Whittaker, Magiera, Simmons, and Givner (2013), course syllabi enhancements at Fredonia have led to more focused discussions on field-based courses. A College of Education field-based work group naturally emerged at

Fredonia which hopefully will sustain these enhancements after Project *RAISE-UP* completes its term at the end of June 2015.

This work group consisting of Fredonia faculty and professional staff, as well as JCC faculty has embedded evidence-based practices in the newly formatted lesson plans in all the early field-based courses. The common lesson plan formats have extended the discussion among faculty and staff of what is expected of our teacher candidates in rural schools leading to increased student achievement.

Evidence-Based Practices in Rural Schools

Project *RAISE-UP* grant personnel conducted surveys and interviews with rural teachers, school administrators, and higher education faculty members as grant personnel approached the end of the grant. Noteworthy survey recommendations included: (a) offer more college courses directly on site in rural schools with accompanying field experiences, (b) refocus the nature of clinical experiences by providing evidence-based practices that improve student learning outcomes within a consistent lesson plan format, and (c) use teacher evaluation language similar to surrounding rural schools in providing feedback to teacher candidates during field experiences.

Following up on the evidence-based practices suggestion from the surveys and interviews with our rural school partners, Fredonia and JCC have had ongoing dialogues on developing a common lesson plan for teacher candidates. The focus now is embedding evidence-based practices consistently in our field courses in both teacher preparation programs.

Recently, instructors at Fredonia and JCC have incorporated a common textbook on evidence-based practices in first year field experience courses. This foundational knowledge allows teacher candidates to be introduced to evidence-based practices early in the curriculum as teacher candidates learn to instruct in the classroom. The textbook will continue to be referred to in the second field experience course and beyond.

During the first and second field experiences, instructors at both institutions also have focused on connecting evidence-based practices with particular research articles establishing the effectiveness of the practices in empirical research. Teacher candidates were also introduced to incorporating citations as part of their lesson planning.

Teacher candidates have been instructed in the common lesson plan format during the third year of the field experiences. By selecting evidence-based practices for students with Individualized Education Programs, teacher candidates accommodated the learning needs of their inclusive classrooms. In the context of the general education curriculum, this activity allowed teacher candidates to adapt their instruction to meet the annual goals of the students.

Textbooks, online resources, and evidence-based practices have been shared among Fredonia faculty and JCC faculty. Multiple exposures to evidence-based practices throughout both teacher preparation programs have been critical to teacher candidates' learning. This

renewed partnership is leading to more effective instruction and increased student achievement for all students during all field experiences.

Lessons Learned

Faculty and staff have learned several lessons over the past six years as Project *RAISE-UP* has assisted in forging and sustaining school-university partnerships in rural schools. *The first lesson learned* was the need for increased communication between Fredonia faculty and JCC faculty. Focusing on the common goal of collaboration with our rural school district partners, both institutions of higher education provided clinically rich field experiences for our teacher candidates using a common lesson plan and ongoing evidence-based practices.

A second lesson learned was the time and sustained effort required to continue and develop partnerships between our rural teacher education programs and neighboring school districts. Over the past six years, the summer and winter institutes by Project *RAISE-UP* have created a venue for relationship building between Fredonia and JCC. These partnerships were enhanced through keynote speakers from schools, panel discussions by teachers, and ongoing work groups.

The third lesson learned was the benefit of the continuous exchange of expertise between Fredonia and JCC faculty, particularly on Common Core Learning Standards and evidence-based practices. The collaborations between teacher educators through shared online coursework, articles, professional development and textbooks enriched both teacher preparation programs.

Our rural school partners responded to a final Project *RAISE-UP* survey that teacher candidates needed to be prepared to teach all students including students with disabilities. Teacher candidates should be able to differentiate learning in their field placements. *A fourth lesson learned* was the importance of developing consistent teaching practices by our teacher candidates to learn what is best for all students.

Conclusion

Recognizing the high level of accountability of teachers as part of Race to the Top (2011) requirements in New York State, teacher candidates have also been held accountable in their field experiences for increased student achievement. Through the instruction of evidence-based practices, both Fredonia faculty and JCC faculty have truly enhanced their programs as they prepare teacher candidates to support rural schools. Hopefully, this case study exemplifies the benefits of ongoing dialogue and shared resources among teacher educators.

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INTEGRATION AND PERFORMANCE OUTCOMES OF THE edTPA IN A SPECIAL EDUCATION TEACHER PREPARATION PROGRAM

Abstract

This paper describes the components of the Education Teacher Performance Assessment (edTPA) and its role in one university's special education teacher preparation program. Strengths and areas of need for teacher candidates in planning, instruction, and assessment are highlighted. Emphasis is placed on reliability, supports, challenges, and implications of the edTPA.

Background

Using performance assessments in the evaluation of teacher candidates occurs in both rural and urban teacher preparation programs. Many preservice teachers participate in performance-based assessments within their teacher preparation program and will continue to undergo evaluation as novice teachers. Teachers are evaluated by observation checklists, peer review, electronic portfolios, inTASC standards and CEC standards for professional practice, and value-added modeling (Benedict, et al., 2013).

Between university key assignments and the use of senior summative teaching portfolios, evaluation of teacher candidates is expanding in higher education settings, even becoming state-mandated, as a way of providing evidence of effective, reflective teaching practices. In order to be effective, evaluation assignments and systems need to be designed to show evidence of the pre-service teachers' knowledge and understanding of the content being taught, selection and implementation of the most effective methods for teaching specific content, demonstration of the use of universal design for learning principles to meet the diverse learning needs of students, and integration of any needed accommodations and modifications for specific disability characteristics (Chung, 2008). In addition, effective evaluation systems need to integrate reflective writing, instructional artifacts and observational data to allow teacher candidates to fully demonstrate their understanding of what, why, and how they teach in order to increase student achievement (Darling-Hammond, Amrein-Beardsley, Haertel, & Rothstein, 2012).

The practice of implementing teacher performance assessments in education has received an increased amount of attention in recent research. Some states have started to require teacher preparation programs to use performance assessments in making decisions regarding credentialing (Chung, 2008; Pechione & Chung, 2006). As these performance assessments continue to be implemented, it is important to consider preservice teacher perspectives and implications (Falk, 2013; Okremtchouk, Newell, & Rosa, 2013).

Overview of edTPA

The edTPA (Education Teacher Performance Assessment) is a performance assessment being piloted by many teacher education programs and is even mandated by some states as a summative performance assessment. The edTPA was created by Stanford University Faculty and the staff at the Stanford Center for Assessment, Learning and Equity (SCALE). This preservice assessment process was designed and reviewed by educators to address whether new teachers are ready for the job and is being increasingly implemented across teacher education programs. The edTPA measures the planning, instruction, assessment, and reflection skills of preservice teachers.

At ECU, we implemented the edTPA to increase our summative evaluation of pre-service teachers and to ensure that our teacher candidates are well prepared and ready to teach. Additionally, this initiative is also a new part of our Council for the Accreditation of Educator Preparation (CAEP) standards. Over the past four years, our candidates have completed the edTPA tasks to demonstrate evidence of effective teaching and reflection.

Task 1 of the edTPA focused on planning. Candidates were required to demonstrate evidence of planning by identifying a subject-specific lesson plan segment of 3-5 lessons from a unit of instruction to plan, teach and analyze. The second task of the edTPA targeted instruction and required the candidates to provide one or two video clips no longer than 15 minutes and an instructional commentary that addressed engaging students in learning and deepening student learning. The third task of the edTPA required candidates to collect and reflect on student work samples and provide an assessment commentary. Candidates provided evidence of using feedback to guide further learning and assessment to inform instruction. Each of the tasks required components of analysis and reflection.

Implementation of edTPA

During the first year of implementation, as a SPED faculty we delved into the material, integrated the edTPA into the senior year for our candidates, and learned to score rubrics on the fly. Due to timing constraints of the implementation schedule for our Senior candidates who would be graduating in the spring, we embarked on edTPA training with general education handbooks and rubrics and attempted to apply it to the area of special education given there were not any specific special education rubrics, support guides or materials. The actual scoring was completed using the first Pearson special education field based manual.

In the second year, the first operational Special Education handbook was released too late for our senior candidates to use, so again, the Pearson special education field based manual was used. We participated in program specific training and examined reliability and validity across local evaluation scores. During this time, we noted candidate strengths and weaknesses in edTPA submissions and started to make changes in courses that directly/indirectly addressed content in planning, instruction, assessment, and reflection.

During the third and fourth year, we used the SPED operational handbook and approached training more systematically through monthly program meetings. By strategically looking at candidate performance and the areas of weakness on the edTPA submissions, faculty were able to unpack and address these issues through the curriculum and course sequence

allowing for better planning, formative assessment, IEP correlation, goals, strategy choices, and deeper reflection.

Supports

Throughout the implementation of the edTPA, there have been increasingly numerous supports in place for both faculty and candidates. Pearson training materials (e.g. Special Education Assessment Handbook, Making Good Choices in Special Education, Understanding Rubric Level Progressions) were beneficial in understanding the components of each task and rubric. Training at the College of Education level allowed SPED faculty and university supervisors to practice local scoring and compare scores for reliability. Beyond content integrated into the four-year curriculum, faculty provided additional supports to candidates. During the senior seminar that met once a week throughout the internship experience, candidates unpacked each task in the edTPA and carefully delved into rubric requirements. Candidates participated in an edTPA Support Day, where university faculty and supervisors met with interns on-campus and virtually via Skype to clarify rubric/task requirements and provide probing question stems to promote reflection, while maintaining a level of integrity in the amount of support offered. Direct feedback on written drafts was not allowed. Additionally, instructional technology support staff assisted with technical aspects of editing video clips and submission of edTPAs through Taskstream.

Candidate Performance on the edTPA

Over the four years of implementation, we phased our local scoring from a passing scoring during the first year of 2.56, to a passing score in the second year of 2.74, and finally a passing score of 3.0 during years three and four. Candidates who did not pass were required to revise and resubmit. During Year 1, individual rubric scores ranged from 3.15-3.53 on a scale of 1-5 with an overall edTPA average score of 3.32. Out of the 32 submissions, two candidates did not receive a passing score (6%). For Year 2, the individual rubric score range was 2.96-3.23 with an overall edTPA average score of 3.11 which was lower than the averages of the previous year. The percentage of those not passing on the first submission (prior to revisions) increased to approximately 11% (which was 5/47). According to validated Pearson scoring, the percentage of candidates who do not pass on the first attempt is typically around 20%. In Year 3, the individual rubric score range was 2.81-3.67 with an overall edTPA average score of 3.15 and 7% of the candidates did not pass (3/42).

On local scoring, our candidates scored highest on the edTPA Rubric 2 which required the use of knowledge of the focus learner to tailor strategies to provide support and access to challenging curriculum and instruction for learning. Additionally, candidates demonstrated a strength on Rubric 6 where candidates created a respectful learning environment that supported learner engagement. Our candidates scored lower on Rubrics 5, 10, 14, and 15 which required planning and aligning assessments to lesson objectives, using evidence to evaluate and change teaching practices, explaining a learner's use of targeted expressive and/or receptive communication skill and other communication demands, and using conclusions from the analysis of learner work and research or theory to propose the next steps of instruction related to standards/objects assessed and based on assessment records.

Challenges and Lessons Learned

There were a number of lessons learned by faculty that impacted students, courses, and processes. One lesson learned was in regards to scoring and reliability. Scoring differences that occurred among scorers with different backgrounds - fixed term, tenure track, tenured, university supervisors, and volunteer scorers need to be carefully examined.

Another important lesson learned was the influence of bias on scoring. All of us view the world through our individual lenses – our backgrounds, experiences, and preferences influence how we think and transferred to how we scored edTPA submissions as well. As we read through planning documents, viewed student work samples, watched teaching videos, and read reflections, our biases influenced how we scored.

The edTPA rubrics do not address the quality of candidate writing. Despite candidates' awareness of this fact, we emphasized that poor writing may affect how scorers perceive teacher candidates. Another bias was evident in teaching styles. Depending on personal background and teaching experiences, certain scorers may feel that selected teaching styles [are or are not] the most appropriate for specific populations of students. Similar biases existed with technology. Depending on our own knowledge and comfort with teaching with technology, and how the candidate chose to incorporate technology, there may have been a bias to view its use either more or less positively. Candidates sometimes thought that use of any technology was a bonus regardless of how it was used. A final bias noted was in regards to curriculum. Sometimes candidates were mandated by their clinical teacher/school to use specific types of curricula that may not demonstrate individual candidate skills well such as scripted curriculum programs. Also, scores whose background was in the adapted curriculum scoring submissions from general curriculum candidates or vice versa could have created bias since the scorer may be less familiar with the candidate's setting.

Implications and Summary

Overall, the edTPA is a valuable tool for program revision. We integrated curriculum changes not only to support our candidates in completion of the edTPA in preparation for their novice year of teaching, but also to strengthen our teacher preparation program for special educators. We made revisions to our program beginning with our freshmen SPED courses offered realizing that our students needed additional opportunities for practice with supports in place. By strategically looking at areas of weakness through the submissions, faculty were able to unpack and address these issues through the curriculum and course sequence allowing for better planning, formative assessment, IEP correlation, goals, strategy choices, and deeper reflection. Although candidates expressed that the completion of the edTPA was time-consuming, they felt it was a valuable process that strengthened their teaching.

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CAPTURING SUCCESS! USING REMOTE OBSERVATION TECHNOLOGY FOR TEACHER CANDIDATE SUPERVISION: WHAT DOES THE RESEARCH SAY?

In response to the shortage of special education teachers in rural areas, many teacher preparation programs are providing supervision to pre-service teachers via distance education technologies. Collins (1997) states that distance education is an option for rural educators who live at a distance from institutions of higher education (IHEs) including isolated geographic areas and/or areas of often inclement weather. Moreover, any student may have time constraints (e.g., job requirements, family responsibilities, traffic congestion in large cities) when seeking learning options (Spooner, Knight, Lo, & Wood, 2007). Collins, Schuster, and Grisham-Brown (1999) state distance education technology is growing rapidly as a means to deliver coursework, hold conferences, provide professional development, and in-service opportunities. One student wrote the following:

[Technology] is a way that many of us can continue our education that is both demanded and desired. If this program was not available, I cannot foresee how hard and long it would be to only go to school in the summer. Distance learning allows you the freedom to choose what is the best schedule that fits 'your' individual needs (Collins, 1997, p. 244).

A variety of technologies are available for course delivery (Moore & Anderson, 2003), with programs experimenting with technologies (e.g., webcams, interactive video, podcasts, Wikis, etc.) to provide support of clinical experiences (Jung, Galyon-Keramidas, Collins & Ludlow, 2006). Studies (e.g., Alger & Kopcha, 2012; Hager, Baird, & Spriggs, 2012; Koch, 2007) have shown evidence of remote observation as being beneficial to all involved, especially instructors who gain time that would have been spent in transit (Gruenhagen, McCracken, & True, 1999). Furthermore, observations may require a full day of the supervisor's time, as well as mileage and per diem costs (Hager et al., 2012).

Remote Observation Systems across IHEs

Several IHEs use synchronous technologies to provide supervision to students limited by geographical location or personal schedules (see Table 1). Technologies include web conferencing software (e.g., Adobe Connect Pro; Hudson, Knight & Collins, 2012) and Bluetooth headsets to provide live feedback to teachers during observation (e.g., Dymond, Renzaglia, Halle, Chadsey, & Bentz, 2008; Rock et al., 2009). For example, three departments (i.e., Moderate to Severe Disabilities Program [MSD], Distance Learning Programs [DLP], and Distance Learning Networks [DLN]) at the University of Kentucky (UK) collaborated to develop a system of remote observation for student teachers (Hager et al., 2012). Adobe Connect Pro™ in conjunction with a TrackerPod® was used to pan, tilt, and zoom to observe. They used a

Palantronics Bluetooth USP headset to communicate with the teacher during and following the lesson. Typical observation time for on-site visits took an entire day, however, remote observation decreased it to a half day or less. Currently, other colleges at UK are now using the system.

At Penn State University (PSU), researchers examined the effects of a university supervisor providing five, pre-service special education teachers immediate feedback while teaching using a Bluetooth headset and web conferencing software (Scheeler, McKinnon, & Stout, 2012). A multiple baseline design across participants was used to assess the effects of the immediate feedback on the percentage of three-term contingency (TTC) trials. They selected the TTC trials because they have been predictors of effective instruction (Albers & Greer, 1991). TTC trials are simple learning units comprised of an antecedent (first term), student response (second term), and feedback to the student (third term). Social validity data were collected by questionnaire to assess the acceptability of the intervention. Results indicated that use of video conferencing and providing immediate feedback (e.g., Bluetooth) was effective in increasing the targeted technique across all 5 pre-service teachers. Criteria were met with an average of 90% or more completion over three consecutive sessions. Social validity results suggested that all participants felt comfortable wearing the Bluetooth, it was not distracting, and they enjoyed receiving immediate feedback.

San Diego University (SDU) also employed distance education technology to provide supervision (Alger & Kopcha, 2000). Concerned that their traditional model of supervision was out-of-date and unresponsive, SDU piloted an online field experience. The SDU remote observation model included the use of: (a) Moodle (a course management system), (b) web cams for video conferencing, and (c) video recorders to record teaching. Cooperating teachers were trained to provide observations, with student teachers sending in a recorded video of a lesson. Although this does not represent a live, remote observation model, the authors noted benefits of increased communication between all stakeholders.

Another example of remote supervision occurred at North Georgia College and State University (NGCSU). NGCSU used the Georgia Statewide Academic and Medical System (GSAMS) that allowed live, interactive, two-way video conferencing to supervise 25 student teachers (Gruenhagen, et al., 1999). The State of Georgia installed technology across 400 sites (e.g., private colleges, P-12 public school classrooms, rural development centers), including 16 sites with two-way video conferencing. Classrooms had two video cameras, document cameras, microphones, and fax. Authors noted that the public schools welcomed the technologies and were pleased to receive student teachers in their rural areas.

At California State University (CSU), Koch (2007) described how their online program to train rural special educators to teach social skills was enhanced by remote supervision. Many of the students were at a geographical distance, but students had synchronous and asynchronous class meetings with training videos and chat rooms to communicate with peers and the instructor. The remote observation package included both web conferencing software and headsets for real-time coaching from the remote trainer. Students were provided with follow-up supervision meetings and discussions through virtual office or the course management system. Students involved in this program at CSU highly rated both the supervision and course effectiveness.

In two studies by Dymond (2008) and Rock et al. (2009), from the University of Illinois-Champaign-Urbana and Alabama, respectively, faculty used synchronous learning environment technologies to observe special education student teachers via video conferencing and “bug-in-ear” Bluetooth systems. Dymond (2008) determined the efficacy of a two-way videoconferencing system to aid in the supervision. Inter-observer agreement (IOA) and reliability looked at the effectiveness of the video conferencing system vs. face-to-face observations. Results of the IOA ranged from 75% to 92% (mean of 86%), and suggested the onsite and remote observers saw the same instructional behaviors using the Skill Monitoring Checklist. In Rock et al. (2009), investigators also used Bluetooth technology to observe 17 teachers. Rock et al. used more than one form of technology for observations. In this study, investigators used a web-cam, Bluetooth headset, and Skype. The university supervisor gave instructions/encouragement via the Bluetooth headset while observing on the video camera. The results indicated an increase in praise statements, high access to instructional practices, and re-directs.

At Utah State University, Falconer and Linguaris/Kraft (2002), also used a remote observation system for 2 student teachers in special education and conducted a qualitative analysis to determine the effectiveness of their two-way audio/video system. The study examined the extent that two-way conferencing met the needs of the student teacher, supervisor, and cooperating teachers. For this study, researchers set up two classrooms (both located approximately 285 miles from the campus) with a computer, Internet access, a modem, and an audio/video system. Results were positive, with students reporting the technology enabled them to discuss their portfolios, show graphs, conference with the instructor, and do everything that would typically be required with traditional supervision experiences.

Using distance education technologies for course remote supervision has many advantages for IHEs. Distance education can help to: (a) increase enrollment; (b) provide access to a new population of learners; and (c) enhance quality of teaching and learning (Kearsly 2000). Helping rural educators have better access to degree programs may help to reduce the problem of teacher shortages, retention, and attrition (Ludlow, 2006; Larwood, 2005). Moreover, the use of remote supervision in rural areas can reduce travel time and costs, as well as provide increased support for all involved (e.g., Alger & Kopcha, 2009; Hager et al., 2012). For IHEs to be able to keep up with the increasing demand of special education teachers and to increase and sustain high enrollment, IHEs must embrace technology. Spooner et al. (2007), stated that the University of North Carolina-Charlotte found that by transforming their traditional Moderate and Severe Disabilities program to a synchronous online program, enrollment increased from 5 to 33 students in 1 year, with the geographic range increasing by 13 counties.

According to Prensky, “Today’s students are no longer the people our educational system was designed to teach” (p. 1). They have proficiency and the ability to use new technology (Aviles, Phillips, Rosenblatt, & Vargas, 2005). Moreover, IHEs need to become more cognizant of students’ growing use and dependency on technology (Aviles et al., 2005; Bore, 2008). To meet the diverse student population who prefer to attend courses via distance education, IHEs must find ways to motivate and support faculty to develop and teach online courses (Maguire, 2005).

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Table 1

Remote Observation Technology Used Across Institutes of Higher Education for Supervising Teacher Candidates

Authors	Year	Subjects and IHE	Research Design	Dependent Variable	Independent Variable	Technology	Results
Alger & Kopcha	2010	High School General Education Certification San Diego State University	Qualitative, Constant-Comparative Method	Use of technology for field supervision	Did technology enhance or distract from field experience?	Moodle™	6 out of 8 participants expressed that the technology enhanced the field experience
Binner Falconer & Lingugaris/Kraft	2002	Special Education Practicum students, student teachers, cooperating teachers, paraprofessional, and university supervisor; Utah State University	Qualitative analysis of supervisor's field notes and opinions of preservice and mentor teachers	Perceptions of audio/video conferencing technology; supervisor's field notes taken during and following video conferences and observation sessions	Two-way conferencing technology for observation of and feedback provided to practicum and student teachers	Sorenson EnVision audio/video conferencing system	Observational benefits: access to feedback about assignments and instruction provided by practicum and student teachers; Communication benefits: access to face-to-face communication; communication enhanced in terms of frequency, immediacy; Limitations: problems with hardware and software; overcoming reactions to being on camera
Dymond, Renzaglia,	2008	Special Education	Interrater reliability	Use of technology	Can a remote	Polycom View Station SP™	There were interrater reliability scores of 75%-

Chadsey, & Bentz		Supervision University of Illinois, Urbana-Champaign	between onsite and off- site supervisors on the Skill Monitoring Checklist.	for field supervision	supervisor using technology observe the same skills as an onsite supervisor		92% with a mean of 86% on the Skill Monitoring Checklist
Gruenhagen , McCracken, & True	1999	Student Teacher Observation North Georgie College and State University	Description of process and technology used	Use of technology for field supervision	What is North Georgie College and State University using to supervise student teaching in remote rural schools	Georgia Statewide Academic and Medical System (GSAMS) a 2-way video conferencing system, wireless microphone	A description of pre-conference teaching, process of children entering classroom set up with GSAMS technology and post conference teaching There have been 25 students use this technology and the researchers “believe” this method is effective.
Hagar, Baird, & Spriggs	2013	Moderate and Severe Disabilities Special Education Certification Program University of Kentucky	Description of Remote Observation Kits	Use of technology for field supervision	Can use of technology improve supervision and feedback	Remote Observation Kits that include: Microsoft Lync™, Tracker Pod™ with Logitech HD C920™ camera, Plantronics Voyager Pro UC™ Headset Pro, Ape Case™ Medium Hard case, D-Link	Supervision and Feedback has improved.

