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Attitudes among Vietnamese Educators Towards Students with Disabilities and Their Implications Relative to Inclusive Practices: The Findings of a Preliminary Investigation

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Abstract

This article presents the findings of a short-term quantitative/qualitative study concerning the attitudes of Vietnamese educators towards individuals with disabilities and its possible implications relative to the development of inclusion and special education in Vietnam. The current conditions regarding the education of students with and without disabilities in Vietnam are compared with that of other South Asian countries as well as the United States.

The purpose of this study was to identify prevailing attitudes of both school teachers and college teacher educators towards students with disabilities. This was seen as a preliminary step in identifying their predisposition towards the practical implementation of inclusion, which is currently a key national initiative. The implications of this cursory investigation presents a challenge for researchers to find a way to bridge the gap between well-established traditions and best practices in special education in emerging post-modern industrialized countries like Vietnam.

Introduction

The teacher preparation programs as well as the educational system in Vietnam, represented nationally in the policies of the Ministry of Education and Training, are eager to assimilate and administer an adaptation of the U.S. model, especially as described in the Individual's with Disabilities Education Act (IDEA). Impediments to that adoption are represented in disparities in attitudes among educators and family members towards the inclusion of students with disabilities in public education. Nevertheless, despite these challenges, Vietnam is strategically and ideologically positioned to develop the most advanced special education system in South Asia for reasons that will be discussed later.

Attitudes in South Asia towards Students with Disabilities and Inclusion

The author reviewed data regarding the education of students with disabilities from several countries and constituents to provide a point of comparison with policies employed in Vietnam. These data included the perspectives of parents and teachers from Malaysia, Korea, Japan, Singapore, Taiwan, and China (Hong Kong). These countries were selected for both their regional and cultural similarity with Vietnam and the fact that, in several cases, their governments had embraced the tenets of inclusion. In addition, the South Asian countries identified are considered among the more economically viable

and socially progressive of all the countries in this region of the world. Finally, there were few other relevant studies that examined attitudes about disability or the inclusion of students with disabilities in public general education schools and classrooms.

Whereas the new Malaysian Education Act (1998) reflects a philosophical adoption of the tenets of full inclusion, results from a recent study conducted in Malaysia revealed a more “traditional” approach to the education of students with special needs. That is to say, teachers were given the option to either accept or reject a child with disabilities. Furthermore, due to a severe teacher shortage in Malaysian schools, those teachers who agreed to “include” a student with disabilities did so without a teacher’s aide or assistant: co-teaching or team teaching is simply not feasible (Jelas, 2000).

Similarly, in Singapore, where children with disabilities have been accommodated traditionally within their families and communities, new national initiatives such as “Singapore 21” are encouraging citizens to embrace new developments in education. However, there are impediments that need to be overcome before there is widespread acceptance and inclusion of disability. Some of these obstacles are as rudimentary as the systematic preparation of teachers to work with students with disabilities. Currently in Singapore, there are no teacher preparation programs to certify educators as competent to work with special needs children (Lim & Nam, 2000). Furthermore, the educational system is dichotomous, with separate schools for students with moderate to severe disabilities. School administrators perpetuate this tradition by showing preference to better achieving student cohorts (Lim & Tan, 1999).

In contrast, a recent study involving parents of young children with disabilities and directors of early childhood programs revealed a more optimistic appraisal of special education services in Taiwan. The results indicated that 85% of parents surveyed believed their children with disabilities should have the same opportunities to learn as children without disabilities. This represents a paradigm shift from the more traditional view that disability in a child was a matter of fate and therefore a “family” problem. Moreover, the high value placed on academic achievement within the Taiwanese culture virtually assured the disenfranchisement of the child with disabilities whose academic performance was typically sub-par. Thanks, in part, to recent legislation that has helped to improve the quality of services for children with disabilities as well as initiatives to include students with disabilities in general education classes, 87% of new parents surveyed indicated that they were “able to accept and feel good about their children with disabilities” (Kang, Lovett, & Haring, 2002, p. 15). An additional examination of “transition services,” required components of a student’s individualized education plan as mandated by IDEA (2004) in the United States, revealed a significant discrepancy between services needed and services received. These results are consistent with those of efficacy studies conducted in the United States (Chen & Zhang, 2003).