						4 Port USB Hub, Small Flash Drive	
Koch	2007	Online Supervision of Special Educators teaching social skills	Rating Scale of course effectiveness and self-assessment of competence of skills taught	Description of use of Web camera	Does the use of web cameras	Web Cam Wireless headset	Description of pilot use of web cameras to receive real-time coaching with wireless headset Using a Likert scale where 1 was lowest and 7 highest, participants gave an average rating of 6.44 on course effectiveness and 5.89 on self-assessment of competence of skills taught in course.
Rock, Gregg, Thead, Acker, Gable, & Zigmond	2009	Teachers enrolled in a field-based graduate special education teacher preparation program; The University of Alabama, Old Dominion University, and University of Pittsburgh	Mixed methods: Quantitative & Qualitative analyses using observation of videotapes to evaluate instructional practices, , student engagement, supervisor feedback	Immediate feedback to teachers using remoteBug-in-Ear (BIE) technology	Can advances in technology enhance the capacity of traditional BIE? What is the effect of technology on participants and teacher and student behavior/ learning?	Enhanced online BIE technology; Wide angle web camera, Bluetooth headset, Skype	Enhanced BIR can be successfully implemented; Increased use of praise statements, high-access instructional practices (e.g., choral responding), and teachers' use of behavior redirects; no effect on participants' use of reprimands; Increased student engagement

			and participant responses				
Scheeler, McKinnon, & Stout	2012	Five Special education preservice teachers in practicum placements	Multiple baseline across participants	Percentage of three-term contingency trials (TTC: teacher- presented antecedent, student response, and specific feedback) completed by the teacher	Does immediate technology supported feedback increase a specific teaching technique by preservice teachers?	Webcams and Bluetooth Bug-in- Ear	Immediate feedback provided through webcam and BIE increased the completion of TTC trials participants

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ONLINE TEACHER PREPARATION: ARE WE MEETING THE STUDENTS' EXPECTATIONS?

In a dual effort to increase enrollment and improve access to courses in teacher education, universities and colleges are increasingly offering online courses and degrees. Online courses allow students more flexible access to a college education. This is particularly important to students in rural areas who may not live within a reasonable commute to a college or university campus. This is equally as important to individuals who work full time or have family or personal situations that prevent regular course attendance. Colleges are responding to this need by offering courses, and sometimes complete programs, in an online delivery format.

But, as with any innovation, progress comes with concerns. Two concerns are of particular interest in online education. First, do online courses produce adequate learning outcomes? And second, are the expectations of the consumers, in this case students, being met? Before answering those questions, it will be helpful to look at the bigger picture of online education. How many students take online courses? And how are online courses viewed by university personnel and potential employers?

Courses that are considered to be online are those in which at least 80% of the content is delivered online. These courses typically have no face-to-face meetings. According to Allen and Seaman (2014), the percentage of college students taking at least one online course has increased each year from 2002 until 2012, with a total of 33.5% of students taking at least one online course in 2012. However, while the percentage has increased each year, the rate of growth has slowed considerably in recent years suggesting a possible plateau in the near future.

An often-cited concern about online courses is the quality or quantity of learning produced. Many studies have been conducted to compare online, hybrid, and traditional face-to-face courses to determine which delivery method produced superior learning outcomes. Allen and Seaman (2014) surveyed chief academic officers at educational institutions to determine their perspective on learning outcomes. In 2004, 45% of chief academic officers reported the perception that online courses were inferior to face-to-face courses in terms of learning outcomes. However, by 2012 this percentage has dropped to 23% with a slight increase to 26% in 2013.

Despite the concerns of chief academic officers, there seems to be evidence that the learning outcomes of online courses are at least comparable to the learning outcomes of traditional face-to-face courses. In 2013, Means, Toyama, Murphy and Baki completed a meta-analysis comparing the effects of online, hybrid and face-to-face college courses. This meta-analysis included courses across a variety of disciplines including teacher education. When comparing effect sizes for outcomes, they found that online courses did not produce significantly different outcomes when compared to face-to-face instruction. However, hybrid courses (those in

which students learned at least 25%, but not all of the content online) produced significantly larger effects when compared to traditional face-to-face instruction. This meta-analysis provides a foundation for comparing online and face-to-face courses in a broad sense. But, it is still unclear whether online and face-to-face courses produce comparable outcomes when implemented within teacher education programs.

Several studies have been conducted to pinpoint the similarities and differences in outcomes for teacher education courses when offered online and face-to-face. Steinweg, Davis and Thomson (2005) compared the outcomes of students taking an introduction to exceptional children course either online or in a traditional classroom. They found no differences on skills-based projects or tests of knowledge and attitudes. Peterson and Bond (2004) looked at more specific outcomes when comparing performance of students in online and traditional courses within a post-baccalaureate teacher education program. Not surprisingly, they found that students in the online course used more web-based resources while students in face-to-face courses used more print resources. They also found that the online students were more likely to misjudge the amount of time to allocate to activities within a lesson plan. While the content learned within each course was comparable, the students reported feeling more prepared for classroom teaching after having completed the face-to-face section of the course.

Mentzer, Cryan and Teclehaimanot (2007) compared the interactions that occur in discussions in online and face-to-face courses. They found that online discussions using a chat room format included fewer explanations by the instructor and more time spent in silence. They also found that student ratings of the instructor differed with face-to-face instructors receiving higher overall ratings from students. Students in the online courses received lower grades. However, the lower grades were due to failure to attempt assignments, not lower grades on completed assignments.

While some aspects of online and traditional face-to-face courses differ, the general outcomes appear to be comparable. However, one concern that may arise is how online courses are perceived by future employers. Allen and Seaman (2013) reported that chief academic officers indicated that only about 30% of faculty accepted the value and legitimacy of online education. And about 40% of chief academic officers identified lack of acceptance of online education by potential employers as a barrier to online education. In order to assess the perspective of future employers, Huss (2007) surveyed 75 middle school principals about their willingness to hire a teacher who was trained through online education courses. Fifty-two percent reported that they would be very concerned and 48% said they would be somewhat concerned about hiring a teacher trained in an online program. Ninety-five percent said that an online degree was not as credible as a traditional degree in education. Some of the areas reported as a concern for teachers trained online were social skills and dispositions, opportunities to learn how to promote active learning in classrooms, and opportunities to engage in collaboration. More recent surveys of principals, superintendents, and teacher educators have indicated that these same negative perceptions have persisted through time (e.g. Adams, Lee & Cortese, 2012; Faulk, 2010, 2011).

Despite the negative perceptions of potential employers and academic officers, students continue to enroll in online courses. However, this doesn't mean that students have an entirely

positive perception of online courses either. According to Castle and McGuire (2010), both undergraduates and graduates preferred traditional face-to-face instruction when compared to online instruction. Given the contrast between the positive indicators for online education such as the increasing proportion of students enrolling in online courses and generally comparable learning outcomes produced through each delivery format and the negative indicators as evidenced in employer and student perceptions, it is important to further explore this issue. What aspects of online courses do students find most compelling and which aspects are failing to meet the students' expectations? The current study will begin to address these concerns.

Methods

Student perceptions were measured using end-of-course evaluations over a two-year period. End-of-course evaluations were collected through an online survey and all data were archived on secure servers operated by the university. Near the end of each semester students received emails requesting their participation in the survey. Participation in end-of-course evaluation surveys was voluntary. Survey results were made accessible to faculty after the end of grade reporting each semester. Survey results were compared for traditional face-to-face and online sections of the same course.

Participants and Setting. All students who completed an end-of-course evaluation for an undergraduate educational psychology course between Fall 2012 and Spring 2014, excluding summer terms, served as participants. All responses were collected anonymously. Demographic data of responders was not collected in the course evaluation system. However, the majority of students who enroll in this course were in the process of completing a teacher education program at the university. This study was conducted at a university with an enrollment of approximately 13,000 located in a rural area in the Southwest.

Students were allowed to select the delivery format that best met their needs. While some students likely chose based on preference for online or face-to-face courses, others selected based on necessity due to schedule conflicts or location. Some students could not attend face-to-face sections due to work or school schedules. Others lived too far from the university to travel in order to attend face-to-face course meetings.

Course Description. The educational psychology course in which the participants were enrolled was a requirement for all teacher education majors. The purpose of this course was to introduce psychological principles applicable to education including topics such as theories of development and learning, accommodations for exceptionalities, diversity, and issues in assessment.

Students enrolled in both online and face-to-face sections of this course had continuous access to *Desire 2 Learn*, the online course delivery system employed by the university. All content delivery, interactions, and assessments occurred through *Desire 2 Learn* for the online sections. Face-to-face sections only had access to limited functions within *Desire 2 Learn* including uploaded documents and assessments.

Efforts were made to align content, presentation, and assessments in the face-to-face and online sections of this course. The same textbook was used for both delivery formats. Presentation slides were similar in both delivery formats with minor differences due to instructor preference. Slides were uploaded in *Desire 2 Learn* and available for review for online students. Additional written lecture information was included in online sections. In face-to-face sections, slides were presented during lecture and also uploaded to *Desire 2 Learn* for later review. Discussions differed in online and face-to-face courses. In online courses, asynchronous discussions occurred weekly using discussion boards. Content of discussions included preplanned topics for each chapter of the textbook. Face-to-face instructors were encouraged to include similar topics in discussions, but additional discussions often occurred based on student questions and comments or instructor experiences. All assessments including assignments and tests were identical for all courses. Both online and face-to-face students completed all assessments using tools included in *Desire 2 Learn* such as assignment dropboxes in which files could be uploaded and quizzes in which students answered questions in multiple choice format.

Data Analysis. Survey responses were analyzed for 19 items. Item descriptions are included in Table 1. Each student rated these items using a five-point scale with the following values: Very Good (5); Good (4); Average (3); Poor (2); Very Poor (1). Students were also given the option of adding textual comments. Ratings were compared using Mann-Whitney U tests due to non-normal distributions. Textual comments will be analyzed descriptively.

Table 1
End-of-Course Evaluation Items

Item	Description
1	The course as a whole was...
2	The clarity of course objectives was...
3	The usefulness and relevance of course content to course objectives was...
4	The organization of the course was...
5	The instructor's overall effectiveness in teaching was...
6	The variety and appropriateness of learning activities in this course was...
7	The instructor's ability to present and explain course content was...
8	The instructor's use of examples and illustrations was...
9	The instructor's enhancement of students' interest in course content was...
10	My confidence in the instructor's knowledge was...
11	The instructor's enthusiasm was...
12	My interest level in each session (either online or face-to-face) was...
13	The availability of extra help when requested was...
14	The use of course time (either online or face-to-face) was...
15	The instructor's interest in student learning and success was...
16	The amount I learned during the course was...
17	The evaluation and grading techniques (tests, papers, projects, etc.) were...
18	The amount and appropriateness of assigned work was...
19	The clarity of my responsibilities and requirements was...

Results

Average ratings for a total of 18 course sections were compared. Nine of those sections were taught online and nine were taught in traditional face-to-face format. A total of 10 instructors taught sections during this time period. Only one instructor taught both online and face-to-face sections. Data for one face-to-face instructor were excluded due to consistently poor evaluations by the supervisor. This was done in an attempt to prevent poor teaching performance in general from influencing comparisons between delivery formats. Comparison of end-of-course evaluation item scores between online and face-to-face courses are included Table 2.

Table 2
Mean End-of-Course Evaluation Scores for Online and Face-to-Face Courses

Item	Online Mean (<i>N</i> = 9)	Face-to-Face Mean (<i>N</i> = 9)	z-score	<i>p</i> -value
1	4.56	4.43	2.12	.03
2	4.63	4.45	2.17	.03
3	4.70	4.50	2.16	.03
4	4.69	4.50	2.12	.03
5	4.61	4.39	2.12	.03
6	4.63	4.50	2.83	<.01
7	4.65	4.56	0.84	.40
8	4.65	4.56	0.80	.43
9	4.56	4.43	2.21	.03
10	4.78	4.66	1.68	.09
11	4.74	4.50	2.17	.03
12	4.44	4.10	3.05	<.01
13	4.67	4.50	2.71	<.01
14	4.68	4.50	2.61	<.01
15	4.70	4.64	1.11	.27
16	4.63	4.30	3.23	<.01
17	4.69	4.55	1.81	.07
18	4.70	4.62	1.28	.20
19	4.75	4.62	1.33	.18
Overall	4.61	4.48	2.35	.02

The average score for all items included on the end-of-course evaluations was consistently higher for online courses ($M = 4.61$) as compared to face-to-face courses ($M = 4.48$). In fact, the majority of individual item comparisons resulted in significant differences with online courses scoring higher than face-to-face courses. The exceptions to this pattern are items 7 and 8, which concerned the instructor's ability to explain content and use examples. Item 10 concerned the students' confidence in the instructor's knowledge. Also non-significant were items 15 concerning the instructor's interest in student learning and 17 through 19 concerning assessments, amount of work, and clarity of student responsibilities.

Discussion

Previous surveys of students have indicated a preference for face-to-face instruction over online instruction (Castle & McGuire, 2010). It was anticipated that an examination of end-of-course evaluations might shed some light on the aspects of online courses that students found unsatisfactory. However, the current study failed to uphold this finding. For all items surveyed, students rated online course sections more positively than face-to-face sections. This finding may be explained in several ways.

The overwhelming preference for online courses may be due to bias created by non-random assignment. Because students were allowed to choose which delivery format best met their needs, they may have entered the course with positive expectations or biases toward the delivery format they selected. However, if this were the main factor in determining course evaluation scores, then those selecting face-to-face sections should have been equally biased toward their preferred delivery format. The textual comments provided by some students may shed light on the bias toward online delivery. Of those students leaving comments in online sections, approximately one fourth left comments that addressed delivery format, many of them commenting on their appreciation that the class was offered online. Of the comments left for face-to-face sections, very few commented on the delivery format. The few comments addressing face-to-face delivery contained criticisms of the delivery format.

In order to get a representative view of student evaluations, all sections of the educational psychology course over a two-year period were included in this study. However, the results produced from this comparison may not represent those of courses covering content from different disciplines such as math, literature, or business, among many others. In fact, the same results produced in this study may differ for courses within education. Design of face-to-face instruction and online instruction can vary widely based on instructor preference. Presentation of content, types and frequencies of assessments, and the nature of interactions may differ by instructor. While efforts were made to align the face-to-face and online courses within educational psychology, this alignment may not be realistic for other courses.

Previous research has indicated that online and face-to-face instruction produce comparable learning outcomes (e.g. Means et al., 2013), but future employers may be skeptical of hiring teachers trained through online coursework (e.g. Huss, 2007). The current study showed that students' perspectives of online courses were more positive when compared to students completing face-to-face courses. Therefore, it is important to determine a method to bridge this divide.

Future researchers should consider learning outcomes from a different perspective. Instead of assessing learning outcomes for online and face-to-face courses based on projects, tests, or engagement in discussions, researchers should target performance assessments in which students must engage in authentic assessments of teaching skills. If students trained online are performing relatively poorly on assessments of teaching skills, it may explain why principals and superintendents report concerns in hiring these students. However, if students trained online are performing the same or better on assessments of teaching skills when compared to students

trained in face-to-face classes, then this information should be disseminated in order to promote more positive perspectives of online education for potential employers.

In summary, the current study adds one more piece to the puzzle of online education. The current study shows that, at least in some instances, student perceptions of online courses may be more positive as compared to face-to-face courses. To answer the question originally proposed, online courses seem to be meeting students' expectations. However, much more needs to be understood about the values and effects of online instruction in teacher education before this method of course delivery can be fully successful.

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TEACHING ASSISTIVE TECHNOLOGY PROFESSIONAL DEVELOPMENT THROUGH DISTANCE EDUCATION FORMATS

Abstract

Knowledge and confidence in assistive technology skills is vital to being a successful special education teacher. To meet this need for special education pre-service candidates, the Irene Howell Assistive Technology (IHAT) Center at East Carolina University department of Special Education, Foundations, and Research designed and implemented an on-campus and distance education professional development model to teach assistive technology curriculum and skills. This model is currently being developed to be offered in a distance education format for continuing education for in-service teachers.

Background

All areas of education, rural and urban, are at a crossroads of change in relation to policy and budgets. School districts and teachers are increasingly asked to do more with less. In the midst of these changes, the teachers (who serve the students and are committed to their own professional growth in order to better serve the students) remain. Two of the largest challenges for teachers are finding the time and money to pursue professional development that is meaningful and applicable to what is happening in classrooms and schools. Any offered professional development needs to be accessible, affordable, and pertinent to the classroom and student needs.

Assistive technology curriculum has increasingly been recommended to become embedded in special education programs of study in many institutes of higher education (Bausch & Hasselbring, 2004; Edyburn, 2004; Parette, Peterson-Karlan, & Wojcik, 2005). Typically, AT has been added as a stand-alone course which prevents the integration of how to effectively utilize AT in planning and instruction. In addition, the students may have limited access to actual assistive technology products, depending on the available resources at the college/university and surrounding area (Bausch & Hasselbring, 2004; Lahm, 2005). Infusing the AT curriculum throughout the special education course of study (as was done at this university) allows teacher candidates to more fully understand both content (e.g. how to do AT assessments, how to align AT with IEP goals and individual student needs) and gain practical experience by using the AT products and software in their planning and instruction.

New special education teachers may begin their teaching careers in settings where different types of assistive technology may or may not be available. If AT is available, district AT support teams that provide trainings for working with the technology may be short-handed as teams are stretched across a district in order to provide support in multiple settings. While one-

on-one trainings happen in classrooms on a case by case basis, this type of on-the-job training typically does not provide documentation for earning Continuing Education credits. Teachers should be able to document the time spent training on AT for their professional growth plans. In addition, teachers in rural settings often lack the resources to be able to attend specialized assistive technology trainings, even when available, since time and money become increasingly important in smaller school districts with fewer resources. By offering professional development through an online format, challenges such as travel issues are alleviated and more affordable continuing education options become beneficial for all individuals who work with individuals with disabilities. As the trend in education continues to move toward virtual and digital methods, this model meets a very real professional need in the area of assistive technology trainings.

Professional Development on Assistive Technology

The need for special education teachers to be both knowledgeable about and comfortable with the use of assistive technology has been long known in the special education field (Edyburn & Gardner, 1999). One of the biggest challenges for teacher education programs is how to effectively embed the AT curriculum throughout a program of study. In addition, recent research shows that institutes of higher education noted that access to AT continues to be a challenge (Baush & Jones, 2012). Bell, Cihak, and Judge (2010) found that acquiring skills for AT was also particularly difficult for those working through alternative certification programs.

Baush and Jones (2012) noted a variety of benefits for embedding assistive technology curriculum for pre-service and in-service teachers, universities, and local education agencies in either coursework or through professional development offerings, including, 1) better prepared novice teachers in the area of assessment and implementation of assistive technology in classroom environments, 2) increased opportunities for collaborative partnerships and initiatives with local education agencies, and 3) assistive technology training for general education teachers. While research is limited, Larrhoven, Munk, Chandler, Zurita, and Lynch (2012) found the use of online instructional modules to increase knowledge and application of assistive technology is an effective model for the provision of professional development on AT.

Overview of the IHAT Professional Development Model

The IHAT Center has developed 13 different professional development sessions for the on campus trainings. These trainings are infused across the special education course of study, as well as embedded in courses for general education majors, speech language, occupational therapy, and child development courses. Ten of these trainings have been developed as distance education options offered through Blackboard for undergraduate and graduate students. The remaining on campus sessions have not yet been developed for online facilitation due to the content of the sessions being focused on hands-on products and activities. One example is the Alternate Access session which allows on campus students to practice setting up different types of keyboards, access switches, and explore settings on iPads and other applications for alternative access to technology. These types of activities provide challenges for the distance education environment due to the lack of access to the AT devices, hardware, and software. The sessions currently developed for distance education include:

1. Intro to AT and UDL: This session introduces the term Assistive Technology, explores a variety of AT across disability populations, and highlights the connection between AT and Universal Design for Learning (UDL). No prerequisites or requirements.
2. Inspiration & Kidspiration: This session explores Inspiration and Kidspiration graphic organizing software. Participants will be able to demonstrate basic knowledge and use of the software. No prerequisites or requirements.
3. SMART Basics: This first SMART session teaches the basics of SMART Notebook software and the interactive whiteboard. While there are no prerequisites to this session, this session is a prerequisite for other SMART sessions.
4. SMART Gallery: This second SMART session further explores features of SMART Notebook software in the Gallery tab. SMART Basics is a prerequisite for this session.
5. SMART Response: This third SMART session builds on content learned in the first two sessions and explores response systems built into the hardware/software.
Prerequisites: SMART Basics and SMART Gallery.
6. Boardmaker: This session teaches Boardmaker software- a graphics program that allows picture to text alignment for a variety of applications. No prerequisites or requirements.
7. AT for Literacy: This session explores a variety of AT that supports literacy, both reading and written expression, with emphasis on Read and Write Gold software. No prerequisites or requirements.
8. Clicker 6 Software: This session explores Clicker 6 (reading and writing intervention software). No prerequisites or requirements.
9. Making Adapted Books: This session demonstrates how to make adapted books for students with specific learning needs, physical and/or cognitive disabilities. Required: All participants must bring a children's book to adapt.
10. AT Assessments & Evaluations: This session teaches the AT Evaluation cycle, common elements across several different models of AT evaluations, and formative assessment strategies for AT. No prerequisites or requirements.

Summary and Implications

The IHAT Center Online AT Professional Development will pilot continuing education modules in Summer 2015. The modules will be offered through the Blackboard platform and allow for rolling registration on a monthly basis. Continuing education credits will be offered at the completion of the modules. The advantages of the model for in-service teachers include accessibility to the trainings through a virtual format that is self-paced; a nominal fee that is affordable for teachers and school districts; and increased knowledge of assistive technology content and products, as well as practical application practice. For more information regarding the program, contact the IHAT Center at atcenter@ecu.edu.

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AN ONLINE DOCTORAL PROGRAM TO EXTEND LEADERSHIP TRAINING TO RURAL AREAS

Abstract

The West Virginia University (WVU) Department of Special Education undertook a pilot project to deliver an online doctoral program to prepare leadership personnel in special education. The program was offered on a trial basis between 2012 and 2015 and made accessible to advanced graduate students throughout the U.S. The program combined live online class sessions, online learning activities and assessments, and online supervision of professional practice experiences in teaching, research and service in schools, colleges and universities in each student's local community, and online mentoring of activities related to proposing, conducting and defending the dissertation. The paper will accomplish three (3) objectives:

1. to describe the program context and components;
2. to describe the online delivery system; and
3. to summarize program outcomes to date and discuss the advantages and limitations of preparing leadership personnel through an online doctoral program.

This information may be useful for university faculty and administrators who are currently using or may be considering online options for delivering doctoral training.

What is the Need for an Online Doctoral Program?

The critical and continuing shortage of special education faculty has been well documented (Smith & Montrosse, 2012; Smith, Pion, Tyler, & Gilmore, 2003). This shortage makes it difficult to staff teacher education programs, especially in rural areas (Smith, Robb, Watson, & Tyler, 2010). A recent study found that, although doctoral programs were producing more graduates, problems in recruiting new faculty and a growing retirement rate are expected to worsen the situation over the next decade (Montrosse & Young, 2012). The Higher Education Consortium for Special Education has estimated that pending retirements will lead to a 50% reduction in teacher educators that will limit the pool qualified special educators and impact the quality of programs and services to students (Burke et al., 2013).

Leadership training programs in education face many challenges because fewer educators with a B.A. continue on to graduate study, fewer opportunities for financial support are available, and students prefer part-time study while employed (National Science Foundation, 2011). Available data on enrolled students and recent graduates of special education doctoral programs suggest similar issues (Tyler, Montrosse, & Smith, 2012). Shulman (2009) has argued that today's doctoral programs must honor traditions yet try new approaches to address such problems. Online doctoral study has been available in for-profit universities for some time; now public and private non-profit institutions must consider whether online study is an option to help

more individuals to access special education doctoral programs to prepare for and pursue faculty careers.

Why Did WVU Develop an Online Doctoral Program?

West Virginia University (WVU) is a research extensive university and West Virginia's land-grant institution. The College of Education and Human Services has offered graduate coursework in special education and gifted education for over 50 years. The program graduated its first doctoral student with an emphasis in special education in 1965 and has graduated 75 students since that time, with about 80% taking faculty positions. During the 1990s, the Department of Special Education re-organized its doctoral program to focus on personnel preparation in special education in general rather than specific areas of specialization such as learning disabilities or deafness or educational practices such as behavior support or transition. Content was redesigned so that courses and professional practice courses addressed the three major roles of faculty members: teaching, research and service. Specific experiences such as teaching courses, supervising internships, presenting at conferences, publishing in journals, and writing grants were embedded in courses to ensure that all students had sufficient opportunities to learn and practice critical skills needed for success in a faculty career. Program graduates have been successful in securing and advancing in faculty positions in private colleges, regional universities, and a few research universities within the Appalachian region as well as in other parts of the country. Of the 15 institutions of higher education in West Virginia that prepare special education personnel, over 2/3 have one or more faculty members prepared by the WVU doctoral program in special education.

The WVU Department of Special Education has been a leader in distance education programs to prepare special education personnel in rural areas since 1990. WVU has offered fully online programs at the graduate level since 2001-2002 and has prepared over 700 new special educators since that time. All faculty members in the department teach fully online courses using both synchronous and asynchronous formats, and they also make extensive use of online technologies in campus courses. They have presented and published extensively on these topics and are recognized for their expertise in online instruction and distance education delivery. After several years of consideration, the faculty voted to undertake a pilot project to offer the doctoral program online.

What is the Focus of the WVU Doctoral Program in Special Education?

This program is designed to prepare leadership personnel to assume roles and responsibilities in personnel preparation at colleges and universities or in professional development in public schools or disability service agencies. Graduates are expected to demonstrate competencies in:

- (1) providing instruction and supervision for preservice and inservice personnel;
- (2) designing, conducting and disseminating experimental and applied research, engaging in program development and evaluation, and participating in other scholarly activities;
- (3) providing professional service to colleges and universities, local schools and agencies, regional and state education agencies, and national organizations;

(4) interpreting the knowledge base in special education and disability services with respect to policies, practices, issues, and trends; and

(5) using new technologies to enhance personal productivity and improve preservice and inservice preparation programs for prospective and practicing professionals.

What are the Components of the WVU Doctoral Program in Special Education?

This doctoral program is based upon the recommendations of the Higher Education Consortium in Special Education (HECSE), an organization of all doctoral leadership programs in this discipline. HECSE specifies that at least 18 credits of any doctoral program must be in special education and at least six (6) faculty members with terminal degrees in special education must work with students for a program to be considered a special education leadership program. It also complies with the recommendations of the U.S. Department of Education Office of Special Education Programs' Blue Ribbon Panel on Doctoral Training, a report that outlined specific knowledge and skills that leadership programs must prepare doctoral program graduates in special education to demonstrate.

Major Area Courses

Students in the doctoral program in special education are required to complete 37 credits of major area courses in three categories: core content (18 credits to develop knowledge and skills related to teacher education and special education); professional practice (7 credits of supervised practice to acquire and demonstrate skills related to specific faculty roles); and candidacy activities (a minimum of 12 credits to complete the comprehensive examination and the dissertation prospectus, study, and defense).

Core Courses

SPED 770	Policy Analysis/Development Advanced knowledge of policy studies and development in the discipline
SPED 771	Personnel Preparation Strategies Design and implementation of preservice programs for students
SPED 772	Professional Writing/Grantwriting Preparation and review of professional publications and grant proposals
SPED 773	Professional Development Models Design and implementation of professional developments for practitioners
SPED 774	Analysis/Interpretation of Research Design, conduct, reporting of research using discipline-specific paradigms
SPED 779	Current Issues and Trends Overview of issues in the discipline with implications for practice

Professional Practice Courses

SPED 781	Orientation to Doctoral Study Initiation into the program, overview of roles and responsibilities
SPED 782	Professional Practice in Systems Advocacy

SPED 783	Supervised experiences in examining/influencing state/federal policy Professional Practice in College Instruction
SPED 784	Supervised experiences in delivering campus and online courses Professional Practice in Clinical Supervision
SPED 785	Supervised experiences in supervising student interns Professional Practice in Empirical Research
SPED 786	Supervised experiences in designing, conducting, and reporting research Professional Practice in Service Activities
SPED 769	Supervised experiences in participating in professional service Leadership Career Development
	Supervised experiences in obtaining and succeeding in a faculty position

Candidacy Activities

SPED 767	Comprehensive Exam Preparation Preparation and submission of documents for formal committee approval
SPED 768	Prospectus Development Preparation of a proposal for the study for formal committee approval
SPED 797	Research (Study Approval and Implementation) Conduct of the study including obtaining IRB approval, selecting and obtaining consent of participants, and collecting and analyzing data
SPED 798	Dissertation (Document and Defense) Preparation of the dissertation reporting the outcomes of the study and presentation of the study for formal committee approval

Related Area Courses

All students in the College of Education and Human Services are also required to complete additional credits of related area courses in three categories: research core (15 credits to develop skills related to research design and analysis); educational foundations (6 credits to develop knowledge of theories, policies and issues); and minor area (18 credits minimum to support and/or broaden knowledge related to the major area). Students may use research and foundations courses to satisfy some minor area requirements. Courses completed previously as part of another degree MAY be substituted with written approval. In the pilot project, students were required to minor in Educational Psychology because this program had the most courses offered online.

Research Core Courses

EDP 612	Introduction to Research Basic concepts in proposing and designing educational research
EDP 613	Statistical Methods I Methods for designing, collecting, analyzing data for quantitative studies
SCFD 615	Qualitative Research Methods Methods for designing, collecting, analyzing data for qualitative studies

- EDP 713 Designing Single Case Research**
Methods for designing, collecting, analyzing data for small N studies
- EDP 618 Mixing Research Methodologies**
Methods for integrating quantitative and qualitative research designs

Educational Foundations Courses

- SCFD 640 History of American Education**
Forces affecting American education at K-12 and higher education levels
- EDP 600 Educational Psychology**
Psychological principles of learning and development

Minor Area Courses

- EDP 600* Educational Psychology**
Psychological principles of learning and development
- EDP 612* Introduction to Research**
Basic concepts in proposing and designing educational research
- EDP 640 Instructional Design**
Design process from needs analysis to implementation to evaluation
- EDP 703 The Adult Learner**
Theories of learning in adults and implications for educational programs
- EDP 713* Designing Single Case Research**
Methods for designing, collecting, analyzing data for small N studies
- EDP 740 Principles of Instruction**
Principles of instructional design and programming

NOTE: Courses with * are also applied to foundations and minor area requirements.

Online Delivery System

The pilot project was configured to allow students to remain employed in professional positions in public schools or colleges/universities while pursuing part-time but intensive study in this doctoral program. All regular courses are offered online using a combination of live online classes in real time and other online activities available on demand. All professional practice courses are offered online with field experiences in local public schools or colleges/universities.

Student Selection. Recruitment activities were conducted through the 2011-2012 academic year targeted at graduates of the existing online graduate programs, faculty at regional colleges and universities without a terminal degree, and individuals who took the Graduate Record Exam (GRE) during the preceding year with special education as a focus area. The WVU College of Education and Human Services agreed to provide all students with tuition waivers as a recruitment incentive for the pilot project. Admissions criteria included a Master's degree in special education, teaching certification in special education and at least two (2) years of teaching experience in special education, GRE scores, three letters of reference, and a

professional writing sample. A faculty committee reviewed all applicants, identified any candidates who met minimum requirements, and then conducted personal interviews and spontaneous writing samples using Skype to select the individuals who were approved for admission.

Distance Education Technologies. All courses were offered in Blackboard Learn 9, an online learning management system with a wide array of technology formats for content presentations, learner interactions, and learning assessments. In addition, live class sessions were offered on alternate weeks using Blackboard Collaborate, a desktop video conferencing program that permits real-time interactions between instructor and students using voice or text chat. This enabled the instructor to display presentation slides, Web sites, and desktop applications in real time and to poll the participants using yes/no, multiple choice and short answer responses, whether anonymously or not.

Program and Course Scheduling. During the pilot project, courses were scheduled so students would complete seven (7) credits in each semester in Fall, Spring and Summer to complete the program across a four (4) year period. Each semester, students completed three (3) courses – a special education course, a related area course, and a professional practice course. Live sessions were conducted on alternate weeks in the evenings, generally between the hours of 5 PM and 9 PM, except in summers when daytime classes were possible. An archive was made of each session and was available immediately and throughout the course.

Arrangements for Professional Practice Experiences. Prior to each professional practice course, students worked with the instructor to identify an appropriate placement site (when needed) in the local community and obtain permission to conduct activities as required by course assignments. Students employed as faculty members at colleges or universities could be approved to complete field experiences associated with professional practice courses in their own job settings.

What Did the Pilot Project Suggest about Online Doctoral Programs?

The pilot project for this online doctoral program in special education is poised to complete its first full program cycle and graduate two (2) potential new faculty members with a terminal degree as of August 2015. The pilot project enrolled four (4) students in August 2012. Two (2) individuals were graduates of the WVU graduate program in special education but the other two (2) were recruited through contacts with colleagues at other regional universities. One (1) student was a resident of West Virginia, two (2) students were residents of neighboring states, and the remaining one (1) student was a resident of a far western state. All students were working as special education professionals in local public school systems. Although the farthest student was in a time zone 5-6 hours (depending on daylight saving time) different from the others, which made scheduling classes, meeting with advisors, and interacting with committee members somewhat challenging, faculty and students were successful in accomplishing all needed tasks and students maintained contact with each other outside of class using email and Skype conferencing. Unfortunately, two (2) students dropped out (one immediately after admission and the other after an initial successful semester) for personal reasons, although both have expressed interest in re-joining the program when the new cohort begins in Fall 2015. The

other two (2) students were successful in completing all required courses each semester, have passed the comprehensive examinations, and are on track to complete the dissertation by the end of this academic year.

The program was originally planned as a four (4) year cycle with students taking 7 credits each semester in Fall, Spring and Summer, which faculty judged to be the maximum workload for part-time students with other work and family responsibilities. After the first year, the two (2) students asked if it would be possible to speed up their progress in the program. As a result, the schedule was converted to a three (3) year program cycle by slightly increasing the number of credits per semester in the second and third years. These students have been successful in completing the program in less time, although faculty feel that the more rapid pace caused more stress and provided less time for some activities, so that option may not be made available in future. Nevertheless, despite the fact that their training was online and not full time, these students have achieved major milestones comparable to what full time, campus-based students achieve in many doctoral programs – such as co-teaching campus and online courses, publishing in a professional journal, attending and presenting at a professional conference, writing and submitting a small grant, preparing and presenting a policy brief to a state or national policymaker, and participating on professional committees.

The advantages of online delivery of leadership preparation programs include:

- *enhanced access to the doctoral program in even fairly remote rural areas;
- *online interactions among students and with faculty promote networking and reduce feelings of isolation common to students working in rural areas; and
- *opportunity for national (and possibly international) outreach by the program.

The disadvantages of online delivery of leadership preparation programs include:

- *difficulties in developing mentoring relationships and cohort support systems when faculty and students are separated by distance;
- *some investment of time and effort needed to learn to use technologies for doctoral program activities traditionally conducted face-to-face;
- *technical difficulties with the university's server or software and the users' computers.

Outcomes to date of the pilot project for this online doctoral program suggest:

1. doctoral training in special education can be delivered in a professionally credible manner using online delivery and part-time scheduling;
2. online delivery of a doctoral program requires a significant amount of effort by the program coordinator, the faculty instructors and mentors, and the students themselves;
3. online doctoral programs need to put structures and supports in place to assist students in successfully completing the program.

Future directions for this online doctoral program include:

1. continued support for both current students through dissertation completion and graduation by August 2015;
2. recruitment of an additional 6-8 students into the program to start a new program cycle in Fall 2015 and again in each subsequent year;

3. Modifications to the program to adjust content and schedule based upon feedback from faculty and students who participated in the pilot project; and
4. Collection of data to monitor performance of students in the current and future cohorts to assess their completion rate as well as their success in obtaining faculty positions.

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Additional Resources

WVU Doctoral Program: http://specialed.wvu.edu/home/doctoral_program
 Blackboard Learning Management System: <http://www.blackboard.com>
 Blackboard Collaborate: <http://www.blackboard.com/Platforms/Collaborate/Overview.aspx>

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THE EFFECTS OF A PEER ASSISTED WRITING STRATEGY FOR ELEMENTARY-AGED STUDENTS WITH LEARNING DISABILITIES

New Emphasis on Writing

With the implementation of the Common Core State Standards (CCSS) and the new Partnership for Assessment of Readiness of College and Careers (PARCC) assessment, writing instruction has become a topic on the national stage. One of the most notable changes to the CCSS is the emphasis of writing in all disciplines (e.g. science, social studies, and mathematics) and across all grade levels (Calkins, Ehrenworth, & Lehman, 2012). Now a “central player” (Graham & Harris, 2013), writing should be viewed as equally important as reading (Calkins et al., 2012) and be integrated in various content areas. Moreover, students should be asked to write for a variety of purposes and in a variety of ways. Educators must teach strategies related to discipline-specific writing tasks in order to fully embrace the new standard of writing instruction presented by the CCSS.

The use of writing to facilitate learning is also a notable change of the CCSS. The new standards will require students to use writing as a tool for learning (Graham & Harris, 2013). Much like the push to use reading to learn, this new mentality asks students to craft texts in order to gain and build knowledge. Writing to learn requires students to dig deeper in to the content or topic by reflecting and using new knowledge. These new foci will require both special and general educators to increase the amount of effective writing instruction in their classrooms. Although this new perspective will be rigorous, it will be beneficial to students with learning disabilities (LD) and those who are considered at-risk.

Writing Instruction for Students with Learning Disabilities

According to the 2002 National Assessment of Educational Progress (NAEP) results, less than 30% of fourth graders and less than 25% of 12th graders were considered proficient or better writers (Troia, 2002; Troia, 2009). This indicates that less than a quarter of students potentially applying for post-secondary education or employment cannot write at an average or above level.

According to Graham et al. (2013), students with learning disabilities score even lower than same-aged peers in all areas of writing. In fact, the 2007 NAEP results indicated that 94% of students with LDs scored basic or below basic in eighth and 12th grades (Fahls & Andrews, 2012). Gersten and colleagues (2001) noted that “on every conceivable measure of writing performance – including both measures of writing quality and quantity, and occurring across

narrative and a range of expository text structures – students with learning disabilities write much more poorly than do students without disabilities” (p. 252). These students face challenges in comprehending tasks, monitoring their own performances, and maintaining motivation (Harris & Graham, 2013), as well as difficulties completing several processes at one time.

Writing requires many cognitive processes to function simultaneously (Torrance & Galbraith, 2006). Students must employ a variety of skills including understanding the prompt, activating background knowledge about the topic, and using strategies related to the writing process and transcription skills to complete a writing task (Graham & Harris, 2013). Students must maintain and manage several interrelated cognitive processes. Because of the processing difficulties experienced by many students with LD (Vaughn & Bos, 2015), writing is often challenging for these students (Gersten et al., 2001). Instead of juggling several demands simultaneously, these students seem to focus on one aspect of writing at a time.

Students with LD seem to employ a retrieval approach when completing writing prompts or tasks (Graham, Harris, & Larsen, 2001). These students seem to just simply spit out all of the information they can and allow that information to dictate what and how they write. Additionally, students with LD focus more on mechanics than the actual content of their writing (Gersten & Baker, 2001). Many factors likely impact this viewpoint and approach. First, these students tend to produce shorter, less sophisticated papers that contain numerous errors (Troia, 2002). They are also “insensitive” to the audience, leaving out critical information for the reader, such as the setting of the story and main characters. Secondly, students with LD typically plan as they write (Troia, 2002). Graham, Harris, and Larsen (2001) noted a significant difference among the amount of time spent on planning for both struggling and proficient writers. Less skilled writers spent merely one minute planning and brainstorming, while more advanced writers spent an average of six minutes completing prewriting activities. Finally, students with LD typically have difficulty generating content due to little prior knowledge about the writing topic and weak understanding of the content.

Peer Assisted Learning

Because many students with LD need structured supports, peer assisted learning has proven to be effective (Saddler, Behforooz, & Asaro, 2008). This type of learning allows students to partner with classmates in order to build knowledge and skills in a subject area (Topping, 2001). Topping (2001) describes this instructional method as “one of the best evidenced methods in education, consistently showing not only high effectiveness in a number of areas of student functioning, but also very high cost-effectiveness” (p. 10-11). Moreover, this method promotes self-regulation, motivation, self-esteem, and social relations with classmates.

PAWS Intervention

The purpose of this study was to provide teachers and students a supplemental writing strategy that increases the writing skills of upper elementary students with learning disabilities. This peer assisted intervention provided a script for each student pair to complete each stage of the writing process (e.g. prewriting, drafting, revising/editing, rewriting, publishing). The Peer Assisted Writing Strategy (PAWS) paired a *struggling writer* with a *typical writer*. The general

education teacher identified typical writers as students achieving at an above-average level in the area of writing as measured by grade-level standards. Struggling writers were students with an identified learning disability. These students received services from a special educator in the area of writing, and also had writing goals included as part of their Individualized Education Plans (IEPs). Students were assigned the role of *editor* and *buddy*. Editors were assigned to students identified as typical writers and the role of buddy was assigned to those identified as struggling writers.

This study included six participants, three struggling writers and three typical writers. All three pairs of students were in the fourth grade at the time of this study and received the majority of daily instruction in an inclusive general education classroom. A special education teacher and general education teacher participated in co-teaching at least three times weekly during the daily literacy block. Students were grouped in pairs of mixed ability levels. The special and general education teachers ranked all six participants according to individual writing skills (1 = highest). Pairs were formed based on this ranking (See Table 1). This ranking is similar to the method outlined by Fuchs, Fuchs, Simmons, and Mathes (2008) as part of the *Peer Assisted Learning Strategies: Reading Methods for Grades 2-6* supplemental reading curriculum.

Table 1
Participants Pairing

Group	Typical Writer	Struggling Writer
Group A	Student 1	Student 4
Group B	Student 2	Student 5
Group C	Student 3	Student 6

After students were paired, each buddy completed the baseline phase of the study. Three baseline probes were collected to determine pre-intervention performance. Students were provided a fourth-grade leveled reader about a science or social studies informational text. The baseline prompts were based on these three short texts. Audio of each passage was provided, but no other assistance was implemented during this phase. Students were not provided the assistance from a peer or teacher in order to truly measure present levels of performance. Prompts were presented similarly to the intervention prompts, described below. Prior to implementing the intervention, students participated in a training phase in which the researcher or special education teacher discussed how to use the PAWS intervention, explicitly modeling the expectations required for both the editor and buddy before implementing the intervention phase. Informal evaluations occurred at the completion of the training phase to ensure participants received sufficient training and practice.

A multiple-baseline across students single-case design (Gast, 2009) was implemented and the intervention phase for Group A began immediately following training. The intervention phase asked each pair to complete three to four writing prompts using the PAWS intervention. Fourth-grade leveled readers were used as a source of informational text for this study. Approximately nine pages were selected from each leveled reader. Writing prompts were based on these science and social studies texts. Texts were read aloud to each pair using an audio recorder. This ensured that each pair had access to the text, no matter the reading ability of each

student. Writing prompts were created using a similar format as the PARCC assessment in order to provide meaningful practice and consistent expectations. These prompts were also worded similarly to the prompts expected on the future implementation of the PARCC assessment.

The PAWS intervention included a structured script for each stage of the writing process (e.g. prewriting, drafting, editing/revising, rewriting, publishing). PAWS explicitly outlined each step of the process by providing embedded differentiation and feedback through the use of peer coaching. Specifically, this strategy prompted students to self and peer assess how effectively the topic was developed, the effectiveness of textual evidence, the organization of the writing, and the use of the correct grade-level conventions throughout the writing. For example, during the drafting stage, the editor was prompted to say the following to his/her assigned buddy

Now we are going to use the graphic organizer to put your thoughts into sentences. Don't worry about mistakes right now. We will work on that later. What is the main idea of your answer? Remember, a main idea states what the entire answer will be about. Let's write the main idea on the paper.

These prompts reminded the buddy to use the ideas that were generated during the prewriting phase to help draft the responses. It also reminded the buddy to identify the main idea of his/her response. Because students with learning disabilities often struggle managing and processing multiple tasks simultaneously (Gersten et al., 2001; Vaughn & Bos, 2015), the PAWS intervention sought to provide prompts throughout each stage of the writing process to help students monitor their own progress and to provide cues for how to effectively complete each stage. An additional goal of this intervention was to provide teachers with a supplemental program to increase the amount of instruction and time provided to writing instruction, as well as to provide increased opportunities for peer assisted learning.

Students completed the maintenance phase approximately two weeks after the intervention phase. Students completed one writing prompt without the use of the PAWS intervention. Similarly to the baseline phase, students were not provided any supports from the teachers or students. An audio of the text was still provided.

Results & Implications

A large portion of the writing research over the last decade has focused on the difference between the performances of skilled versus poor writers. Saddler & Graham (2007) examined the length of the timed writings of fourth graders. This research indicated that skilled writers produced over twice as many words as struggling writers. Because of this, it was important to include a quantitative measure to score writing in this present study. Writing samples were measured using correct word sequences.

Results indicated that implementing the PAWS intervention increases the writing fluency of upper elementary-aged students with learning disabilities. Student 4 averaged 32 correct word sequences (CWS) during the baseline phase, 63 CWS during intervention, and 55 CWS during the maintenance phase. Student 5 averaged 42 CWS during baseline, 67 CWS during intervention, and 68 CWS during the maintenance phase. Student 6 did not complete the

maintenance phase, but showed growth throughout the intervention phase. All three students identified as struggling writers increased the number of correct word sequences included from the beginning to the conclusion of this study. Results indicate that the use of the Peer Assisted Writing Strategy (PAWS) can increase the writing skills of fourth grade students with learning disabilities. More research is needed with larger sample sizes in order to generalize results.

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ESSAY DEVELOPMENT FOR SECONDARY STUDENTS WITH LEARNING DISABILITIES: GRAPHIC ORGANIZERS FOR VISUALIZING ORGANIZATIONAL PATTERNS

Written Expression for Students with Cognitive Disabilities

Written expression is difficult for many students. In fact, only about one fourth of students evaluated in a recent national writing assessment of 24,100 eighth-graders and 28,100 twelfth-graders performed at the proficient level (National Center for Education Statistics, 2012). For students with disabilities, the process of composition can be especially difficult (Mason, Kubina, & Taft, 2011). In fact, the challenges for students with disabilities are greater than for their non-disabled peers.

Rural Implications

Whether students are college bound or preparing for a career immediately after high school, developing strong writing skills should be a primary goal. Proficient writing has also been emphasized in recently developed national standards. In fact, a fundamental change to the assessment of writing in the English Language Arts (ELA) is currently being implemented. In an effort to improve college and career readiness for all students, the Common Core State Standards (CCSS) have been adopted by 45 states (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010).

The CCSS will be imposed across urban, suburban, and rural school districts in 45 states. Although approximately 20% of children in the United States are educated in rural school districts, support provided for students in isolated areas may vary greatly (Strange, Johnson, Showalter, & Klein, 2012). Based on lower student enrollment and fixed costs, diseconomies of scale exist for rural districts whose cost-per-student is often higher than for urban districts (Levin, Manship, Chambers, Johnson, & Blankenship, 2011). In fact on the most recent national writing evaluation conducted by the Institute of Education Sciences (IES) for the U.S. Department of Education, students in rural locations scored among the lower groups (National Center for Education Statistics, 2012). Twelfth-grade students performed lower at the Basic writing level than their counterparts in either city or suburban locations and less at the Proficient level than students in suburban schools (National Center for Education Statistics, 2012). Rural districts may also have a higher proportion of students receiving special education services (Johnson & Strange, 2009). So, specialized instructional delivery must be considered to improve the learning of students in rural settings (Levin et al., 2011). Indeed, it is imperative that students in rural schools receive effective writing instruction that supports those who struggle with composing.