In a recent study of attitudes towards persons with intellectual disability (ID) conducted among stakeholders in Japan, results showed that attitudes of family friends of persons with an ID as well as caregivers and teachers displayed favorable attitudes whereas family members and relatives did not show as favorable attitudes as expected. A possible

explanation for this unexpected disparity might be the stigma that has traditionally been associated with disability and difference in Japan and other East Asian cultures: a family member so affected was deemed a “loss of face” or a source of divine retribution for a former wrongdoing. Furthermore, the family, ultimately, would bear the burden of responsibility in caring for the ID family member, whereas the professional or voluntary caregiver (service provider or teacher) are relieved of such a responsibility and may be, by professional choice, predisposed to persons with ID (Tachibana & Watanabe, 2004).

A study comparing the effects of social support and culture on maternal stress between American and Korean mothers, revealed far higher levels of stress in the Korean mothers. The author posits several reasons for this finding. Chief among them are: (a) the Korean society’s negative attitudes toward disabilities that prevents open disclosure and the search for effective support and interventions, and (b) the loss of the traditional social support network due, in large part, to the industrialization of the country and increased mobility of the Korean population. In addition, while the same services for persons with disabilities exist in Korea as in the United States, they were less accessible to families in Korea. Moreover, those that were available were often substandard as compared with their U.S. counterparts (Shin, 2002).

Attitudes in the U.S. towards Students with Disabilities

While attitudes towards persons with disabilities are more positive in the U.S. than in many other regions of the world, there is much room for improvement (Yucher & Block, 1986). For example, one author has posited that, by assigning full-time aides to children with multiple disabilities rather than teaching them to become independent suggests that people with significant disabilities are incapable of self-determination and the achievement of self-efficacy. The author asserts that such an attitude represents an “ableist perspective” of disability, which reveals the real prejudice against persons with disability that exists in the U.S. despite all the legislative protections (Hehir, 2003).

In a study involving general education teachers who were predisposed to the inclusion of students with disabilities, 90 percent of the participants noted that there were occasions in which including these children with the general education population was inappropriate (Olsen & Chalmers, 1997). In another survey (Sack, 2000) involving 1,700 adults from across the U.S., 48 percent indicated they considered a “disability” label such as “learning disability” to be harmful to a child, 56 percent thought that “learning disabilities” are caused by environmental factors while 48% believed that laziness accounted for many of the cases. Similarly, in another relevant study (Cook, 2001), teachers who were surveyed about their attitudes towards their students with “hidden” and “obvious” disabilities, revealed an attitude of “rejection” towards 32 percent of those in the former category and 17 percent of those in the latter.

Furthermore, 61 percent of general educators polled in another study indicated that they disagreed with the inclusion of students with disabilities (deBettencourt, 1999). Kauffman, McGee, and Brigham (2004) observe that one of the unintended negative consequences of the disability rights movement in America is the credibility it lends to the notion that disability is a “social construct.” The authors further contend that many

persons in the U.S., influenced by the disability rights movement, see “disability” as either unimportant and therefore not worthy of remediation, or as a desirable qualification that does not need “fixing.” In either case, special education services are viewed as unnecessary (Kauffman et al., 2004).

Lastly, it must be noted that, while a dissonance exists between U.S. disability policy and social practice; nevertheless, the government has both authored and implemented laws that have been heralded and replicated worldwide (e.g., Americans with Disabilities Act, 1990; Individuals with Disabilities Education Act, 1990, 1997, 2004; Section 504 of the Rehabilitation Act, 1973).

Special Education in Vietnam

Few South Asian countries enjoy the level of support for inclusive education as evidenced by the recent position statement of the Ministry of Education and Training in Vietnam. With a population of approximately 86 million, Vietnam boasts a very high literacy rate and has produced a well-educated middle-class. In concert with this statistic is the fact that Vietnam has invested research and logistical resources in the development of innovative pre-school and early intervention programs. Similarly, Vietnam has a very rigorous research agenda directed at identifying interventions for autism, specific physical disabilities, low vision and blindness, as well as hearing impairments.