Writing Instruction

Nonetheless, recent surveys of teachers at both the elementary and secondary levels indicated that students do not spend much time writing in school (Cutler & Graham, 2008; Gilbert & Graham, 2010; Kiuahara et al., 2009). These studies also revealed that most writing instruction takes place during elementary school years. When writing does take place, elementary students only spend about 20-25 minutes daily (Cutler & Graham, 2008). In fact, little writing instruction takes place after 3rd grade (Gilbert & Graham, 2010; Kiuahara et al., 2009). Applebee and Langer (2011) found that high school students spent over 80% of their writing time in tasks that would not be considered composition. Rather, high school writing consists mostly of fill in the blank, short answer exercises, and copying information from teacher presentations. For struggling writers, effective writing instruction will be critical to their success at all grade levels.

Writing Instruction for Students with Disabilities

Developing well written compositions depends on the capacity of working memory. When students are in the process of composing they must rely not only on knowledge stored in their long-term memories, but they also need executive control to efficiently use that knowledge as they write (Kellogg, 2008). In other words, writers must be able to balance the retrieval of information necessary for composing with the cognitive processes of planning, composing, and revising their work. The Big Ideas writing strategy is one way for students to reduce the load on their working memories since visual references in the form of graphic organizers are utilized.

Graphic Organizers

In fact, the Big Ideas writing strategy includes a form of graphic organizers. Graphic organizers have several unique benefits. Santangelo, Harris, and Graham (2007) describe three ways that graphic organizers promote learning to write. First, graphic organizers help to simplify and organize writing tasks. They also provide a guiding set of steps for completing the task. Finally, graphic organizers are representational as they make the writing process visible. Moreover, graphic organizers have been shown to have important benefits for reducing the abstractness of concepts for students with lower literacy proficiency (Nesbit & Adesope, 2006).

What are the Big Ideas?

This approach to writing instruction uses Big Ideas as an outside memory device, a combination of two graphic organizers to help writers conceptualize their writing. Essentially, the organizers are a step-by-step process for making initial decisions for writing a five-paragraph essay. The strategy's structured approach allows students to visualize the process of developing their essays. Students see patterns develop as their writing ideas are distilled into a cohesive set of ideas that are organized into useful patterns. Some may find this process too formulaic for all writers. But from experience in my own classroom, struggling writers with disabilities have benefitted from this structured approach. Moreover, once students can conceive the basic pattern of essay development, they can begin to express themselves with their own unique writing voices.

Procedures

The use of teacher modeling and metacognition are critical elements during instruction. During each step of instruction, the teacher will introduce the organizer, model its use, and describe the thought process necessary for developing the Big Ideas and the rest of the essay. The teacher will communicate to students throughout the instruction the mental steps necessary for developing the graphic organizers. The Big Ideas writing strategy is a set of two graphic organizers, the Pre-writing Planner and the Rough Draft Planner. Each is shaded to facilitate the transference of ideas from one section to the next.

The Pre-writing Planner is shaded so that students will be cued to write in the spaces for each Big Idea under the corresponding shade. The shading also flows through to the Rough Draft Planner. Shading makes it easier for students to visualize the process of developing a five-paragraph essay. The organizers can be used together or separately depending on the needs of students.

Pre-writing Planner. Begin by writing the topic on the top line of the Pre-writing Planner under My Topic (see Figure 1). Then, start brainstorming the three Big Ideas that will support the topic. Accept all ideas and help students sort similar ideas into the columns beneath each shaded box. This process is somewhat like popping corn; the ideas come quickly at first and then slow to only a few as students run out of supporting details. When new ideas wear thin, guide students to deciding on a title for each column. Write the three Big Ideas in the shaded box for each column. Note that the shading will follow the Big Ideas and supporting details throughout the use of the graphic organizers.

The next step is to narrow the Big Ideas to the most important concepts. Transfer the topic and the titles of the Big Ideas to the bubbles (Three Big Ideas) in the bottom organizer of the Pre-writing Planner. Then, choose the four most important ideas from the brainstorming lists at the top of the page to complete the lettered blanks beneath each Big Idea. Choose ideas that are rich with possibilities for student elaboration. These four ideas will become the supporting details of the essay. Help the students understand how the items still relate to each Big Idea.

Rough Draft Planner. The Rough Draft Planner was carefully developed to make it very effective for helping students to visualize a basic rough draft process (see Figure 2). Struggling writers may have difficulty conceptualizing that the introduction and conclusion are related to each other. Students may also not recognize that the body paragraphs are extensions of the concepts introduced in the Introduction. The Rough Draft Planner helps to emphasize these relationships through shading on all related elements. All of the elements of the Rough Draft Planner have been shaded to match the Big Ideas. Not only do the shades help students see the organizational pattern, but the shading extends to the sentences in the Introduction, each paragraph in the Body, and the Conclusion. In addition to the shading, the Rough Draft Planner is organized using the concept of ‘three’ for each section. Note the three Big Ideas, three supporting sentences in the Introduction and Conclusion, and the three Body paragraphs. Essentially, the Rough Draft Planner provides a set of visual cues for students to map their composition. Of course, students will be encouraged to move beyond the simplicity of the three Big Ideas once they have mastered the basics of essay organization.

Pre-writing Planner

My Topic

	Brainstorm	

Three Big Ideas

1.

a _____

b _____

c _____

d _____

2.

a _____

b _____

c _____

d _____

3.

a _____

b _____

c _____

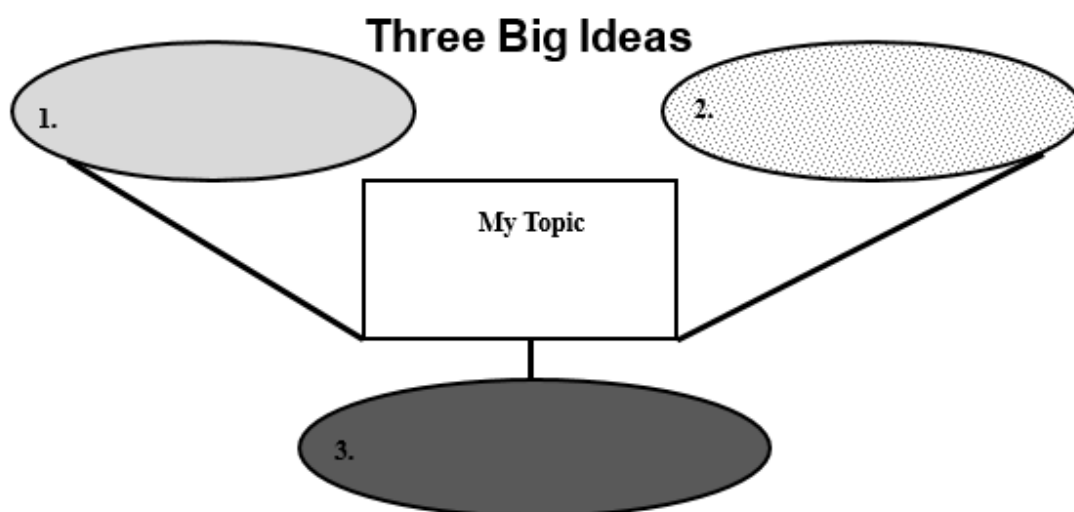
d _____

My Topic

Figure 1. *Pre-writing Planner*

The Body includes three paragraphs that each begin with a topic sentence. Each paragraph is shaded to match each Big Idea. Space is provided for writers to compose supporting sentences. Students should be alerted to the relationship between the Big Ideas and the detail sentences within each Body paragraphs. Students can use the lettered detail words from the Pre-writing Planner to develop their supporting sentences in each Body paragraph.

The Conclusion section of the planner is developed using a topic sentence and the three Big Ideas in the Body paragraphs. Tying it all together with a concluding paragraph is a step that students may overlook. Using the Rough Draft Planner helps students see the relationship between their conclusion and the rest of the essay details.



Introduction (Include a topic sentence) _____

1. _____
2. _____
3. _____

Body

1st Paragraph. (Topic Sentence) _____

- Details a. _____
- b. _____
- c. _____
- d. _____

2nd Paragraph (Topic Sentence) _____

- Details a. _____
- b. _____
- c. _____
- d. _____

3rd Paragraph (Topic Sentence) _____

- Details a. _____
- b. _____
- c. _____
- d. _____

Conclusion (Include a topic sentence.) _____

- Details a. _____
- b. _____
- c. _____
- d. _____

Figure 2. *Rough Draft Planner*

Removing Scaffolding

Student confidence will increase with practice using the graphic organizers. Eventually, support should be reduced based on the students' improving writing skills. Certainly, the goal is to teach students to independently organize their writing and generalize their learning to writing assignments in other classes. As support is faded, student progress should be carefully monitored. It is also important to help students understand how the strategy will help them write

better essays. Have students describe where else the strategy might be useful. They should be encouraged to apply the strategy to writing for assignments in their other classes. With guidance and practice, students will find it easier to organize their thoughts into effective main ideas for writing essays.

Conclusions

Effective writing is an essential skill for success in school and careers. However, many students with disabilities are not proficient writers. While their sentence writing may be acceptable, students with disabilities often struggle with conceptualizing complete essays. Moreover, students in rural schools are at increased risk for not writing proficiently as indicated by national data (National Center for Education Statistics, 2012). So, providing explicit and effective writing instruction for struggling writers in middle school and high school is imperative. Using the Big Ideas strategy is one way for students to conceptualize and develop basic essays. Once they have mastered rudimentary essays, students can begin to add their writing voice through elaboration. The Big Idea strategy coupled with teacher modeling and peer instruction is one way for students to be more successful in their composing.

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DIGITAL LITERACY

Technology is woven into every aspect of our lives, and education is no exception. The federal government calls for educators to apply advanced technologies used in our daily personal and professional lives to improve student learning, accelerate and scale up the adoption of effective practices, and use data for continuous improvement.

Schools use digital resources in a variety of ways to support teaching and learning. Electronic grade books, digital portfolios, learning games, and real-time feedback on teacher and student performance are a few ways that technology can be utilized. A search of the literature using EBSCO HOST reveals 636,835 peer-reviewed scholarly articles published in the last 10 years under the search terms “technology,” “special education,” and “disability”. Given the plethora of information on technology and special education, how can teachers decide which to use?

Research shows that when teachers are more familiar with available technologies and how to make decisions regarding which technology to use, students with disabilities and their parents are more likely to use them (King-Sears, Swanson, & Mainzer, 2011). Teachers who embrace current technologies and keep an eye out for future technologies will not only be creating universally accessible learning environments, but will also be preparing students for tomorrow’s high-tech workforce (King-Sears et al., 2011). Classroom technologies (e.g., apps, programs, high tech and low tech devices) are used to create accessible classrooms that promote differentiated instruction and student response, universal design for learning (UDL), and student engagement as the norm (Pitler, Hubbell, Kuhn, & Malenoski, 2007).

Universal Design for Learning




Universal design for learning is a guideline that gives all students an equal opportunity to learn in all environments. Students gain various opportunities through multiple means of representation, action and expression, and engagement. Universal Design for Learning can aid in the individualization of learning for students with and without disabilities. Find strategies and additional resources at www.cast.org.

Technology Teacher Tools for Language Engagement

Many students with disabilities struggle with pragmatics, articulation, approximation, and other language impairments (Drummond, 2015). Students with special needs in a general education classroom can close the learning gap with their peers with simple technology and UDL tools. Teachers need to promote engagement in learning, by encouraging students to evaluate their own progress and to use different tools to communicate their feelings and opinions. Students need to make connections between tools used in the classroom and the real world.

Technology in the classroom can help foster students' creativity in their conversations. Students may be more motivated to talk, engage and reciprocate with technology than without. Motivation can come from personal interest within different technology applications. See Table 1 for examples of tools used for language engagement.

Table1
Tools for Language Engagement






Tool Name	Summary	Usage ideas	Where to get it
	Dragon Dictations Voice-to-text tool to assist students in transferring thoughts to paper	Writing papers Brainstorming easily share	Free from app store
	Skype telecommunication application that provides video chat and voice calls from and to computers, tablets and smartphones	reciprocity pragmatics virtual field trips collaboration	Free from app store or www.Skype.com
	Proloquo2go A symbol supported communication app. that allows you to choose images or take your own image to pair with print.	communication	App Store \$215.00 or http://www.assistiveware.com/product/proloquo2go

Teacher Tools for Literacy Engagement

Academic language is primarily found in printed text. Consequently, literacy is paramount to making learning gains (Cummins, 2011). Readers who are engaged become responsible for their own literacy growth (Guthrie, Schafer, & Huang, 2001). Students take a bigger role in their reading when engaged and connected to real world experiences. Students

become more in tune to their learning when technology is used according to Marlowe, Walsh, Chapman, and Dale (2009). Moreover, students are more comfortable with the instruction when allowed to manipulate technology. There is a direct correlation between student engagement and learning (Lundeberg, Kang, Wolter, delMas, Armstrong, Borsari, & Hagley, 2011). According to Afflerbach, Cho, Kim, Crassas, and Doyle (2013), “Talented teachers know that there is more to successful reading than accurate and efficient strategy and skill use. The best strategy and skill teaching will be unsuccessful when students are unmotivated and unengaged or when they don’t believe that they can succeed” (p. 447). Today’s 21st-century teachers need to incorporate technology whenever possible to help engage students in the learning environment (Moratelli & DeJarnette, 2014). See Table 2 for examples of tools for literacy engagement.

Table 2
Tools for Literacy Engagement




Tool Name	Summary	Usage ideas	Where to get it
	Online collection of animated talking picture books	Vocabulary spelling comprehension	www.tumblebooks.com
	Build and organize thoughts on colorful diagrams	brainstorming prewriting writing	lite version is free on App store
	Micro lectures in the form of Youtube videos	most subject areas	www.khanacademy.org
	high end video game to emphasize recall of math facts	math	www.bigbrainz.com app store
	online library for students with print disabilities	comprehension vocabulary spelling	www.bookshare.org



Digital (Mobile) Technology

Mobile learning has the ability to extend the classroom unlike PC learning. Emerging technology in mobile technology like sensors, cameras, motion detectors, location awareness, social networks, internet searching and virtual reality will foster engagement across physical and virtual spaces (Newhouse, Williams, & Pearson, 2006). Mobile technology allows students seamless access to content and information which is convenient, quick and immediate. Those aspects are valuable because mobile technology allows for individualized, situated, collaborative, and informal learning without being tied to a classroom (Cheon, Lee, Crooks, & Song, 2012).

Studies have shown Internet-enabled mobile devices can support cognitive learning (Peng & Chou, 2007); mathematics learning (Kalloo & Mohan, 2011); language and literacy learning (e.g., Coe & Oakhill, 2011; Kemp & Bushnell, 2011); and game-based learning (e.g., Liao, Chen, Cheng, Chen, & Cha, 2011). Students will benefit from mobile devices by extending learning from school to home in both content support and literacy. See Table 3 for examples of tools for digital technology.

Table 3
Tools for Digital Technology

Tool Name	Summary	Usage ideas	Where to get it
	Flashcards, tests, and study games that make learning fun	Study tools	www.quizlet.com
	A symbol supported communication app. This AAC device that allows you to choose images or take your own image to pair with print.	communication	App Store \$215.00 or http://www.assistiveware.com/product/proloquo2go
	Students can manage their school life	organization	Free in app store

<p>Socrative</p> 	<p>Teachers engage and assess their students with educational activities with internet connection. Real time questioning, instant results</p>	<p>class engagement assessment progress monitoring</p>	<p>Free in app store or www.socrative.com</p>
<p>Nearpod</p> 	<p>Teachers can manage what student's see through apple devices. Allows teachers to present materials, progress monitor, and assess students.</p>	<p>student engagement create presentations assess student progress</p>	<p>Free in app store or www.nearpod.com</p>

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CELEBRATE DIFFERENCES: SAY "NO!" TO BULLYING- ONE BALLOON AT A TIME

With the increase of students resorting to suicide and other intense reactions to bullying, it is time to aggressively promote anti-bullying messages in our schools. Character education can emphasize the ways in which talents and capacities of individuals with a wide range of abilities can be developed and celebrated. The major goals of character education must include decreasing prejudice and increasing acceptance, responsibility, and citizenship. Schools and classroom teachers need innovative ways in which to address character education in a meaningful way. In response, there are innovative ways to introduce anti-bullying messages utilizing balloon art and children's literature to illustrate key points of bullying prevention and acceptance of differences.

Theoretical Framework

Now, more than ever, character education, particularly focusing on anti-bullying is important for today's children and youth. CEC, understanding the importance of providing safe and positive environments for all children, released a policy statement on Safe and Positive School Climate, April of 2008. This policy statement promotes that schools should implement a policy for prohibiting harassment and discriminatory behavior of any kind, including those related to ethnic background, language, age, abilities, family status, gender, sexual orientation, socioeconomic status, religious and spiritual values, and geographic location. In addition, an article was published in CEC Today (2008), reporting research findings that indicate that "schools implementing supportive and positive school climate strategies are more successful in creating environments conducive to learning" (p. 1).

To be proactive in creating a safe environment for learning, a school culture of acceptance, tolerance, and respect is crucial in both rural and urban communities. All entities need to be involved in building and sustaining a safe school environment, both at the pre-service and at the in-service levels. Prevention of bullying is the main goal to having a safe-school environment. To succeed in school and feel comfortable and secure, students need a safe environment in which to learn (Bullock, 2002). For many students, however, being the target of bullying and teasing from other children shatters their safe environment and in turn, impedes their learning. They may react by skipping school, claiming to be sick, or in some cases, retaliate against their persecutors. The effects of bullying can lead to low self-esteem, loneliness,

difficulty making friends (Bullock), anxiety, and suicide (Council for Exceptional Children, 2008).

According to Pacer's National Bullying Prevention Center (2012), only 10 U.S. studies have been conducted on the connection between bullying and developmental disabilities but all of these studies found that children with disabilities were two to three times more likely to be bullied than their non-disabled peers. One study shows that 60 percent of students with disabilities report being bullied regularly compared with 25 percent of all students.

Bullying is an intentional act that causes harm to others, either directly through verbal or physical attacks, or indirectly through exclusion, rejection, or manipulation. Bullying can manifest in various forms: name calling, teasing, physical attacks, severe verbal bullying, imitating, taking belongings, threats, verbal aggression, and making fun of the children with differences. Research indicates that children with disabilities or special needs may be at a higher risk of being bullied than other children (Rigby, 2002). In an article in CEC Today (Council for Exceptional Children, 2008), the issue of bullying was determined to be of particular interest for students with exceptionalities as it can be an unintentional result of inclusion. Therefore, the issue of bullying is of special interest to special educators. Statistics report that 80 percent of children with learning disabilities are bullied at school (National Children's Bureau, 2007), 40 percent of children with autism and 60 percent of children with Asperger's syndrome have experienced bullying as well (National Autistic Society, 2006). Children who have conditions that affect their appearance are also said to be more susceptible to name-calling.

Teaching character education lessons is highly valued among educators and most character education programs that are school-based, primarily involve proactive attempts to foster positive character development. Afterwards, educators are hopeful the children will actually remember the lesson. Equal to the lesson and the learning of the lesson, what is most important is how the children feel about the message taught in the lesson. The teaching of character education must be fun and memorable. It is essential that the character education message be paired with positive images so that when they recall the message, they associate the message with a positive experience rather than a negative lecture. If children remember the lesson and associate it positively, it is hoped they will actually implement the lesson and exhibit good character traits.

Use of Children's Literature to Teach Character Education Principles

The use of children's literature to teach skills across the curriculum is a common practice in schools today. With the renewed interest in character education, some educators believe that using children's literature to enhance a character education program is a practical choice and can be a very powerful tool (Brynildssen, 2003; Kilpatrick, Wolfe, & Wolfe, 1994; O'Sullivan, 2002). The use of children's literature can effectively address the growing concerns about bullying in schools. The use of children's literature provides an opportune method for teachers to approach the subject of bullying in a safe and age-appropriate way, without stigmatizing either victims or bullies (Entenman, Murnen, & Hendricks, 2006). According to Lamme (1996), quality children's literature contains many ethical concepts and democratic principles that illustrate important values. Many fairy tales (Bettelheim, 1989), fables and parables, and popular

children's books revolve around tenets of character education and pose moral dilemmas that can be used to enhance discussions on character.

In a response to the rise in bullying statistics, members of the International Reading Association Children's Literature and Reading Special Interest Group examined books and provided a list of children's books that addressed bullying in some fashion with the intent of changing children's perceptions of bullying (IRA, 2012). According to Mullin (2011), children's literature provides a neutral opportunity to discuss issues that are sensitive, such as bullying, and promotes problem-solving and role-playing. Baldis (2004) states that one of the most effective instructional strategies in teaching character education is direct teaching of the character trait in conjunction with a short story that depicts or applies the trait. Since fables are typically short stories, the use of fables to teach character is a viable approach.

Use of Balloon Art in Teaching Character Education Principles

Even though the research on the use of balloon art in teaching character education is non-existent, it is logical to believe that any type of creative outlet used to enhance the understanding of character education would be beneficial to use. Balloon art is simple to learn, even for young children. Even though balloon art is for the most part simple, it provides much satisfaction and builds self-esteem as children gain confidence in creating something unique and meaningful. When others admire and appreciate the balloon creations, this adds a further self-esteem boost for children, in addition to their having fun learning about a specific character trait or story characters.

The simplest way to utilize balloon art in teaching character education principles is to choose a children's book that has an animal character. Learn how to make the balloon animal via videos or books on the subject. Be sure the complexity of the specific balloon art (animal) is age-appropriate so not to frustrate the children when it's their turn to make the animals – you want the experience to be enjoyable.

Although the use of balloon animals can enhance character education programs, certain precautions should be taken. Some children with disabilities, particularly children with autism spectrum disorders, may be somewhat reluctant to participate in making an animal balloon because of sensory sensitivities. Particular care should be taken when introducing the balloon project so children will not feel forced to participate in what may be perceived as an unpleasant experience. The teacher should approach the activity in a fun manner by using pleasant voice tones and positive body language including positive facial expressions. Showing the example of the finished animal (e.g. *Nora the Nonupus*) is one possible motivator. Allow the children to simply hold one balloon at first and move slowly from step to step; being careful not to provide more sensory stimulation than what the children can handle. The authors of this article believe that encouraging a child to tolerate activities they would normally avoid may lead to successfully meeting sensory integration needs of the child in other areas. Accomplishing these types of sensory challenges with balloons may prove to be beneficial in many areas.

When using balloon art in character education lessons, it is essential to know if any student has an allergy to latex, since most balloons are made of latex. There are several

alternatives to latex balloons: poly tubing and bongo sticks (contact authors if further information about latex balloon alternatives is needed).

Several children's books that the authors have used for anti-bullying lessons include:

- *Nora the Nonapus by fifth graders at Estes Hills Elementary in Chapel Hill, North Carolina* ISBN: 0-439-71898-8
- *The Magic Fish* by Freya Littledale ISBN: 0590411004
- *The Bully Bee* by Angela Muse ISBN: 1478369329
- *Billy Bully* by Ana and Alvaro Galan ISBN: 0545110122
- *One* by Kathryn Otoshi ISBN: 0972394648
- *Chester Raccoon and the Big Bad Bully* by Audrey Penn ISBN: 1933718153
- *Chrysanthemum* by Kevin Henkes ISBN: 0688147321
- *We Are All Alike... We Are All Different* by kindergartners at Cheltenham Elementary School ISBN: 0590491733
- *Swimmy* by Leo Lionni ISBN: 0394826205
- *Yoko* by Rosemary Wells ISBN: 1423119835
- *Flop-Ear* by Guido Van Genechten ISBN: 0-7641-1762-9

For specific directions and picture illustrations on how to make balloon animals of *Nora* or some of the other book characters from above, visit the website, MagicForTeachers.com. In addition, you can find many "how-to-make" balloon animal videos on YouTube.

Character education principles should be taught with the intention of students remembering the lesson and applying the principle in their everyday lives. Character education lesson need to be fun, memorable, and presented in such a manner that the message is perceived as a positive experience. It is hoped that students will exhibit good character traits because of the lessons presented (Klein-Ezell, Ezell, Stanley, & Powell, 2014).

Implications for Practice in Rural Areas

Since prevention of bullying is the main goal to having a safe-school environment, it is very important that this issue is addressed in rural special education practice. Since research indicates that children with special needs are much more likely to be bullied than their nondisabled peers (PACER, 2012), the anti-bullying focus of this presentation can have a strong impact on rural special education practice. Due to the nature of this innovative project, rural special education programs can easily replicate the anti-bullying program since the materials – balloons and children's literature—are easily available.

Conclusion

Our ultimate goal is to make character education lessons as engaging and easy to understand as possible so that all students will know the effects of bullying and the importance of respecting others and considering everyone's feelings. By using a variety of creative methods to emphasize character traits in lessons, teachers can make the content more meaningful to students and perhaps reduce the occurrence of bullying in the future. Using balloon art and children's

literature provides an innovative way to illustrate the key points of bullying and its negative effect on others in a fun, yet memorable way – one balloon at a time.

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TAKE THE ROUTE TO EFFECTIVE INSTRUCTION: EVIDENCE-BASED PRACTICES IN MATH EDUCATION FOR STUDENTS WITH LEARNING DISABILITIES

Math is a critical component in school curriculum, success in the workplace, and activities of daily living (Hudson & Miller, 2006). Students with learning disabilities (LD) struggle in mathematics (Bryant, Bryant, & Hammill, 2000), and teachers struggle to provide evidence-based practices in math due to a general lack of research in teaching mathematics to students with LD. When compared to reading disabilities, research in math assessment and instruction is in its infancy. Between 1966 and 1975, the ratio of research studies conducted on reading disability (RD) versus mathematical learning disability (MLD) was 100:1. Although the ratio in these same respective areas improved between 1996 and 2005 to 14:1, math research continues to lag behind when compared to research in reading (Gersten, Clarke, & Mazzocco, 2007).

A fundamental understanding of mathematic concepts is essential to foster quality educational and vocational success of individuals with LD in rural areas. In contrast to their suburban and urban counterparts, special educators in rural areas have less access to resources, funding, and human resources and consequently at a disadvantage for providing high quality differentiated instruction to meet the unique needs of their students (Hammer et al., 2005). A meta-analysis, which provides a systematic and quantitative analysis of research literature, can provide rural educators with a synthesis of research effects and thus a good starting point for developing a portfolio of research- and evidence-based practice in mathematics instruction for students with LD. Gersten et al. (2009) provided such a meta-analysis of mathematics instructional interventions for students with LD.

In their meta-analysis of mathematics instructional interventions for students with LD, Gersten et al. (2009) grouped research into areas of effective practices. Four of the categories of effective practice - explicit instruction, visual representations, heuristics, student verbalizations - are discussed in the sections that follow. Please see Table 1 for a content analysis of research studies published in visual representations and heuristics since publication of the Gersten et al. (2009) meta-analysis.

Explicit Instruction

Explicit instruction is an effective, direct, and skill-based method of instruction that has been verified as an evidence-based practice for teaching individuals with high-incidence disabilities (Archer & Hughes, 2011). Explicit Instruction provides a format from which a wide range of skills can be taught from one-step addition and subtraction (Lee, 1992) to complex algebraic equations (Witzel, Mercer, & Miller, 2003). The National Mathematics Advisory Panel

(2008) endorses the use of explicit instruction for students with LD in teaching computation, word problem-solving and generalizing skills to new situations.

Explicit instruction incorporates a sequence of incremental steps within a lesson. Instruction begins with an advance organizer which contains the following components: gain student attention, state the goal of the lesson, discuss the relevance of the lesson, and review prerequisite skills. The body of an explicit teaching lesson includes three processes: modeling, guided practice, and independent practice. Instruction concludes with a brief review of concepts and skills that have been covered and a preview of the next day's performance objective (Archer & Hughes, 2011). Instructional components that enhance mathematics instruction for students with disabilities, including visual representations by teachers and students, the use of heuristics, and student verbalizations of mathematic activity, can be effectively incorporated into an explicit instruction lesson.

Visual Representation

The use of visual representation for problem solving has often been cited as one of the most successful instructional approaches for students with LD (e.g., Baker, 1992; Krwaec, Huwag, Montague, Kressler, & de Alaba, 2015; van Garderen, 2006). Moreover, the use of visual representations to help students find solutions to math problems has been used by teachers for many years (Gersten et al., 2009). In the meta-analysis conducted by Gersten et al. (2009), 20 studies were sub-classified and examined based on the following four categories: (a) teacher use of visual representation as an instructional approach, (b) teacher instruction using visual presentation with subsequent, mandatory student use of the approach, (c) mandatory student use of the same visual while solving problems, and (d) use of visual representation with sequencing strategy and/or range of examples.

Gersten et al. (2009) described these 20 studies as diverse, complex approaches that included the use of visual representation in isolation (e.g., use of a graphic organizer; Owen & Fuchs, 2002) or in combination with other approaches (e.g., visual cues in combination with explicit instruction; Lee, 1992). Overall results indicated that effect sizes were larger for studies that examined the use of visual representation in combination with other instructional approaches. For example, Xin, Jitendra, and Deatline-Buchman (2005), had two study conditions that incorporated the use of visuals. The first study group incorporated the use of a visual alone, in contrast to the experimental group, presented with a visual representation in combination with an instructional approach (e.g., explicit schema-base strategy) that was more specific and based on the understanding of how experts solve mathematical problems. When using the explicit, schema-based strategy, students are first required to identify the type of problem (i.e., "proportion," or "multiplicative compare") and then asked to use a diagram linked to that specific problem type in order to create a visual representation of the critical information and procedures necessary to find the solution. Finally, students translate the diagram into a math sentence and proceed to the final stage of solving for the solution. Results of the Xin et al, study indicated that the experimental group significantly outperformed the control group on immediate and delayed posttests as well as the transfer test. Studies using the visual representations have also been used in conjunction with such strategies as mnemonics (e.g., Manalo, Bunnell, & Stillman, 2000) and explicit instruction (e.g., Jitendra, et al., 1998; Marzola, 1987; Owen & Fuchs, 2002; Ross & Braden, 1991).

Following the meta-analysis of Gersten et al. (2009) three studies have been identified as examining the use of visual representation to help students with LD to solve mathematical problems. The study by Van Garderen, (2006) has been identified, but not included in Gersten et al., with two studies (e.g., Krawec, 2014; Zhang, Ding, Segall, Mo, 2012) taking place following the review in 2009. Van Garderen, (2006) and Zhang et al. (2012) both focused on the singular approaches of visual imagery and visual-chunking representation, respectively. Both studies yielded positive results with the use of visual representation positively correlating with higher mathematical word-problem performance. In the study by Krawec et al. (2013), a combination approach was used in which effects of visual representation in combination with paraphrasing accuracy were determined to be beneficial for students who were identified as low achievers (LA) and having LD in math. Moreover, results also indicated that students with LD approached problem solving in an oversimplified manner, expressing substantially less relevant information to the problem through paraphrasing and requiring significantly more pictorial representations than their average achieving (AA) same age peers. The results of this study are similar to those in previous research (e.g., Butler, Miller, Crehan, Babbitt, & Pierce, 2003; Hegarty & Kozhevnikov, 1999; van Garderen & Montague, 2003); which indicated that students with LD often need more pictorial representation than their peers, underscoring a need for more explicit instruction in their development of schematic representation of word problems.

Heuristics

Heuristics are generic problem-solving strategies used to organize and process information (Gersten, et al., 2009; Van Luit & Naglieri, 1997). Students with LD or math difficulty experience considerable difficulty in mathematics problem-solving (Cawley, Parmar, Foley, Salmon, & Roy, 2001) and are noted to have minimized working memory capacity, inattention, and slow processing speed (Fuchs & Fuchs, 2002) which are thought to impede the problem-solving process, higher order reasoning (Maccini & Ruhl, 2001), and comprehension (Learner, 2000). Heuristics are tools that can be explicitly taught to students with LD to help them organize and retain procedural frameworks for solving problems (Gersten et al., 2009).

Four studies included in Gersten's et al. (2009) meta-analysis examined the use of heuristics. Heuristic interventions included components of explicit instruction (Woodward, 2006; Woodward, Monore, & Baxter, 2001), visual representation (Woodward, 2006), and student verbalization (Van Luit & Naglieri, 1997; Hutchinson, 1993). For example, Woodward (2006) compared an integrated strategy instruction in multiplication and timed assessment of declarative knowledge to timed practice drills alone. Students with LD in the integrated strategy group outperformed students in a control with LD in the control group.

Research following the Gersten et al., (2009) meta-analysis has echoed the success of heuristic strategies for students with LD. Researchers have examined the use of *SolveIt!* a seven step heuristic strategy in which students *Read* for understanding, *Paraphrase* by retelling in their own words, *Visualize* through a picture or diagram, *Hypothesize* by creating a plan to solve the problem, *Estimate* an answer, *Compute* the arithmetic, and *Check* for accuracy (Krawec et al., 2013; Montague, 2003; Alter, 2010). Results indicated that students in experimental groups using *SolveIt!* answered more problems correctly, maintained skills over time, and used more strategies to solve problems. Iseman and Naglieri (2011) conducted another study that demonstrated the positive effects of heuristics on the learning performance of students with LD.

Iseman and Naglieri developed a procedure to support students with LD completing mathematics problems on worksheets. The procedure cued participants to: 1) establish a goal (*e.g.*, percent correct, complete assignment), 2) find a starting place, 3) develop an overall plan, 4) define specific strategies, and 5) identify patterns in worksheets. Results from these studies indicate that students with learning disability increase achievement in mathematics through instruction in procedural strategies.

Student Verbalization of Mathematical Reasoning

In mathematics instruction, student verbalization often involves a student's oral verbalization, sometimes called "think-aloud," of the cognitive process required to solve a problem or the student's verbalization of metacognitive knowledge, experience, and skills (Rosenzweig, Krawec, & Montague, 2011). The cognitive process of verbalization involves steps for solving a specific problem type, and includes behaviors such as reading and paraphrasing a problem, developing a plan for solving a problem, computing specific steps for solving the problem, and checking to ensure that all steps have been completed and computations are correct (Hutchinson, 1993; Rosenzweig et al., 2011). Verbalization of the metacognitive process involves a student's self-regulation as they complete problem solving, and includes oral statements related to self-correction, self-instruction, self-monitoring, and self-questioning (Rosenzweig, et al., 2011; Ross & Braden, 1991).

Task-relevant student verbalization has been positively correlated with persistence in problem solving and successful task completion in mathematics (Ostad & Sorenson, 2007). Montague and Applegate (1993) noted that while there was no difference in the amount of verbalizations among students with LD and their average achieving and gifted counterparts on one-step word problems, students with LD had fewer verbalizations than their higher achieving peers on more challenging two- and three-step problems. In an analysis of the type of verbalizations iterated during problem solving, Rosenzweig and colleagues (2011) reported that students with LD had fewer productive metacognitive verbalizations, such as self-correction, self-direction, self-questioning, and more non-productive verbalizations related to affect and problem difficulty.

The student verbalization studies reviewed by Gersten, et al. (2009) included overt verbalization of both cognitive and metacognitive processes. The following summaries of three studies reflect the variety of student verbalizations reported in the literature as having a positive effect on the performance outcomes of students with LD. Marzola (1987) provided students with prompt cards depicting the specific cognitive steps needed to solve addition and subtraction problems. After a teacher model, students orally verbalized the problem-solving process with one problem and then covertly verbalized or whispered the remaining problems. Students in the oral verbalization group outperformed students in the control group who were not instructed to verbalize and received only immediate feedback on their performance. In another study (Hutchinson, 1993), following direct instruction on three types of word problems, researchers provided students with cognitive self-questions on prompt cards. Students were instructed to think aloud, and they were provided with prompts and received corrective and reinforcing feedback as they verbalized and completed the process on the cue card. Students in the experimental verbalization group outperformed the direct instruction control group on a post-test and 6-week maintenance probe. In a third study reported by Schunk and Cox (1986), students were instructed to freely verbalize the process they used to solve subtraction problems that

required regrouping. In this study, students in the experimental verbalization groups outperformed students who were not instructed to verbalize their thought processes.

Conclusion

The ability to solve word problems in the field of mathematics has long been recognized as an essential component of math competency. Moreover, problem representation and the verbalization of steps toward a solution are essential to successful problem solving. Metacognitive differences have frequently been observed in students with LD, who were more likely to experience difficulties on word problems in their same age peers (Krawec et al., 2013). The present literature review provided an overview of results and implications from studies examining the effects of interventions that addressed each of the four categories of effective practice (e.g., explicit instruction, visual representations, heuristics, and student verbalizations) as noted in the meta-analysis conducted by Gersten et al. (2009). Practitioners and researchers can use Gersten's meta-analysis to identify strengths and weaknesses of identified studies as well as areas of inquiry in which a paucity of research exists and additional research is needed.

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Table 1

Research Studies found following the Gersten et al., (2009) Meta-analysis

Reference	Participants	Setting	Study Design	Dependent Variable (Math Skill)	Independent Variable (Instructional Approach)	Results
Visual Representations						
Krawec (2014)	n= 84; Grade 8	Inclusive, general education	Experimental group design	Problem Solving	Visual representation paired with paraphrasing and problem solving accuracy	<i>Effect size</i> = 1.05; visual representation accounted for greater significant variance for students with LD, with paraphrasing identified as an area of struggler for students who were LD and LA in math
Van Garderen (2006)	n= 66; Grade 6	Inclusive, general education	Experimental group design	Problem solving	Visual representation using spatial/schematic visualization and visual imagery	<i>Tukey's post hoc</i> ($\eta^2 = .58$); The use of visual and schematic imagery on assessments indicated students with LD relied more on pictorial images than schematic in comparison to students identified AA or G.
Hueristics						
Lee Swanson, Moran, Lussier, & Fung (2014)	N= 82, Grade 3, students with LD	Inclusion, general education	Experimental Group Design	Word problem solving	Explicit instruction and paraphrasing strategy for math word problems	Students who paraphrased all parts of the word problem yielded high results from students with higher working memory
Krawec, Huang, Montague,	N=77, Grade 7 and	Inclusion pre- algebra	Group Experimental	Word Problem Solving	<i>SolveIt!</i> Strategy using read,	Students in the treatment group used more strategies

Kressler, & dSe Alba (2012)	8, students with LD		Design		paraphrase, visualize, hypothesize, estimate, compute, and check the answer	to solve problems
Alter (2010)	N= 4, Grade 4 and 5, students with EBD	Alternative school	Multiple Baseline	Word Problem Solving	Token economy and <i>Solveit!</i> Strategy	On-task behavior and problems answered correctly increased
Iseman & Naglieri (2011)	N= 29, Grade 5-8, students with ADHD	Private, specialized school	Group Experimental	Procedural	Structured planning facilitation which included goals, starting place, overall plan, specific strategies, and noticing patterns in worksheets	<i>Effect size = 0.85</i> ; Students in the experimental group scored more problems correctly on worksheets and the WIAT II numerical operations subtest

Note. LD = learning disability; LA= low achieving; AA= Average achieving; G= Gifted

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LEAD POISONING: IMPLICATIONS FOR EARLY CHILDHOOD AND CHILDHOOD EDUCATION

Abstract

Lead poisoning has long range effects on children, both physically and academically. Even small amounts of lead toxicity can cause harm. Lead poisoning can affect any geographic area, although the focus of research tends to be in urban areas. Currently, one in thirty-eight children in the United States is identified with lead poisoning, impacting health, cognitive abilities and behavior. Public awareness remains a critical factor in prevention as the problem has not gone away.

Lead Exposure

Lead poisoning occurs by swallowing or inhaling a substance with lead in it. Lead gets into the blood stream and the body stores it in organs, tissues, bones and teeth. Lead poisoning can occur suddenly when an individual is exposed to a large quantity of lead, but it usually builds up in the body slowly over months or even years when a child is exposed to small amounts of lead (Center for Disease Control and Prevention [CDC], 2014).

Although in the United States, lead has been banned from paint in 1978 and from gasoline in 1996, it is still a health problem today. Imported products such as candies, toys, children's jewelry, and products like mini blinds continue to expose consumers to lead. Drinking water can also be contaminated when lead leaches into the water as it flows through lead pipes, solder, valves or brass fixtures. The most common sources of children's lead exposure occur from paint chips or dust even when paint is not peeling, and contaminated soil. When paint becomes old, or worn from activity like rubbing (such as doors, windowsills, painted cupboards or stairs), lead can get ground and scattered, and dust and soil can become contaminated. The same happens when paint is disturbed during remodeling or destruction (CDC, 2014). Children who play on porches can be exposed to porch dust containing lead (Wilson et al., 2015).

Parents may also bring home lead particles on their clothing, or bring scrap materials home from work environments (construction, repair shops) or hobbies (fishing weights, bullets, or stained glass). Exterior dust can be tracked in or blown in, contaminating floors and surfaces. Communities with high traffic areas and/or industrial pollution may have soil contaminated with lead (CDC, 2014).

Children under six are most at risk because they crawl on the floor, often put their hands in their mouths, and may eat non-edibles. Young children experience more significant effects of lead as growing bodies absorb lead at a higher rate, and children's brains are developing quickly throughout the time when they are most likely to be exposed (Merck, Sharp & Dohme, 2015).

Research shows that lead can also be transmitted prenatally (Merck et al., 2015; Ris, Dietrich, Succop, Berger, & Bornschein, 2004).

What Are Acceptable Lead Levels?

Any amount of lead can cause toxicity, and even low levels are associated with learning and behavioral problems. Subsequently, in June 2012, The CDC decreased the reference value from 10 micrograms to a marker of 5 micrograms per deciliter (pg/dL). Currently, over 450,000 children in the United States have blood lead levels greater than 5 micrograms per deciliter. Evens (2012) posits that often the assigned level by the CDC is interpreted as an acceptable or safe level of lead, that does not warrant action or concern, unduly allowing children to continue to be exposed to lead. Additionally, the CDC threshold levels are considered by other agencies “when setting action levels for lead in dust, water, food, consumer products and in other environments” (p. 116).

Effects of Lead Poisoning

Wick (2013) reports lead exposure causes irreversible cognitive and neurobehavioral abnormalities that reduce IQ. Schwartz (1994) estimates a 2.6 point decrease in IQ for every 10 pg/dL. Even low levels of 3-8 can cause mild IQ decreases and/or attention deficit disorder. Additional effects of lead exposure can be smaller size than same aged peers, lack of energy, lack of appetite, anemia, neuropathy, central nervous system damage, seizures, delayed development, learning problems, behavior problems, and/or renal dysfunction (CDC, 2014).

Disproportionality by Income and Race

Currently, 1 in 38 children in the United States test positive for lead poisoning, with disproportionate numbers by income and race. Currie (2005) indicates that poor and black children are more likely to demonstrate unsafe lead levels, “increasingly correlated with minority status, poverty, and residence in decaying older neighborhoods” (p. 125). Zhang and colleagues (2013) assert that a significant number of properties in low income areas have been poorly maintained, and “inadequate attention to this issue may lead to the reemergence of this preventable environmental problem, turning the clock back on years of national, state, and local successes” (p. 72). They note that with the dwindling of public resources, lead poisoning is placed low on public health and education agendas.

Evens (2010) states that children who were born outside the country or those who lived outside the country within six months before their blood tests showed particularly elevated risks for lead poisoning, in comparison to their U.S. born peers (p. 19). The CDC (2014) also reports that parents may rely on home remedies of medications from foreign countries that are not regulated for lead. Greta or Azacon is a Hispanic remedy for upset stomach, Litargirio is used as a deodorant especially in the Dominican Republic, and Ba-baw-san is a Chinese herb used to treat colic. Ghasard, a tonic used in India and Daw Tray, a digestive aid used in Thailand, as well as other traditional cultural medicines and remedies have all been traced back to cases of lead poisoning (Mayo Clinic, 2015).

Lead Poisoning and Academic Achievement

The results from Ris et al.'s (2004) investigation indicates prenatal exposure to lead has an impact during the early years particularly for males in the area of attention and visuoconstruction (fine motor visual-spatial awareness and construction), with effects diminishing by the end of preschool, while post natal exposure for both males and females has more long term wide range developmental effects. Other studies show that even low levels of lead poisoning in early childhood can impede education in the elementary school years, and also contribute to the achievement gap.

The objective of Miranda and colleagues' research (2007) was to determine if blood lead levels in early childhood were related to educational achievement in elementary school, as measured by end of grade testing. Using the same sample population, they linked blood lead level surveillance data from a state registry in North Carolina to later academic achievement, controlling for limited English proficiency. They assert positive blood lead levels in early childhood are related to lower educational achievement, with more impact being noted in reading than mathematics. They also noted that a higher proportion of black children had higher lead levels, stating "low-income and minority children are systematically exposed to more lead in North Carolina and nationally" (p. 1247). Evens (2012) also notes that lead poisoning rates are consistently reported to be higher in urban geographic areas.

Zhang et al. (2013) assessed the long term effects of early childhood lead exposure by linking surveillance data from the Detroit Public Health Department and academic achievement, more specifically, standardized test scores in grades 3, 5, and 8, adjusting for racial and socioeconomic disparities. Their data set consisted of 21,281 students (8,831 in grade 3, 7708 in grade 5 and 4742 in grade 8). The sample was 56% male, and 91% black. Zhang et al. found a significant association between lead exposure and the academic achievement scores as measured by the MEAP, a standardized test taken by Michigan public school students from elementary through junior high school. Applying multivariate logistic regression analysis to determine the effects of childhood lead exposure in respect to math, science, and reading scores, they found the response relationship suggests the higher a student's blood lead level was in early childhood, the worse he or she performed on the test. Their study also showed that lead levels less than 5 pg/dL was still adversely associated with academic achievement. Significant is the fact that their study looked at affects at grade 8, demonstrating that early lead exposure can have long term effects on cognitive outcomes.

Though the focus of studies tends to be centered on urban areas, lead poisoning can occur in any geographic location. Thatcher, Lester, McAlaster, Horst and Ignasias (1983) conducted one of the few studies with a rural population on the eastern shore of Maryland. Their sample of 149 children were primarily white (124), with 68 of them being males and 81 females. Although all students were in the public school system, participants were recruited via newspaper advertisements and with cooperation from the Somerset County Board of Education. The researchers were unaware of each student's academic standing and cognitive abilities. Psychometric tests were administered, with children 6 to 16 assessed using the Wechsler Intelligence Scale for Children (WISC-R) and the Wechsler Preschool and Primary Scale of Intelligence administered to 5 year olds. In addition, the Wide Range Achievement Test

(WRAT) was used to assess school achievement; the Motor Impairment Test (MIT) was administered to assess gross body coordination and manual dexterity, and the Purdue Pegboard Test to assess fine motor movements. Groups were established based on academic standing of gifted, normal, low achievers, and very low achievers, based on each child's WISC-R and WRAT scores. Using hair sample taken from the nape of the neck, Thatcher et al. discovered, by using regression analyses, a systematic and strong relationship exists between the concentration of lead in children's hair and their intelligence test performance. They assert that cognitive function is "affected before any signs of gross motor impairment are seen" (p. 355). Exposure to low levels of lead affected cognitive processes; however, motor movements were not affected, leading the researchers to believe cognitive functioning "seem to be more sensitive indicators of the effects of low levels of lead" (p. 358).