Purpose of the Study

The purpose of this study was to identify prevailing attitudes of both school teachers and college teacher educators towards students with disabilities. This was seen as a preliminary step in identifying their predisposition towards the implementation of inclusion, which is currently a key national initiative. Later, the researcher plans to return to Vietnam to participate in an international conference on inclusive education to be held in Hanoi in the summer of 2011 and will use this opportunity to further investigate the attitudes of conference participants towards the inclusion of students with disabilities. It is the author’s intention that the information gathered from these investigations will be used both to inform and guide the Ministry of Education and Training in its development of an effective and comprehensive policy regarding the education of students with disabilities in Vietnam.

Methodology

Participants

The author used the opportunity provided during a brief stay in Hanoi in August of 2004 to survey and interview educators attending a national workshop at which he was asked to speak. In addition, he was invited to tour some local special education schools, which also presented a unique opportunity to investigate the state of special education services for children as well as the prevailing attitudes of stakeholders such as teachers, professors, and administrators towards persons with disabilities. Four-hundred and thirty-five teachers and teacher educators representing all regions and most of the 58 provinces of Vietnam were surveyed. These participants were volunteers who were attending the week-long workshop for credit sponsored by the Ministry of Education and Training at which the writer was a key presenter. It is important to note that approximately 95

percent of the participants in this survey were women and the education levels of the participants ranged from a four year baccalaureate to a PhD.

Furthermore, Vietnamese colleagues who were faculty members at the National Teacher Training College in Hanoi distributed and collected the surveys, once completed, from attendees who agreed to participate. The researcher used this convenience sample to generate data that would inform a preliminary investigation of the attitudes of Vietnamese educators towards students with disabilities.

Procedures

The investigator employed the Attitudes Towards Disabled Persons Scales (ATDP-O, 1986), a survey that has demonstrated good reliability based on the consistency evident in the outcomes of many studies (see Appendix A). The ATDP-O was constructed in an attempt to provide an objective, reliable, and valid measure of attitudes towards persons with disabilities and was designed to measure the attitudes of both disabled and non disabled persons. In order to facilitate the administration of this survey instrument, the researcher selected the original scale form O (Yuker, Block, & Campbell, 1960) that consisted of 20 items. This form was also preferable since it has fewer items and takes less time to complete and score. The ADPTO-O may be administered as either an individual or group test.

The researcher hypothesized that respondents who revealed a negative predisposition would, likewise, be reticent towards the inclusion of students with disabilities. Since the researcher has been enlisted by teacher preparation institutions in Vietnam as well as, peripherally, by the Ministry of Education and Training, to provide instruction in effective inclusive educational techniques, it seemed important to determine preexisting attitudes towards the public education of students with disabilities. Such awareness, ostensibly, would enable the researcher to suggest ways to more effectively educate teachers and professors about the nature of disability and, consequently, to positively affect their attitudes regarding inclusion. In addition to the survey, the researcher conducted observations and engaged in conversations with several participants from various institutions of higher learning and a few of the provincial school districts in Vietnam.

Process

The author spent eight days in Hanoi, and, in addition to distributing the ATDPO survey to voluntary participants, interviewed several representatives from both the special education department of the University of Hanoi as well as the National Teacher Training College for Early Childhood Educators No. 1 in Hanoi. In addition, the author visited several schools in the Hanoi municipality and recorded details of these observations. Also, the researcher presented a series of workshops to select representatives from the Ministry of Education and Training as well as several regional universities on the topic of effective inclusive education practices and early intervention strategies. The final day of the conferences consisted of a question and answer period that was videotaped, which enabled the researcher to assess the participants' understanding of the topics presented.

Results

Survey Results

An analysis of the survey data shows that the respondents in this study (N = 435) achieved a total mean score of 58.7. This score correlates most closely with that produced in a study conducted by Evans (1974) with a sample of twenty respondents, which resulted in a total mean score of 58.4. The respondents in that study were high school students. The only study evincing a lower mean score produced in reported investigations between 1960 and 2004 was in a similar study also conducted by Evans (1974) involving adolescent offenders for which the total mean score was 52.0. As a point of comparison with similar respondents in America, i.e., faculty members and teachers, the survey results of a study conducted by Conine (1968) involving teachers, produced a total mean score of 75.1. Similarly, a study involving 324 faculty members from a university in the United States resulted in a total mean score of 83.0. According to Yunker and Block (1986), a higher score on the ADPT-O correlates with greater tolerance and understanding of persons with disabilities (see Figure 1 below).