Lead Poisoning and Behavior

The Treatment of Lead Exposed Children study enrolled 780 urban children exposed to lead from four geographic areas (Baltimore, Newark, Philadelphia, and Cincinnati), measuring blood lead levels in the children periodically between age 2 and 7. At age 5, the Conners' Parent Rating Scale- Revised (CPRS-R) was administered, and at age 7, the Behavior Assessment System for Children (BASC) was administered. Controlling for IQ, data showed that lead exposure was associated with behavior problems, with "increased risk for teacher rated externalizing and school behavior problems and parent rated behavioral symptoms index" (Chen, Cai, Dietrich, Radcliffe, & Rogan, 2007, p. 654).

The effects of lead poisoning on behavior have been documented to go beyond the childhood years. In a longitudinal study conducted by Dietrich, Ris, Succop, Berger, and Bornschein (2001), they found both prenatal and postnatal lead poisoning was associated with antisocial acts and delinquency. The researchers recruited 216 adjudicated delinquent youths from the Cincinnati Lead Study. In a case control study, they found these youth had significantly higher concentrations of bone lead than a control group of socio-demographically youth from students who attended high school in Pittsburgh. The subjects, between 15-17 years of age, and their parents reported increased frequency of delinquent acts, not associated with other risk factors.

Wright and colleagues (2008) followed lead exposed children into young adulthood. In Cincinnati, Ohio, they compared the arrest records of 250 individuals aged 19-24, who were recruited at birth between 1979 and 1984. Prenatal blood exposure was measured in the late first or early second trimester, and the children were measured first quarterly, then biannually, through age 6.5 years old. Arrest records were obtained from Hamilton County spanning from age 18 to the participants current age. The sample was largely African American (90%), with relatively equal amounts of males and females, with 73% of the families having the lowest or second lowest socioeconomic status as measured by the Hollingshead Four Factor Index of Social Position. The researchers identified a total of 800 arrests, with 108 for violent offenses, with no significant difference by sex. The researchers' question whether "one factor in the disproportional representation of African-Americans in crime statistics could well be the historically higher exposure to lead in these communities" (p. 101). Needleman, McFarland, Ness, Fienberg, and Tobin (2002) conducted a similar study of 194 adolescents aged 12-18 in

Alleghany County, Pennsylvania, and did not find delinquent behavior confined to one race or ethnicity. Their data showed an “association between lead at asymptomatic doses and adjudicated delinquency” (p. 716).

Prevention is Multifaceted

Zhang et al. (2013) asserts that delayed or missed identification of children with elevated lead levels impacts school achievement and child health. Newman, Lowry, Mall and Berger (2013) discuss an “environmental health gap,” noting that medical students and pediatricians “report low self-efficacy regarding environmental history taking, discussing environmental exposures with parents, and finding diagnostic and treatment resources related to environmental exposures” (p. 9). Ris et al. (2004) alert us to the effects of prenatal lead exposure. Consistently completing an environmental assessment of expectant mothers and young children would identify children who are at risk of lead exposure sooner. Ducatman (2002) states that it can take greater than greater than 10 years to turn over one half the body’s stored lead, as lead in hair, nails and teeth has a very slow turn-over rate, which emphasizes the importance of early identification.

Maintaining a healthy and well balanced diet is important in the fight against lead poisoning. Children who have insufficient calcium, iron and zinc tend to absorb more lead (Currie, 2005). Simple hand washing before eating can also cut down on lead particles being transmitted to food, or children placing contaminated hands into their mouths. Early childhood teachers can teach young children proper hand washing techniques that, hopefully, will carry over into other environments.

Furthermore, consumers should take care when completing minor home repair projects. Attempting to remove paint by sanding generates a large amount of small particles, and painting over it may not seal in the lead. Removal of lead paint should be supervised by a lead safe certified contractor, who will dispose of hazardous waste appropriately, according to the Environmental Protection Agency (2014). A list of lead safe certified contractors can be found on the EPA website.

“Lead in porch dust can expose children through direct contact or track-in to the home” state Wilson, et al. (2015, p. 129). In Rochester, New York, they sampled 79 homes immediately after lead removal and found that the lead levels on the porches increased significantly, immediately after work was completed elsewhere in the home, but not on the porch. They assert that inadequate clean up after lead hazard removal can create areas that are more hazardous after the work was completed than before it was done. Wilson et al. advocate for guidelines or standards to be set for porch lead dust post clean up, “so lead hazard control activities do not inadvertently exposing children to Hazardous levels of lead dust” (p. 135).

Parents should also stay informed of product recalls, staying alert for product recalls by checking the Food and Drug Administration website, searching for product recalls related to lead. Another way to stay informed of product recalls is by searching www.recalls.gov website. Parents and consumers can search this site specific to lead.

Summary

Lead poisoning in childhood remains a critical health concern despite public awareness. Given what we know about lead poisoning, researchers posit that the primary way to control for it is through prevention, as not only does exposure to lead affect school readiness, academic functioning, and behavior, it can have long term consequences for health and wellness (Currie, 2005; Evens, 2010; Miranda et al., 2007; Schwartz, 1994; Thatcher et al., 1983; Wilson et al., 2015; Zhang et al., 2013). Although recent literature can be found in health and medical journals, the absence of current literature in education databases alludes that it is no longer on the radar of educational researchers. Considering the educational and societal implications, the lead problem warrants our attention.

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COLLABORATION AMONG PARENTS AND SCHOOL PERSONNEL IN A RURAL SETTING WITH DISCRETE TRAIL TRAINING IN THE TREATMENT OF AUTISM

Abstract

This paper discusses the impact of collaborative efforts of parents and school professionals in a rural setting in the treatment of Autism in an elementary aged boy. The method of treatment was discrete trial training across settings (e.g., home and school) involving the child's parents, special education teacher, and a teacher assistant. Discrete trial training across home and school led to increased academic and adaptive skills in an area where minimal services are available.

Introduction

The parents of children diagnosed with autism and other developmental disabilities are increasingly being encouraged to become active participants in their children's education, applying behavioral interventions at home and as early in the child's life as possible (Dawson & Osterling, 1997; National Research Council, 2001). Research regarding parental involvement in behavioral training has not kept pace with this recommendation. McConnell (2002) reported that the majority of behavioral intervention studies were conducted in classroom settings, with teachers and other staff acting as treatment agents or interventionists. McConnell called for research to demonstrate the effectiveness of treatment delivered in the home and community, and to evaluate procedures for training parents, siblings and peers in behavioral intervention. In a paper by Wolery and Garfinkle (2002), 72 studies were reviewed. They found that only 7 of the 72 studies mentioned parental involvement. A wealth of research has been conducted on parent training, however, few investigations to date have looked at the potential of parents as active participants and point to a need for more studies that explore the effectiveness and design of interventions where parents and teachers work together to increase outcomes. In such a scenario, the teacher and parents would determine the sequence of skills to be worked on according to the beginning, intermediate, and advanced curriculum guides used by Devlin and Harber (2004). Once goals are established, parents and teachers work on the same goals at home and at school. Consultant training for teachers and parents on data collection is essential. Data should then be recorded weekly to document progress. Once behavioral goals are mastered through one to one

sessions (e.g., teacher and child, parent and child), teachers and parents should begin generalization and maintenance of the new skill.

One of the earliest studies on the effect of parent involvement in extending and maintaining the behavior goals their children made during prior behavior therapy was conducted by Lovaas, Kogel, Simmons, and Long in 1973. In their study, 13 children received center-based treatment from behavior therapists on five classes of behavior; self-stimulation, echolalia, appropriate verbal, social non-verbal, and appropriate play. All children whose parents received consultative support and training from the therapists maintained gains or made further improvements. Research has also demonstrated that parents can be effective treatment agents in facilitating their child's behavioral change. For example, structured parent training programs have been effective in teaching parents to utilize various behavioral procedures and concepts (e.g., prompting, fading, shaping, chaining, reinforcement, punishment, data collection, generalization, and maintenance) in working with their children with autism (Anderson, Avery, DiPetro, Edwards, & Christian, 1987; Devlin & Harber, 2004; Harris, 1983; Koegal, Glahn, & Nieminen, 1978; Schillingsburg, Kelley, Roane, Kisamore, & Brown, 2009; Sigafos, O'Reilly, Ma, Edrisinha, Cannella, & Lancioni, 2006; Smith, 2001).

Devlin and Harber (2004), studied the impact of collaborative efforts of parents and school professionals in teaching a five year old boy with autism through discrete trial training across settings was found to be successful. Findings showed that young children with autism can obtain significant gains in fine motor, personal/social, language and perceptual cognitive functioning through collaborative efforts. Similarly, Charlop-Christy & Carpenter (2000) compared the efficacy of modified incidental teaching sessions with traditional discrete trial training. Parents of three children with autism were trained to deliver modified incidental teaching, traditional discrete trial, and incidental teaching in their home. The acquisition and generalization of the behavior were measured. Results indicated that modified incidental teaching sessions led to acquisition for all children. By comparison, only one child acquired the behavior with traditional incidental teaching, and two children acquired the behavior with discrete trial. Following parental education and practice with feedback, improvements were noted in parents' use of behavioral skills with their children as well as accelerated rates of child language development (Harris, 1983). Student gains have also been shown to be sustainable, with reports of correct use of obtained skills lasting as far as 12 months following training. Crockett, Fleming, Doepke, and Stevens (2005) studied the effects of parent training and DTT. They found that there was a significant gain in acquisition of skills in all three children included in the study, indicating that parents are effective treatment agents.

The purpose of parent training programs is to teach parents to change their behaviors in specific ways in order to foster change in their children's behavior (Kaiser & Fox, 1986). More specifically the major goal of behavioral parent training is to provide parents with an effective way to teach their child the skills they will need to function optimally in their daily environments (Kaiser & Fox, 1986). Dillenburger, Keenan, Gallagher, and McElhinney (2004), examined parents' perceptions of the outcome of discrete trial training programs. Twenty-two questionnaires were completed by two groups of parents. The first group completed an introductory course in applied behavior analysis and was in the early stages of implementing discrete trial training programs with their children. The second group had been involved in

education for more than two years. Both groups of parents reported a positive impact. The long-term group reported that they had achieved complex goals with their children, whereas the short-term group reported an immediate positive impact on child and family functioning and parental self-esteem.

Thomas, Ellis, McLaurin, Daniels and Morrissey (2007) identified rural families and their access to autism-related services in North Carolina. They found access to care was limited for families with low parental education, living in nonmetropolitan areas, and few services available that followed major treatment approaches. In using services available to families in rural areas, disparities associated with residence and education pointed to the need to develop family-level interventions that would address barriers to services for children with ASD. Little data exists about services in rural areas. Finally, the paucity of services in rural settings for families of children with ASD necessitate the training of parents as interventionists. Wagenfeld (2003) listed the following differences between urban and rural communities: rural areas have more poverty, lower incomes, and higher unemployment; there are more uninsured people and more people on Medicare insurance; the population is more elderly; and fewer ethnic minority group members live in rural areas, but those who do have a higher poverty rate, as do rural children. Rural residents emphasize hard work, mastery of the environment, and close family and community ties (Campbell & Gordon, 2003).

In conclusion, involving parents as partners in treatment, formalized through the use of systematic parent and school personnel training programs, represents natural progression in the development of ultimately effective treatment programs for children with developmental disabilities (Harris, 1983), particularly those in rural settings. While behavioral parent training programs to date appear to be equally as effective as behavioral personnel training programs in developmental disabilities (Reid & Parsons, 1995). This study illustrated that in rural settings with limited resources, the use of parents as treatment agents within the home setting along with DTT in the school setting, increased overall skill development both at home and at school. Teachers should utilize discrete trial training and involve parents in its use. When such collaboration occurs, skill development increased drastically.

Method

Purpose of the Study

The purpose of this study was to assess the use of a home component in combination with the school component to increase skills in the following skill categories in a ten year old with autism: attending skills; imitation skills; receptive language skills; expressive language skills; pre-academic skills; social skills; and self-help skills.

Participant and Treatment Agents

The participant in this study was a 10 year old, 5th grade, African American, male. He had a diagnosis of autism. He received his diagnosis at age 6. Prior to this study he was nearly nonverbal. The treatment agents in this study included the child's parents, special education teacher, teacher's assistant, and the trainer.

Setting

The research took place in a rural southeastern town, in the child's home and special education classroom.

Procedures

The child's program was developed by the trainer by assessing the participant's current level of functioning; establishing goals; and developing an activity/skill list for reaching goals. Instructional objects were determined using the curriculum guide provided by Taylor and McDonough (1996). Observational recording sheets were used to measure performance on given objectives from the curriculum.

Discrete Trial Training

Discrete trial training (DTT) was used as a technique to help the participant gain skills. DTT is a behavior intervention paradigm consisting of systematic discrimination training that involves consistent one to one, repetitive practice. A significant amount of research supports the use of discrete trial training with individuals with autism in a variety of settings. DTT is particularly useful for individuals with autism for the following reasons: DTT attempts to build motivation by rewarding performance of desired behavior and completion of tasks with tangible or external reinforcement, even with prompting; stimuli presented in discrete trial training are clear and relatively consistent. The child is given rewards only for behaviors in response to those stimuli; DTT teaches skills and behaviors explicitly (cause-effect learning); The instructions given in discrete trial training are simple, concrete, and clearly provide only the most important information that the child needs to follow the prompt; DTT can be designed to teach social cognition skills (Lovass, 1987). The steps of DTT in this study were as follows: trainer identifies the task to be taught; trainer presents a discriminative stimulus to the child (i.e., "Point to dog"); after presenting the discriminative stimulus the trainer presents a prompt (i.e., Taking the child's hand and finger and guiding them to point to the dog); the trainer then provides the child with a contingent, immediate consequence. For example, if the child points to the dog the consequence is praise. The trainer provides a brief three to five second interval between trials. This process is defined as a trial or "single teaching unit" (Lovass, 1981).

Results

DTT was used on various skills across the curriculum guide (i.e., Beginning Curriculum Guide, Intermediate Curriculum Guide, and Advanced Curriculum Guide). On the Beginning Curriculum Guide the following skills were assessed; attending, imitation, receptive language, expressive language, and self-help skills. The percentage shifts for skills acquired on the Beginning Curriculum Guide are as follows; attending 100%, imitation 100%, receptive language 5%, expressive language 50%, and self-help skills 29% (See Appendix A, Table 1 and Figure 1). On the Intermediate Curriculum Guide the following skills were assessed; attending, imitation, receptive language, expressive language, self-help skills, and pre-academic skills. The percentage shifts for skills acquired on the Intermediate Curriculum Guide are as follows; attending 75%, imitation 33%, receptive language 26%, expressive language 0%, self-help skills

50%, and pre-academic skills 0% (See Appendix B, Table 1 and Figure 1) . On the Advanced Curriculum Guide the following skills were assessed; attending, imitation, receptive language, and self-help skills. The percentage shifts for skills acquired on the Advanced Curriculum Guide were as follows; attending 0%, imitation 0%, receptive language 0%, and self-help skills 75% (See Appendix C, Table 1 and Figure 1). Overall, significant gains were made across the curriculum guides.

Discussion

There were significant gains across the curriculum guides in all areas except receptive language. The results of this study revealed that parents in rural settings can be effective treatment agents when working with school personnel using DTT as a means of helping a child with autism acquire skills from the curriculum guide.

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Appendix A

Table 1

Beginning Curriculum Guide Skills; Pre and Post Intervention Summary

Skill Category	Number of Skills in Category	Percentage of Skills Pre-intervention	Percentage of Skills Post-intervention
Shift			
Attending 100%	4	0%	100%
Imitation 100%	4	0%	100%
Receptive Language 5%	12	8%	13%
Expressive Language 50%	14	0%	50%
Self Help 29%	7	71%	100%

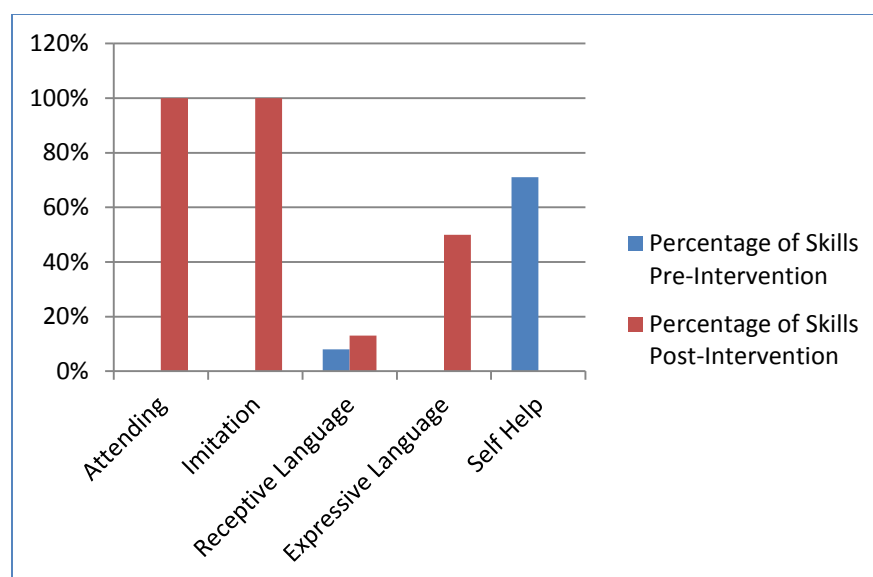


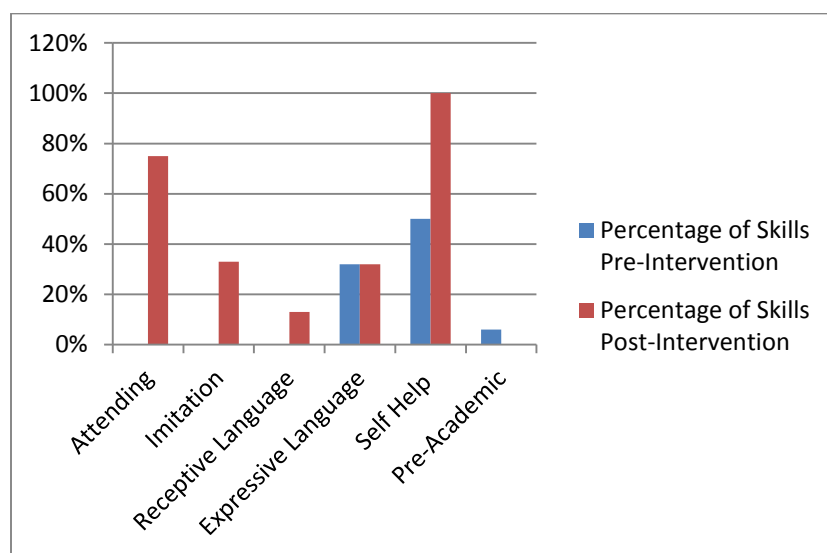
Figure 1. Percentage of skills gained in the Beginning Curriculum

Appendix B

Table 1

Intermediate Curriculum Guide Skills; Pre and Post Intervention Summary

Skill Category Percentage Shift	Number of Skills in Category	Percentage of Skills Pre-intervention	Percentage of Skills Post-intervention
Attending 75%	4	0%	75%
Imitation 33%	6	0%	33%
Receptive Language 26%	19	0%	13%
Expressive Language 0%	31	32%	32%
Self Help 50%	8	50%	100%
Pre-Academic 0%	15	6%	6%

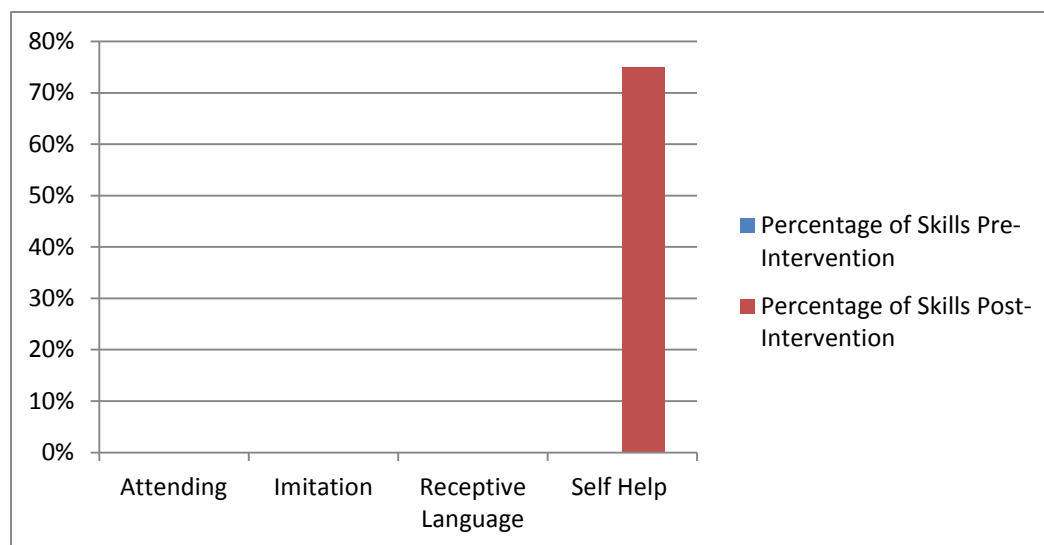
*Figure 1. Percentage of skills gained in the Intermediate Curriculum*

Appendix C

Table 1

Advanced Curriculum Guide Skills; Pre and Post Intervention Summary

Skill Category Percentage Shift	Number of Skills in Category	Percentage of Skills Pre-Intervention	Percentage of Skills Post-Intervention
Attending 0%	2	0%	0%
Imitation 0%	3	0%	0%
Receptive Language 0%	12	0%	0%
Self Help 75%	4	0%	75%

*Figure 1. Percentage of skills gained in the Advanced Curriculum*

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EFFECT OF DEMOGRAPHIC FACTORS ON EMPOWERMENT ATTRIBUTIONS OF PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS

Autism, Parenting and Empowerment

According to estimates from the Center for Disease Control's (CDC) Autism and Developmental Disabilities Monitoring (ADDM) Network, 1 out of every 68 children in the U.S. are being diagnosed with an autism spectrum disorder (ASD; CDC, 2014). The disorder has an impact on the individual, the family, and society. The Autism Society of America (ASA) has identified factors that play a role in the parenting stress of raising a child with ASD: 1) deficits and behaviors of ASD; 2) reactions from society and feelings of isolation; 3) concerns over future care giving; 4) finances; and 5) feelings of grief (ASA, 2013). Empowering parents will help them gain resources and information, have their voices heard, advocate for their children, and take action for better outcomes. Empowerment is defined as a process where people are provided opportunities and support to help gain control over their own lives and take action to get what they need (Akey, Marquis, & Ross, 2000).

For the purpose of this study, the focus was on empowerment as a family-centered behavior, an empowerment process that is applicable to understanding relationships between demographic factors and parents of children with ASD. Turnbull and Turnbull (2001) recommend that empowerment should be the ultimate goal of support services for parents of children with disabilities because empowered parents are able to support their child and empowerment encourages more positive outcomes. Dempsey, Foreman, Sharma, Khanna, and Arora (2001) describe empowerment outcomes as the behaviors, attitudes and knowledge related to the parental perceptions of control and confidence in raising a child. That sense of control may be positively related to the judgments parents make about their capabilities when they have access to desired supports and resources (Trivette & Dunst, 2004). Dempsey and colleagues (2001) found when families were part of a positive family-professional relationship there was a significant increase in empowerment regardless of the personal or socio-economic background of the participants.

The demographics of the participants in support groups for families of children with ASD plays an important role in the way that professionals provide support to families. Thomas, Ellis, McLaurin, Daniels, and Morissey (2007) identified family characteristics associated with the use of ASD services. Access to care was limited for low-income families, minorities, families living in rural communities, and those seeking more non-traditional treatments and care. To date, little research has focused on the influence of ethnicity on parent support program participation (McCurdy, Gannon, & Daro, 2003). Akey, Marquis, and Ross (2000) note that empowerment can vary across demographic groups so it is important that these factors are taken into consideration in research studies.

Study

The purpose of this study was to investigate the effect of demographic factors on empowerment attributions of parents of children with Autism Spectrum Disorder (ASD). Data were collected to determine differences between demographic factors of participants and self-reported empowerment attributions.

The study focused on the empowerment of parents of children with ASD and furthermore provides a better understanding than currently exists of the understudied influence of demographic factors on the empowerment of parents of children with ASD. Given that the prevalence of ASD is on the rise, the outcomes of this study potentially have significant implications for both parents of children with ASD and professionals who work to provide support to those parents. The findings of this study may be informative to the design of support programs, policies, and practices that seek to encourage parent empowerment. Because there are only a few studies on the relationship between demographic factors and parent empowerment attributes specific to parents of children with ASD, this study explicitly focused on this understudied area.

Research that documents the value of empowerment for parents of children with ASD is important to support initiatives that are already in place in some locations. This study searched for positive outcomes of empowerment and strived to understand the processes that assist in creating or deterring such outcomes.

A quantitative research design was employed in this study. Parents of children with ASD completed the 32-item Psychological Empowerment Scale (PES), which included a demographic questionnaire. Analyses were performed to measure the effects of specified demographic factors on parents' self-reported responses on the three dimensions of the Psychological Empowerment Scale (PES), namely attitude, formal participatory behaviors, informal participatory behaviors and skills and knowledge (Zimmerman, 1995). Demographic factors included marital status, parent gender, parent education level and perceived severity of child's ASD.

Results

The findings of this study suggest that there were some relationships between demographic factors and parent empowerment attributes for parents of children with ASD. Parents who were married did not report a significant difference in perceived empowerment based on their own formal or informal education or support participatory behaviors than parents who were not married or parents who reported being in a partnership. Gender played a more significant role in the empowerment outcomes for parents of children with ASD. Mothers reported higher levels of empowerment than fathers in regard to informal participatory behaviors regarding parenting a child with ASD. Parents who had attended college reported higher levels of empowerment in regard to the empowerment attribute of skills and knowledge. Parents of children with ASD who participated in this study did not indicate that the severity of their child's ASD had an effect on their empowerment attribute of attitude. In addition to demographic differences, results indicated that there was a strong, positive correlation between formal

participatory behavior and skills and knowledge and informal participatory behavior and skills and knowledge for parents of children with ASD.

Implications

The outcomes from this study begin to define parents of children with ASD as a unique, diverse subgroup of parents of children with disabilities who require an individualized approach to education and support. Regardless, the ultimate goal for service providers who serve families of children with ASD should be the contribution of factors which ultimately lead to the overall empowerment of the parents.

Given these results, parent support strategies should focus on creating or strengthening these aspects of demographic factors and parent empowerment. Moreover, these findings seem to suggest that professionals should play a major role in removing demographic barriers and inequities in supports for empowering parents. To achieve this, professionals will need to create parent empowerment programs that are specific to the diverse needs of the demographic population served. Furthermore, professionals must utilize creative and innovative nontraditional approaches to help parents develop empowerment attributes.

At the time of this study, limited research was available on the empowerment of parents of children with ASD. In particular, because this research is being conducted with parents of children with ASD from different demographic groups, more studies are needed to replicate and extend the findings. Very limited research was found that investigated the role of demographics in the empowerment of parents of children with ASD. Future research might be conducted with more diverse samples. The participants in this study did not represent a great deal of demographic diversity and the sample size was small. However, the participants do reflect the documented demographic make-up of the local parent population seeking services for children with ASD. Future studies should seek ways to include parents from diverse demographic backgrounds.

This study has begun to provide important information on the interaction effects of demographics on parent empowerment and the benefits of parent education and support for parents of children with ASD. Outcomes of the study can be used to develop practice, programs, and policy in regard to education and support opportunities for parents of children with ASD from a more individualized, diverse or culturally sensitive perspective.

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TEACHLIVE: USING VIRTUAL AVATARS WITH AUTISM SPECTRUM DISORDER TO PREPARE PRE-SERVICE AND IN-SERVICE TEACHERS

Significance

Currently, pre-service teachers are not adequately prepared to teach students with autism spectrum disorders (ASD). Evidence shows that four out of ten special education teachers leave their positions by their fifth year due to a lack of professional development and teacher preparedness in the field (The Commission on the Conditions for Special Education Teaching and Learning, 2000; Emery & Vandenberg, 2010). Due to the extensive scope of their preparation to work with a wide range of students, some special education teachers never have the ability to practice with students with ASD, especially if they are in a rural area (Busby, Ingram, Bowron, Oliver, & Lyons, 2012). In addition, the percentage of students with ASD being included in general education classrooms with teachers with no preparation in working with this population is on the rise.

A potential solution to address this problem is TeachLivE™ (Figure 1). TeachLivE™ is a mixed-reality (i.e., a combination of real world and virtual reality simulation), avatar-based simulation environment to prepare teacher candidates or improve the effectiveness of in-service teachers (Dieker, Rodriguez, Lignugaris/Kraft, Hynes, & Hughes, 2014). TeachLivE™ presents an auxiliary support to teacher preparation and professional development. Research has shown that four 10-minute sessions in the TeachLivE™ lab can change one teacher behavior and that behavior change transfers back to the classroom (Straub, Dieker, Hynes & Hughes, 2014). It is also important to note, in simulation, 10 minutes in a simulator is equivalent to 60 minutes in the real world (Dieker et al., 2014).

Autism spectrum disorder is a disability defined as persistent deficits in social communication and social interaction across multiple contexts; restricted, repetitive patterns of behavior, interests, or activities that are presented in the early developmental period and cause clinically significant impairment in social, occupational, or other important areas. These disturbances are not explained by intellectual disability (intellectual developmental disorder) or global developmental delay (American Psychiatric Association, 2013, p.50-51).

The work in TeachLivE™ is based upon the following assumption. Pre-service and in-service teachers will benefit from the use of virtual avatars with ASD because of repeated experiences with the students in an environment that maximizes time efficiency.



Figure 1. Participant in TeachLivE™

What is TeachLivE™?

TeachLivE™ is a mixed-reality classroom composed of five 3D virtual students, also known as avatars who respond in real time to teachers. The avatars are cognitively and behaviorally modeled after Long, an adolescent pediatrician, who categorized adolescent personalities (Dieker, Hynes, Hughes, & Smith, 2008). Therefore, the avatars portray personalities that have a combination of passive or aggressive and independent or dependent traits (See Figure 2).

TeachLivE™ currently has two avatars with ASD a) Andre, a middle school non-verbal student and b) Martin, a high school avatar with limited language and moderate academic skills. Andre is used with pre-service teachers to provide opportunities to perform and practice evidence-based skills such as Discrete Trial Training (DTT), yet his responses are limited (Vince Garland, Vasquez, & Pearl, 2012). Martin is currently being used with in-service teachers researching wait time.

TeachLivE™ is a fully immersive simulation. Participants are able to walk about the classroom and gain proximity with each student displayed on the screen. Within about 10 seconds, participants experience what is known as a “suspension of disbelief”. For the purpose of this project, suspension of disbelief is defined as “the phenomenon in which a participant is able to overlook and even forget the fact that the environment is not natural, but constructed and contrived, in order to enhance engagement, presence, and belief of the experience” (Hayes, Hardin, & Hughes, 2013, p.144).

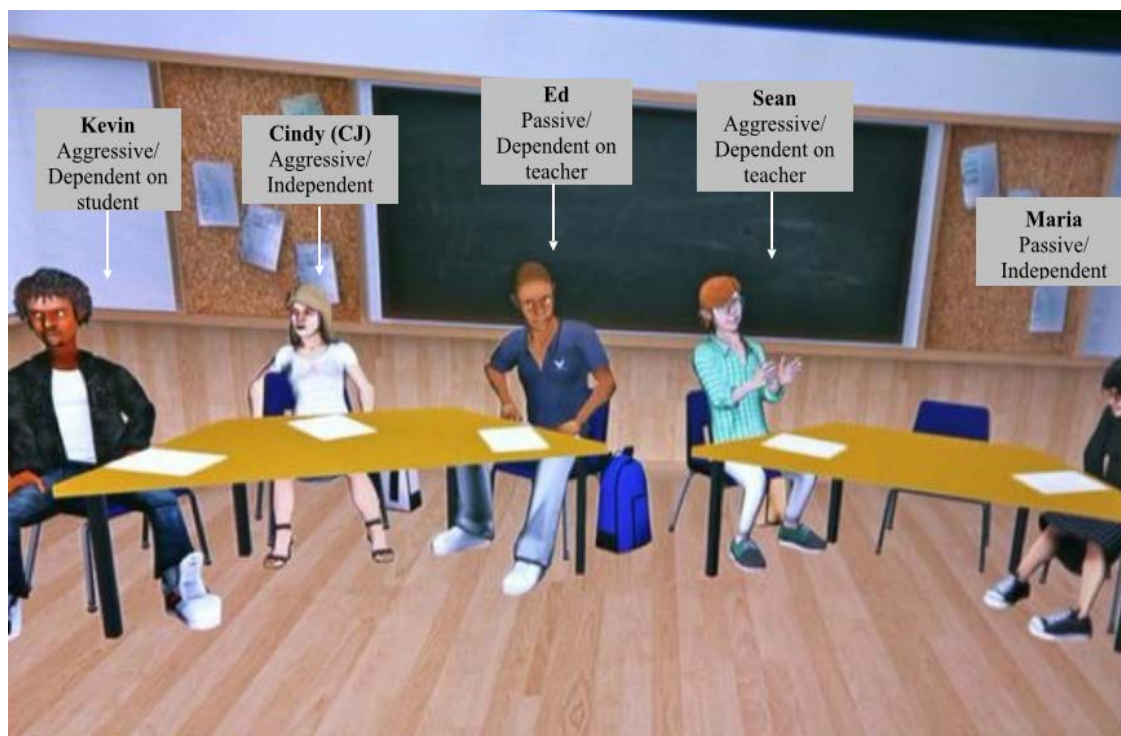


Figure 2. High School Avatar personality

TeachLive™ allows for individualized learning. Participants are able to set goals for themselves and even bring in individualized lessons to practice in the system. Participants can pause the classroom and resume at any time. Furthermore, participants are able to repeat their sessions as part of virtual rehearsal as seen at https://www.youtube.com/watch?v=XUJm5ESzT_k&feature=youtu.be.

In order for immersion and individualized learning to occur, the virtual students respond verbally and physically in real time with the help of an interactor. An interactor is a person “trained in acting, improvisation, and human psychology” (Dieker et al., 2008, pg. 11). Interactors control the voice and movements of all the virtual students in real time. The interactors are vital to an immersive and individualized learning experience.

Having a safe practice environment with students readily available is an important aspect of TeachLive™. Instead of pre-service teachers practicing on real students for their first attempt, they are able to use the student avatars for initial practice. In addition, teachers can have access to students regardless of their physical location, reducing the amount of travel time to gain a meaningful experience.

TeachLive™ provides observation and feedback using an Action Review Cycle (ARC). This model has been used by the military for over 30 years (Holman, Devane, and Cady, 2007). Research on ARC has focused on “an interactive discussion . . . [to] decide what happened, why it happened, and how to improve or sustain collective performance in future exercises” (Institute of Defense Analyses, 1999). Using this model, teachers are able to reflect on what just occurred

in the system, make suggestions and/or collaborate on how to do better, and repeat the session with those changes.

ReflectLivE is another way to provide immediate feedback. ReflectLivE, created at UCF, is used in conjunction with TeachLivE™. Participants can be recorded and specific behaviors of choice can be tagged. Charts and graphs are immediately created to be shared with the participant. The participant can be coached and set new goals for their next session.

Why use avatars with ASD?

Autism is characterized by the DSM-V as individuals having deficits in social-emotional reciprocity, nonverbal communication, developing and maintaining appropriate relationships, restricted or repetitive patterns of behaviors, fixated interests that are abnormal in intensity, and hyper reactivity to sensory input or unusual interest in sensory aspects of the environment. The DSM-V (2013) also provides information to decipher the severity of the support needed for the individual by 3 levels; Level 1 is requiring support, Level 2 is requiring substantial support, and level 3 is requiring very substantial support (American Psychiatric Association, 2013).

According to the U.S. Department of Education (2011), 57% of students with ASD spend over 40% of their day in general education classes. The 2011-2012 schools and staffing survey report that there are 3,385,200 teachers in public schools (U.S. Department of Education, 2011-2012). General educators have a significantly lower difference in knowledge of students with ASD than special educators (Segall & Campbell, 2012). However, 96% of general education teachers currently teach or have taught students with disabilities (Carlson et al., 2002). General educators lack the experience and knowledge to teach students with ASD (NRC, 2001). Having experiences with students with ASD can help teachers gain the knowledge and skills necessary for a successful teaching experience.

With avatars with ASD, teachers will have easy access to students in order to practice evidence-based practices and behavior management skills. Since individuals with ASD often face challenges with change of settings or activities, this environment will prevent teachers from disrupting a students' day while gaining experience. A teacher will be able to work with real students after multiple experiences with the avatars, making the teachers better prepared for this population. In addition, all teachers, regardless of location are able to access students with ASD.

Creating Martin

Martin is a high school male avatar and is included with the high school class in TeachLivE™. A focus group at the 2nd Annual National TeachLivE™ Conference gave input on what they would want to see in an avatar with ASD. Martin is based on a real individual with ASD named CJ. CJ is a 19-year-old male that attends a local high school. He has experienced TeachLivE™ as a participant, as seen at <https://www.youtube.com/watch?v=QnTYQw8nCW8>. Additional behaviors have been added in order to give more variety to the experience.

A back story and behaviors for Martin were created to ensure a historical profile so that the character maintains consistent behaviors during the simulation. Behaviors for Martin have been

identified and will be implemented based on system capabilities. See Figure 3 for a description of Martin's behaviors based on the DSM-V.

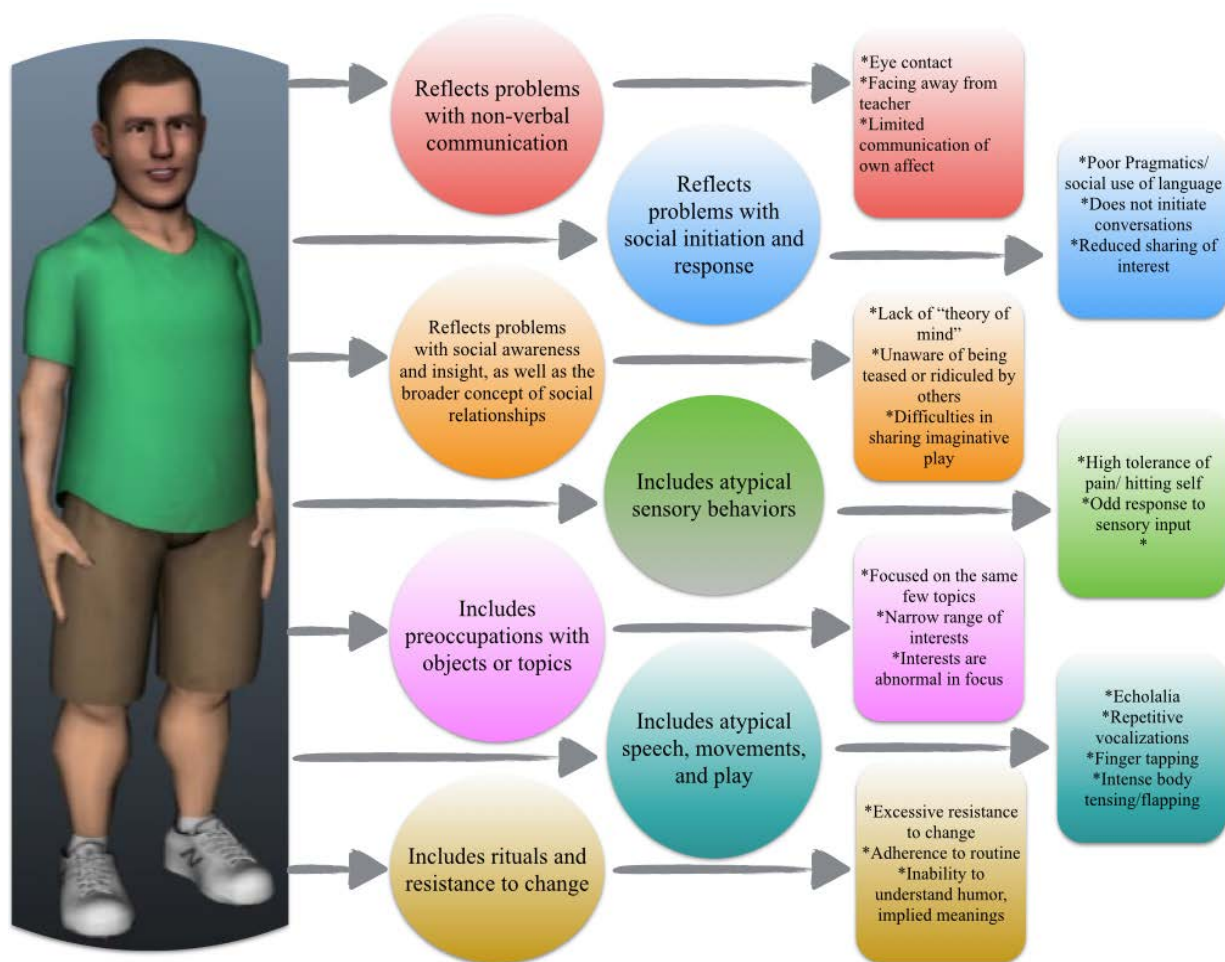


Figure 3. Martin's behavior based on DSM-V

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CREATING ONLINE COURSES TO ACCOMMODATE COLLEGE STUDENTS WITH DISABILITIES

Introduction

Since more students have the opportunity to attend colleges and universities from a distance due to broader access and technological advances (Li & Irby, 2008), facilitators are facing the challenge of providing more accommodations and modifications to nontraditional students. Limited attention has been placed on the provision of these special services that have been traditionally provided by special educators. Although special educators have been trained to make these adjustments on an individual basis on the elementary and secondary level, this has not been the traditional role of the university professor. Rural educators have sometimes provided these services due to the ability to teach small groups of students and to focus on individual needs. With the newer, mass course enrollment procedures, providing accommodations to all students has become a significant challenge that needs to be addressed.

Theoretical Base

Although special education services have been addressed in public schools since 1975 for students with disabilities, limited attention has been given to the provision of these services to post-secondary students (Herbert, 2014; Ricardo, Alegre-de-la-Rosa, & López-Aguilar, 2012). Due to privacy issues, disability offices cannot provide researchers with much of the data that pertains to the provision of special services to students. Even with the provision of services under the Americans with Disabilities Act (ADA), usually only extended time is usually given to students through the college or university Office of Disability Services. This accommodation, often utilized to assist students with access to an education, is insufficient to serve the needs of a diverse population (Lewandowski, Cohen, & Lovett, 2012). Access to content through the use of modern methods of technology can have a positive impact on academic achievement, leading to more success for students with disabilities due to the multimodal nature of online courses (Englert, Zhao, Collings, & Romig, 2005; Hecker, Burns, Elkind, Elkind, & Katz, 2002). In public schools, students also receive instructional modifications to assignments and specific programs of study as needed. College students may request, for example, a reduction of written assignments, oral lessons, assistance for loss or reduced vision or hearing, use of technological devices, oral exams, one-to-one instruction, very small group instruction, social skills training, and technical training. These services, provided in elementary, middle, and high school, are often denied at the post-secondary level. Additionally, instructors or facilitators are not prepared to redesign courses to address these unique needs. Students with disabilities may benefit from multimedia rich courses (Buckley & Smith, 2007) and modern teaching methodologies that address different learning styles (Aragon, Johnson, & Shaik, 2002). Educators with specific training can appropriately address the needs of more students in post-secondary online courses.

Ideas of specific interest utilized by Beacon College in Florida and the University of Arizona were researched for use in the study. The University of Arizona offers a Strategic Alternative Learning Techniques (SALT) Center, use of learning specialists, and design of individual development plans (IDPs) to promote the achievement of individuals with learning and attention challenges. Beacon College in Florida assigns life coaches to students. The college also offers small class sizes that cater to individual learning styles and unique needs as well as providing personalized attention, developmental courses, academic mentoring, use of advanced technology, and assignment to a life coach. The life coaches provide students with weekly support and help them set goals, brainstorm and plan, and reflect on progress.

Research Method

Two courses were identified at two universities for the purpose of research on provision of services to students with disabilities. First, procedures were established on how to address student access to an education as defined by the Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act, and the Individuals with Disabilities Education Improvement Act (IDEA). To be protected under the Americans with Disabilities Act a person must "have a physical or mental impairment that limits major life activities; have a documented history of impairment; or be perceived by others as having an impairment" (ADA, 1990, §12101 *et. seq.*). Major life activities includes such major bodily functions as immune system functions, normal cell growth, digestive, bowel, bladder, neurological, brain, respiratory, circulatory, endocrine, and reproductive functions. Of significance is the fact that the ADA definition of a disability does include mental as well as physical impairments. Also, sometimes colleges or universities do not abide by the "perceived by others" component of Act. In 2008 new amendments to the Americans with Disabilities Act (ADAAA) clarified who should be covered and revised the definition of a disability to encompass impairments that substantially limit a major life activity. The regulations in the Act are enforced by the United States Department of Labor and the U.S. Equal Employment Opportunity Commission. Employers are required to meet certain regulations including having knowledge and understanding of who is covered by the law. If the student discloses that he or she has been served in elementary, middle, or high school with an individualized education program (IEP), this can also be utilized to document the existence of a disability. All colleges and universities receiving federal funding are required by law to provide resources and accommodations designed to assist students with a disability. The school is not required to change the content of the course, nor is it obligated to make any adjustments that would change the fundamental nature of the program or service or result in significant spending or use of resources. Many schools comply only with these minimum requirements established by law, limiting the disability services offered (Adkins, n.d.). Although students need to ask if a college or university employs licensed specialists in the field of special education or whether there is a specific program to educate faculty members, none of the colleges or universities in this study had such employees. Employees had advanced degrees, but the training was not specific to the field of special education.

For this study, multisensory needs, multimedia enhancements, and instructional methods were designed for use in the online courses to properly support students with disabilities. The procedures included an oral exam and writing sample to determine the intensity of support needed by each student. Since modification of the courses was not granted at any of the colleges

or universities, accommodations and modifications were designed to utilize with students. Suggestions were also developed on how to modify some courses to better address the needs of students with specific challenges. A sample was developed to explain how to modify discussion board activities, written assignments, and projects. Directions were simplified and screen presentations were limited with links to additional information. The number of questions was reduced as well as the number of required submissions per lesson. Individual accommodations and modifications included providing audio clips for lectures, live virtual chats for discussions, reduction of the number of submissions or papers, allowing multiple tries for quizzes, and oral assessments for final exams.

An analysis form (Appendix A) was designed to be utilized for evaluation and instructor assignment. The form was designed to address students needing minimal accommodations, students needing special assistance, or students needing a special instructor assignment. Minimal assignments would involve regular university assignment of a student to an instructor with only a specific plan. Students needing special assistance would be assigned to a university instructor, but a special instructor would help monitor progress. A learning specialist or specially trained educator would be assigned to any student needing extra assistance and specific instruction. Continuing services would involve changes to accommodations and modifications, changes to instructor assignment, or a move to monitoring status.