An examination of responses item by item will provide the reader with a more accurate understanding of the attitudes of the Vietnamese participants relative to specific indicators. In response to the statement, "Parents of children with disabilities should be less strict than other parents," 88 percent of the respondents agreed. Yunker and Block (1986) suggest that disagreement with this item reflects a more positive predisposition towards persons with disabilities. In response to the second item, "Persons with disabilities are just as intelligent as persons without such disabilities," a majority of the survey participants disagreed (89 percent); the implications of a negative response to this item are self-evident. Similarly in response to item 3, "Persons with disabilities are usually easier to get along with than other people," a majority of respondents agreed "a little" or "pretty much" (59.1 percent). Once again Yunker and Block (1986) suggest that the preferred response to this item would be some level of disagreement.

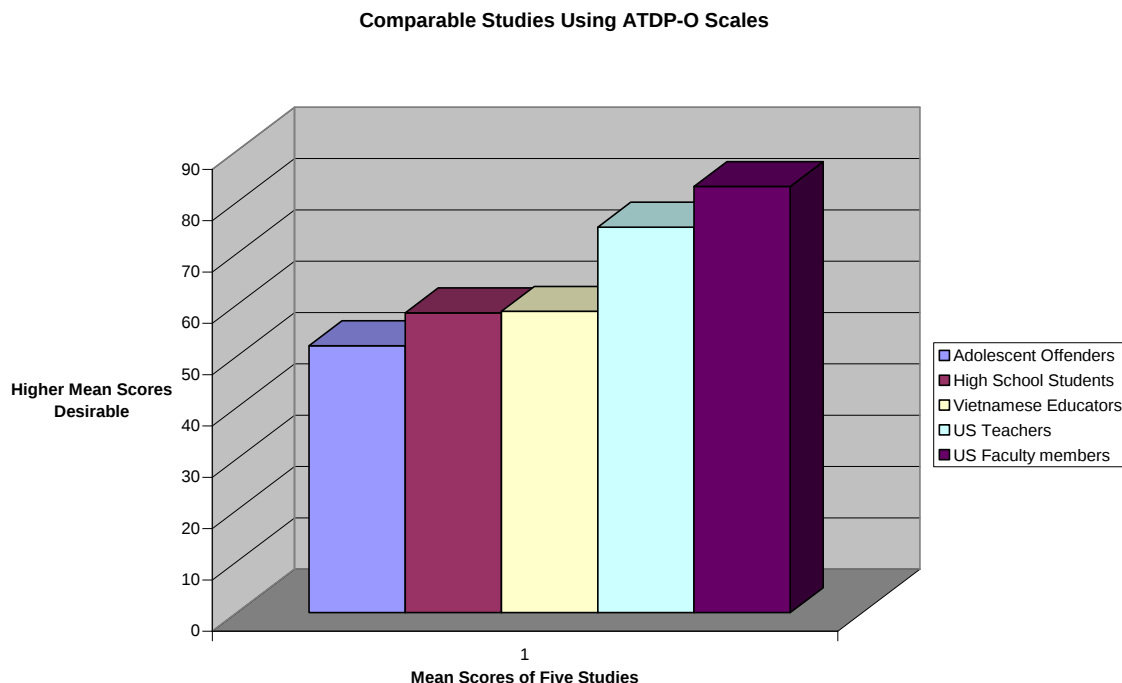
The next item relates to an attitude that *might* reflect latent prejudice or misunderstanding of disability. The item states, "Most persons with disabilities feel sorry for themselves." In consideration of this item, 83 percent of the respondents indicated that they agreed "a little," "pretty much," or "very much." In addition, in response to item number 6, "There should be no special schools for children with disabilities," 60 percent of the participants answered in the affirmative. (Note: without further elaboration, these affirmative responses to item # 6 might be interpreted as supporting the inclusion of children with disabilities in the general education classroom or, conversely, might reflect a belief that is in opposition to the provision of a continuum of special education services.

Item number 7 states, "It would be best for persons with disabilities to live and work in special communities." In contrast with their responses to the first six items, the majority of respondents *disagreed* with the statement, which correlates with the desired response, one that is representative of an inclusive or integrative predisposition relative to persons (students) with disabilities.

Participants' responses to the item 10, "Persons with disabilities should not be expected to meet the same standards as persons without disabilities," revealed a general *disagreement* (66 percent). In examining the results for item 13, "It is almost impossible for a person with a disability to lead a normal life," and comparing it with a similar item, # 17, which states, "Persons with disabilities cannot have a normal social life," showed that 58 percent of the respondents *disagreed* with the former statement, whereas 75 percent *disagreed* with the latter. Similarly, 64 percent of the respondents *disagreed* with the statement, "You should not expect too much from persons with disabilities." These findings reflect a positive and desirable attitude towards students with disabilities in the majority of respondents.

In contrast with these positive dispositions, the respondents revealed a negative trend in their answers to items 16, 19, and 20. These items reflected an opinion about the sensitivities and temperament of persons with disabilities. The majority of respondents surveyed indicated that they agreed that persons with disabilities are more easily upset and sensitive about negative comments. In addition, 67 percent of the respondents agreed that persons with disabilities are often grouchy. Lastly, in response to the statement, "Most persons with disabilities feel that they are not as good as other people," 68 percent of respondents stated that they agreed.

Figure 1.
Comparison of total mean scores of five studies using ATDP-O Scales.



Interview and Field Observation Results

In conversations with key representatives from the Ministry of Education and Training in Vietnam as well as the directors of teacher preparation institutions in Hanoi, DaNang,

and Ho Chi Minh City, the investigator noted generally optimistic and proactive support for inclusive education practices. However, in speaking less formally with public school teachers and faculty within teacher preparation institutions, this writer sensed some skepticism about the feasibility of instituting inclusive practices within the more rural provinces of Vietnam. This reluctance, they explained, was due to deep cultural beliefs about the negative stigma associated with any type of disability. Thus, family members as well as teachers in these areas often associated disability with a “loss of face.”

An example of one such conversation between the principal researcher and the director of a school for children with autism supports this assertion. In the course of the conversation, the director despaired of providing her students with minimal material support and outdated intervention techniques. In addition, the director expressed concern over the resistance of the community members in Hanoi to the education of students with severe disabilities. When asked about her impression of the successful implementation of inclusion, she expressed a guarded optimism, again noting the resistance of the communities in Hanoi to the education of students with severe disabilities, especially within the general education schools and classrooms. She noted that although most community members were receptive to some aspects of rehabilitation, some did not see the benefit of formal education for these students.

In addition to the director of the school for children with autism, the author also interviewed a director of an early childhood program in Hanoi. This individual expressed concern in the short term about the inclusion of children with any type of disability in the general education classroom. In support of this, she cited the concerns expressed by the parents of several of her students without disabilities when they were told that students with multiple disabilities would be admitted to the school. She further speculated that, based on her experience with the school systems of Hanoi and the surrounding northern provinces, these concerns were typical of parents of non-disabled children. Thus, she did not think that inclusion as it is practiced in the United States would be successful at this time in, at least, the rural and more remote provinces of Vietnam.

The investigator was able to travel to two special schools within Hanoi province and observed a *significant* number of students with autistic spectrum disorders, various cognitive impairments, and severe and multiple disabilities. The facilities themselves appeared understaffed and marginally supplied, and were generally lacking in effective remedial practices. At the conclusion of each visit, the author was repeatedly asked by the directors of these schools for monetary as well as technical support and assistance. This experience was most compelling and provided valuable insights into the actual day-to-day functioning of many special education schools and self contained programs in this region of Vietnam.

Discussion

The survey results revealed a few positive and negative attitudinal trends. First, and perhaps the most noteworthy is that a solid majority (89 %) of the respondents did not

think persons with disabilities to be as intelligent as persons without disabilities. This belief might result in lower expectations for students with disabilities and the provision of programs that provide less challenging curricula and limited postsecondary options. The other negative attitudinal responses involve stereotypical predispositions regarding the temperaments of individuals with disabilities; specifically, that they are inherently grouchy, more easily upset, and have lower self-esteem than their non-disabled counterparts. Such beliefs might act as “self-fulfilling prophecies,” misconceptions that help to foster and perpetuate these undesirable characteristics in students with disabilities.