Research Status

The Office of Disability Services at each college or university was contacted for information on support provided to students with disabilities. One compliance manager indicated that due to university policy no educational requirements could be altered to accommodate students. Help was provided through writing programs and weekly conferences with students. Eight week courses could be extended to twelve or sixteen weeks as needed, but no other accommodations or modifications were allowed. Another compliance officer was reluctant to share information, but she did indicate that some accommodations were allowed. At one college information was easy to attain, but no specific person was assigned to assist students. The services provided through the Accessibility Resource Center at another university revealed a program with good student evaluation and service delivery.

Of concern was the lack of collaboration between the researchers and the Office of Disability Services at each college or university. Interagency collaboration takes place when students transition from high school to college or university settings, but a lack of trust may limit that interaction once the student transitions to the college campus. Work is needed to build trust with the disability office personnel and college or university faculty teaching the courses of study. Since the Americans with Disabilities Act (1990) was designed to provide a legal status for educational services to the students, support may need to be obtained at a higher administrative level to ensure that students have received the appropriate accommodations and modifications. This could be accomplished by hiring a designated special educator to work with the compliance monitor.

One way to provide the needed accommodations and modifications by college or university professors involves the modification of courses and the provision of services as allowed. Course modifications for this study were completed for four courses, including lectures, discussions, written assignments, quizzes, and field experiences. Since permission was not

provided to modify courses from the colleges and universities contacted, accommodations and modifications were implemented by the instructors for the students in the designated courses as a pilot study. The study was conducted for a semester with four courses with enrollment limited, if permitted, to 15 students per course. Results were analyzed and tabulated utilizing a data collection form.

A formal questionnaire was not utilized, but student reactions and responses were documented (see Appendix A). Although the suggestion to hire learning specialists was not accepted by any college or university in the study, the idea is under consideration at one college since teachers or facilitators would be able to provide more assistance to specific students due to a reduced load assignment. Most of the students reported that they were grateful for the simplification of course design and lesson instructions. Audio clips were added to some assignments when appropriate, live virtual chats were included, and paper submissions were reduced or resubmissions were required. Unfortunately, permission was not granted to reduce field experiences, to allow multiple tries for quizzes, or to conduct oral exams.

Further research plans include the assessment of any student needing special assistance at two to four colleges or universities to determine whether the interventions lead to student success and improved course completion. Course completion would be of special interest to colleges or universities trying to increase student enrollment. Study results are projected for the 2016 school calendar, with analysis completed within six months.

Recommendations

Since the data collection is not complete, the following preliminary recommendations were developed to provide information to colleges and universities preparing to modify courses for students with special needs:

1. Simplify instructions by redesigning courses.
2. Reduce the number of students assigned to a teacher or facilitator.
3. Hire a learning specialist to help with the screening, monitoring, or teaching of some students.
4. Provide audio clips as an option with lectures.
5. Facilitate discussions using live virtual chats or Skype meetings.
6. Reduce the number of field experiences.
7. Limit the number of paper submissions.
8. Allow multiple tries for quizzes.
10. Conduct oral assessments for final exams.

Further Research

More research is needed on how to establish better communication and collaboration with the Office of Disability Services at each college or university. This must be supported by the administrative leadership to ensure that student evaluation is conducted and that accommodations or modifications are properly provided. Also, further research is needed to determine whether the recommended accommodations and modifications will lead to student success and completion of programs of study. Of specific concern is the determination of whether a student has a history of a disability in high school that requires specific attention upon

entry into college or university programs. The availability of specially trained personnel to evaluate and monitor students with special needs and provide support to university teachers and facilitators must be documented. Institutional assignment of students, institutional assignment with monitoring, or assignment to a special educator should occur. Also, changes to accommodations, modifications, and instructional approaches must be provided to individual students on a continuing basis. Changes to instructor assignment must be made as needed when reevaluation occurs, or successful students should be moved to monitoring status. Contacting other colleges to research creative ideas such as the international scope at Landmark College in Vermont, the life coaches at Beacon College in Florida, or the learning specialists at the University of Arizona would provide more insight into how to design unique programs of study (Wells, 2010).

Appendix A

Form A: Assessment and Intervention Plan for College Students

Student Name: _____

Date of Evaluation: _____

Evaluator: _____

Writing Sample Results:

_____ **Word Usage**

_____ **Grammar**

_____ **Sentence Structure**

_____ **APA Style**

_____ **Scholarly Writing**

Oral Conversation Information:

Specific Disability Needs (if any):

Support Intensity:

_____ **Intermittent**

_____ **Limited**

_____ **Extensive**

Accommodations and Modifications Recommended:

1.

2.

3.

4.

Multisensory Needs:

Multimedia Enhancements:

Instructional Approach:

Conclusions:

Instructor Assignment: _____

Appendix B**Form B: Documentation Information from Students**

College or University: _____

Date: _____

Directions: P= Positive; N = Negative; Numeral = number of responses

Example: 3P or 3N or 2P/1N

____/____ number of positive or negative responses to course modification

____/____ number of positive or negative responses to live virtual chat or Skype options

____/____ number of positive responses to modification of paper submissions

____/____ number of positive responses to multiple tries with quizzes

____/____ number of positive responses to oral exams

____/____ number of positive responses to more teacher/facilitator assistance

____/____ number of positive responses to limited student numbers in a course

Total Positive Responses: _____

Total Negative Responses: _____

Additional Comments: _____

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Resources

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RETENTION OF UNDERGRADUATE STUDENTS: FACULTY PRACTICES THAT ARE MOST SUPPORTIVE

In today's competitive world among Institutions of Higher Education in four-year colleges and universities, recruiting and retaining students is critical. Students enrolled in higher education are individuals who have chosen to dedicate their lives to improvement and learning. As undergraduates, students are focusing on their current life as well as future opportunities. It is also a time for growing socially and academically as students learn to become more independent and become knowledgeable about their areas of study. However, being a university student can be a stressful time and the drop-out rate of students is quite significant. Thus, one of the major issues in colleges and universities today is retaining students until they complete their program of study. Clearly, four-year universities struggle with the retention of students and the need to address graduation rates.

Decrease in Number of Degrees Conferred

The topic of student retention and graduation is particularly relevant due to recent reports from the National Center for Educational Statistics (2013) which suggest a drop in the number of degrees granted by universities across the nation. In fact, the most recent data indicates that 59% of the students enrolled in four-year public and private colleges or universities actually complete their program of study and graduate. With a decrease in program completers, and shortages of highly qualified teachers in both rural and urban schools, our educational system is in jeopardy. Teacher shortages continue to plague the U.S. and universities have to work harder and smarter to attract and maintain students in their personnel preparation programs.

Relatedly, in higher education, mounting financial pressures through lack of political support and loss of student tuition, commitment to recruitment and maintenance of a diverse student population, and a declining number of undergraduate students contribute to the intensified focus on student retention (Moller-Wong, Shelley, & Ebbers, 1999). Students who are persistent in their college/university program of study translate directly into tuition dollars which, subsequently, pay for salaries, supplies and operating expenses, and professional development for administrators, faculty and other staff as well as the maintenance of buildings and landscaping on campus. A known fact is that it is more expensive to recruit a new student than it is to keep a current one. One of the critical measures of institutional effectiveness is the ability to retain students once they begin their program of study. Student retention rates are a widespread measure upon which institutional effectiveness is judged statewide and nationally.

Student Retention

As a college degree is becoming increasingly more important for young adults to be competitive in the professional job market, high school graduates are pursuing a bachelor's degree from Institutions of Higher Education. In addition, students have more non-traditional options in today's world than ever before. For example, online bachelor's degree programs advertise prolifically on television as well as in print media and are competing with the more traditional, on-campus university programs. Other options that are currently available to potential students are organizations such as Teach for America which provide a fast-track program and are emerging all across the U.S.

When a student is enrolled as an undergraduate, he or she is more likely to function best and reach graduation when university systems and faculty are responsive to students' needs and assist students in navigating higher education coursework and processes. In addition, some newly enrolled students are first-generation university students in their family and may have a variety of support needs in order to successfully move through their program of study. An in-depth view of the positive influences that university systems, support staff, and faculty members can have on undergraduate students is important to investigate. The supports provided to students can be highly influential in facilitating students' progress through coursework, their program of study, and graduation.

Most four-year Institutions of High Education have student retention plans, but all do not indicate that the efforts are of good or excellent quality (Noel-Levitz, 2011). In fact, in a survey with 196 four-year universities responding, less than half of the respondents from four-year private and public institutions reported that they had a current, written retention plan that they rated good or excellent. And less than half rated their campus wide committee for student retention good or excellent. Clearly, universities struggle with retaining students and need to address graduation rates. In 2007, the average retention rate among all U.S. four-year Institutions of Higher Education from the first year to the second year was approximately 69%. (Jamelske, 2009). While having a high quality plan in place can be instrumental in assisting students to remain in post-secondary education programs, the value of getting feedback from students cannot be underestimated.

Many institutions have established First Year Experience (FYE) programs which are an attempt to positively introduce students to university life. The results of these programs are mixed and many factors influence the outcomes for students. However, the primary goals seem to be increased student performance, persistence in students' education, and graduation by integrating students into the university community both academically and socially (Goodman & Pascarella, 2006; Pascarella & Terenzini, 2005).

Surveys were conducted among FYE instructors and FYE students following the 2006 fall semester (Jamelske, 2009). Comments from the 559 students who volunteered to complete the survey were not overall positive. Fairly common student responses were "my FYE class did not significantly help me to 'connect' to the university" and "my mentor was not a valuable resource to me." Of course, there are limitations in using self-reported student responses to selected survey questions. However, the viewpoint of the students is one significant factor in determining the best way to retain and graduate students.

Interviews with Students

While gathering survey data from FYE instructors and students is one mechanism to evaluate retention, another way is to speak directly with the students and ask them what supports they find most helpful in assisting them to progress through their coursework and program of study. For this presentation, interviews were conducted and videoed with twenty-five full-time students from diverse cultural, racial, and linguistic backgrounds who were in various stages of their undergraduate degree program. In addition, students attended both public and private four-year institutions of higher education. Currently enrolled students were asked to respond to the following open-ended questions:

- *What are the main factors that help you to progress through your coursework and program of study?
- *What are some of the issues you face while taking coursework and progressing through your program of study?
- *What suggestions do you have that might help you to successfully complete coursework and progress through your program of study?
- *What could faculty and other staff do to help you with your coursework and progress through your program of study?

Summary of Results of Interviews

A summary of the results of the interviews indicated that, overall, students found that faculty made the biggest difference in the students' ability to progress through their coursework and program of study. When faculty were available and found time to work with students, the students reported positive feelings about their university and program. Faculty who acted disinterested or appeared annoyed by the needs of students served as barriers to their progress. Faculty who seemed to begrudge time spent meeting with students made the students feel unimportant.

Also, students highlighted the importance of the teaching techniques used by faculty. For example, when a faculty member created power points and read the information verbatim to the

students, the students were not impressed. Students spoke positively about presentations that were scholarly, but included other teaching techniques along with power points. For instance, faculty who utilized power points, videos, real-life examples, and discussions to teach concepts helped to facilitate students' ability to learn and understand the required information and made the classes more interesting, and thus, engaged the students more actively in their learning.

Other areas that made a difference to students were advisors who had direct knowledge about their program of study (rather than the "one stop shop" or enrollment centers that some universities utilize) and provided accurate information about coursework. The support staff in the dormitories (Resident Assistants) also helped students who needed someone to talk to about their coursework and personal issues. In addition, students who took advantage of the tutoring sessions outside of class found them to be helpful with homework assistance and gaining a clearer understanding of the information taught during classes.

All of the students who were interviewed valued their college/university education and were planning on completing their degree. For the enrollment and retention of students, the perspective of students is critical to the success of Institutions of Higher Education. Both administrators and faculty need to be aware of how they can make a difference in the maintenance and retention of students enrolled in their colleges and universities.

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WHAT'S NEXT FOR ME? A DECISION MAKING MODEL FOR SPECIAL EDUCATION STUDENTS' EMPLOYMENT AND CAREER PLANNING

The transition experience for individuals entering college or employment after high school is a process that can be equally exhilarating and daunting. However, for many students with disabilities, the process can be overwhelmingly discouraging based on several critical outcome statistics. According to Roessler, Hennessey, and Rumrill (2007), the number of students with disabilities enrolled in postsecondary education has doubled in the past 20 years, from a national average of 15% of high school students with disabilities to 32% enrollment rates. However, this increase in the number of students with disabilities does not equate to higher graduation rates. In fact, based on the 2014 National Center for Education Statistics, U.S. Department of Education, public high school graduates' rates for 2010-2012 show that students with disabilities have graduated numbers more than 20% below the national average (NCES, 2014, p. 4). For those who do go on to college, the college graduation rates for students with disabilities remain low with the majority not attaining graduation status after 8 years (Newman et al., 2011). Even when students with disabilities do graduate with a college degree, their employment rate is nearly half that of college graduates without disabilities (Bureau of Labor Statistics, 2012). In some categories of students with disabilities, the results are even more dismal beginning with marginal numbers of school supported job-placement or work experience opportunity, apprenticeship, or skills preparation (Lee & Carter, 2012). Individuals with disabilities, whether graduates or not, face considerable barriers when attempting to secure employment, including limited access to required training programs, understanding of the demands of highly competitive jobs/skill levels, and inadequate planning and exposure to work experience prior to leaving high school (Lindstrom, Khan, & Lindsey, 2013). Employer reticence based on lack of knowledge, potential costs of training, accommodations, and employee unity contributes to the challenging objective of achieving the ultimate goal of employment.

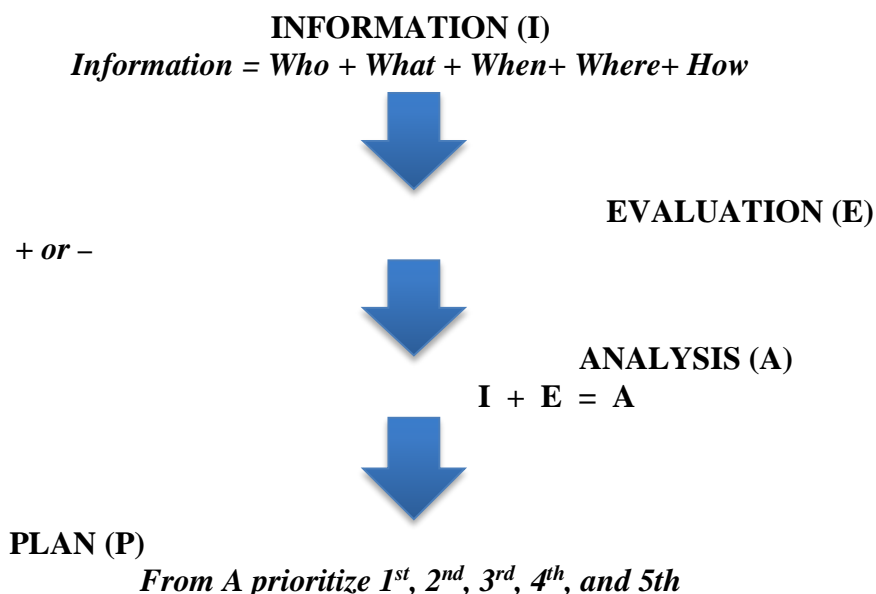
For the past 10 years or more, a focus on the connection between preK-12 education and the world of work for students with disabilities has been examined and explored in the research and literature as well as debated and enacted in legislative actions at the state and national levels. In 1994, the School to Work Opportunities Act was established as a means of optimizing student transfer of education into a career through guidance programs designed to assist students in scaffolding resources from the elementary through the secondary level (McWhirter, Crothers, & Rasheed, 2000). At the high school level, this is accomplished by fostering students' real-world experience, engagement in higher order and critical thinking skills, and identification of vocational goals. The School to Work (STW) system is supposed to incentivize students with the tools to become more successful in their decision-making process as they moved towards careers or postsecondary education. McWhirter et al. (2000) suggest that outcomes of the STW initiatives should more clearly define expectations and outcomes, improve student efficacy, and integrate successful levels of social and cognitive interventions to effectively promote career transition. Blending the elements of successful school to work transitions for students in special

education with the individualized challenges in schools, communities, families, and businesses in a community is the focus of this article. Integrating the current research with a fresh perspective, the use of economic decision making, may provide new opportunities and options for success with this special population.

A Model for Economic Decision-making

Whether it is labeled as such or not, the process of economic decision-making influences many of the decisions of our lives, ranging from the personal (individual or household decisions) to the public (government or business decisions). Incorporating economics as part of the rational analysis of the costs and benefits of a decision can be an integral part of either informal or formal decisions. Some economic principles inherent in this type of personal decision-making include the concept that people have to make tradeoffs in order to make decisions about the resources and options at hand and that making a decision means giving up the opportunity to do something else or have something else in its place. No matter which principles are used or which model of decision-making is used, economic decision-making involves a process of identifying problems or issues and then understanding the weighting of the costs and benefits of all elements of a decision as part of a rational process. Knowing how to apply economic decision-making to determine what the future holds for students with special needs can become a powerful, personal strategy.

The decision-making model below (IEAP) can be used individually or with small groups of students. As in all decision-making models, the first step involves identification of the question or problem to be addressed. In this case, the question is *What are my options for the future in terms of either post secondary education and/or employment?*



The first phase of the IEAP model is *Information*, including answering key questions that help organize and synthesize options and resources. Some possible questions related to these key elements of information might include the samples below.

Who: *Who am I? Who can I count on to advise me or assist me? Who needs to be part of my decisions? Who can help me assess myself? Who will be with me in the future? Who might hire me?*

What: *What are my strengths? What are my interests? What are my disabilities? What resources do I have? What resources do I need? What actions do I need to take to prepare for the future? What roles will the current people in my life play? What jobs can I do? What training do I need to compete for those jobs?*

When: *When should I expect to accomplish certain activities or achievements?*

Where: *Where will I live? Where can I get the resources I need? Where could I work? Where can I get the education and training I need?*

How: *How will I measure success? How will I know I made the right decision?*

In particular, two questions in this first step, the *what* and *where* questions, are usually paramount in this process. In his book about career decision-making, *Who's Your City? How the Creative Economy is Making Where to Live the Most Important Decision of Your Life*, Florida (2009) explains that to most people, many of life's decisions are mostly focused on what you want to do with your life and with whom you want to do it. But he argues that when you first answer the question of *where* you plan to live, you have a central point that influences all other decisions. In the case of people with disabilities, the question of where to live is of utmost importance on several levels, including the opportunities for support from community and family as well as options for employment and training. The decision about where to live also can be vastly different based on whether the location is urban or rural, familiar, or unfamiliar. Acknowledging the relative importance of the answers to these questions will be important in the next phase of the model.

Evaluation can be as simple as writing plus signs (+) indicating it is a good resource next to a response that supports reaching a goal or minus signs (-) pointing to a barrier that needs to be examined closely. Once a person responds to the questions in the *Information* stage, each of the responses can be simply evaluated with a plus or minus sign. Responses with positive evaluations can be organized together while those with negative evaluations can form another grouping. The finished product then might be a list of positively-rated responses to compare with a list of negatively-rated responses.

Analysis requires the highest level of discrimination and examination. Reviewing the responses to questions and the lists of positive and negative evaluations forms the basis of analysis. From these first two steps, what type of summary statements could be made? Are there clusters of positive responses that can be condensed into one main idea? Should some responses be weighted more heavily than others? What is the first impression one would have from reviewing the list of responses with evaluation signs? This analysis leads to the final development of a *Plan* as the items are prioritized in importance and significance. The draft of a *Plan* can then become a list of prioritized statements that are used to consider, discuss, and create a more detailed plan of action with a timeline for completion. The process described is an iterative one that does not end, even with a rudimentary plan. Options, situations, and resources constantly change requiring re-examination of the priorities and a review of each step in the decision-making process.

Of course the use of any model assumes that the individuals using it will apply rational thinking as a basis for both responding to questions in the *Information* stage as well as in assessing responses in the *Evaluation* stage. The use of models may encourage a more rational than intuitive response but underlying human attributes, as explained by career development theories, must be acknowledged and included in development, explanation, discussion, and implementation of any decision-making process.

A consideration of career development theories affecting transition decision-making

Several bodies of research underscore the behaviors of individuals engaged in transition decision-making including Bandura's (1986) social cognitive theory, with its emphasis on self-efficacy, and Super's (1957) career development theory that identifies developmental stages aligned with self-concept that affect career decision-making. Cognitive psychologists and counselors in several different studies and with varying interpretations have examined these two theorists and their works repeatedly. However, the basic tenets of these two theories form a reasonable psychological and cognitive foundation for short- and long-term planning processes related to transition decision-making for students with disabilities. Reviewing these theories and incorporating them as a basis supports the process of moving individuals from biased, intuition-based thinking to a more conscious and logical analysis.

Albert Bandura's social cognitive theory explains how belief in one's capabilities, based on accomplishments, modeling, mentoring, encouragement or discouragement, and emotional factors, defines self-efficacy. The implications of self-efficacy are seen in how a person perceives his or her ability to accomplish tasks and goals. Persons with lower self-efficacy may give up when a task becomes too difficult or may set up barriers to success that others do not see. In addition, higher self-efficacy can provide confidence (even to the point of over-confidence) to explore and tackle tasks and take advantage of opportunities and resources that those with lower self-efficacy may discard or avoid. Self-efficacy then becomes a major component in motivation, which is critical in encouraging students to complete the complex and difficult task of self-evaluation, learning about careers and career expectations, and actually implementing a plan for achievement (Bandura, 1997).

The broad nature of Super's theory underscores the basis of career development as a continuous, life-long process (Niles & Bowlsbey, 2012, Ochs & Roessler, 2004). While this theory defines developmental stages correlated to ages (birth to 15, 15-24, as examples), those ages can be overridden by the idea that self-concept changes over time as a result of experiences. With a delay in experiences for some students with cognitive, emotional, and behavioral disabilities this can influence their maturity levels and their progression through the stages. For example, the stage in many very young children's lives that can be categorized as *fantasy*, where they incorporate only their dreams and immature ideas about occupations that are not based on reality. This same phase may be characteristic of some students with disabilities who are young or even late adolescents. If along the developmental path, individuals fail to explore careers by reading, thinking and discussing levels of works within careers and reviewing the requirements for different careers, it is difficult to progress to a stage of realistic implementation. Reviewing the progression through the stages of development and identifying activities that students can engage in related to each developmental stage can be helpful in understanding responses and

ideas to decision-making questions related to career planning and provide guidance for thoughtfully exposing students to more realistic considerations.

In a study exploring how youth with learning disabilities employ self-efficacy beliefs that accompany their developmental stages, Ochs and Roessler (2004) determined that in fact, these predictors of career exploration intention apply to both students with and without learning disabilities. For parents, teachers, career counselors, and others working with students with disabilities, the opportunities to understand how to motivate and encourage realistic career exploration are relevant and necessary. Understanding the theories behind human behavior regarding career exploration, planning, and implementation should provide confidence in expending resources, including time in school, on these activities for students with disabilities.

Preparations for Success

The work of promoting and implementing career exploration and decision-making for students with disabilities is a critical area for examination. With increasing numbers of students with disabilities in public schools and the need to incorporate and accommodate them into the workforce for their own quality of life as well as the public good, this area of transition becomes even more important to all stakeholders. In many communities there are multiple resources that can assist with this work while in other areas, it may fall on a teacher or even a parent to initiate the process. Knowing the key elements to the process and having guidelines, including a workable decision-making model, can become important foundations of support.

Despite some of the difficult elements of this work, particularly in gathering accurate and relevant information in answering the questions in the first step of the model presented here, there is much to be gained in the implementation of a rational process. The decision-making model does not just end with a *Plan*. That plan can be evaluated and continuously adjusted based on individual or resource changes. The process is iterative and can be easily adapted to different individuals or student groups. Success in career exploration, planning, and implementation does not just involve following a model. The careful integration of meaningful career exploration and planning activities into both school and home life can have a profound effect on students and families in changing the outcomes related to life after high school for students with disabilities.

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