In contrast, the majority of respondents indicated that they believed that persons (students) with disabilities could lead normal lives with expectations of a normal social life and should not be relegated to life in “special” communities. These responses seem paradoxical to the more negative perceptions of persons with disabilities reflected by the respondents; however, a closer look reveals a consistency with the traditional Vietnamese sense of community and the responsibility of that community for the welfare of its constituents.

The only ambiguous findings were the responses to item number 6, “There should be no special schools for children with disabilities,” to which 60 percent of the participants answered in the affirmative. These responses might be interpreted as supporting the inclusion of children with disabilities in the general education classroom or, conversely, might reflect a belief that is in opposition to the provision of a continuum of special education services.

The interviews and field observations provided several insights relative to the attitudes of educators and the Ha Noi community regarding students with disabilities and their inclusion in general education classrooms. In general, based on several conversations with educators and disability program directors, it seems that an impediment to the inclusion of students with disabilities in general education programs and schools, at least in the more rural provinces, might be the traditional view of “disability” as an undesirable, a stigma that reflects poorly on an affected family and community. Also, historically, among the Vietnamese, the community takes care of the needs and training of individuals regarded as “disabled.” It is not customary to yield these responsibilities to the others. Another impediment to inclusion described by at least one administrator of a school was the reticence on the part of some parents to allow their pre-school age children to attend classes with students with various disabilities. This reluctance on the part of some parents to support inclusive education is not restricted to South Asian societies; similar findings were reflected in studies conducted in the U.S. (Austin, 2001). Finally, many special -programs in the Ha Noi region appeared under-funded and in dire need of basic, remedial supplies as well as the provision of training for staff in current, best practices.

In reviewing the findings of this study, several conclusions may be inferred. The first is that, currently, there exists a dissonance between what appears to be government policy respecting inclusion and the implementation of it. This schism exists for several reasons; principally, because historical cultural beliefs persist in Vietnam today and chief among

these is the belief that children with disabilities of any type represent an undesirable state and reflect poorly upon the parents and families. Also, because Vietnam is a country in which the good of the community predominates, the primary efforts of the community should be towards the improvement of itself. Thus, children who are gifted or show some predilection towards higher learning should receive the preponderance of resources. Children with disabilities, while the responsibility of the community, nevertheless represent a “loss of face” for the family and community. It is difficult for these communities to justify the commitment of resources needed to provide adequate remedial assistance or support the inclusion of these children in the regular education population. The results of the survey clearly support this in as much as the majority of the responses to the survey items reflect a slightly negative perception of disability and, consequently, an apparent reluctance towards the integration of students with disabilities. An analysis of the interview data reveals some resistance on the part of several representatives within the Hanoi district and other provinces, towards the inclusion of children with disabilities; especially those with multiple and severe disabilities. It is very tempting to extrapolate from these preliminary observations and interviews more generalized conclusions about the state of special education nationwide in Vietnam. However, since this was a nascent study that was limited in scope as well as in knowledge of Vietnamese culture, any conclusions or generalizations drawn from its findings would be speculative. Thus, to make sweeping generalizations about the state of special education and the inclusion of students with disabilities in public schools is ill-advised, based on these limitations. In conclusion, the attitudes reflected in this preliminary research project seem to be typical for this region of the world, where custom and tradition predominate and the educational practices of the West are slow to achieve acceptance. This observation is in no way intended as an indictment of the professionalism of Vietnamese educators. What it does indicate is a possible “disconnect” between government policy at the national level and educational practice at the local and regional levels, where custom and tradition are revered. The challenge for foreign educational consultants is to find a way to bridge the gap between these time-honored traditions and best practices in special education. This conundrum poses a daunting, but important task for future researchers.

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ATDP-O Scale
(Yuker & Block, 1986)

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one. Write +1, +2, +3: or -1, -2, -3: depending on how much you feel in each case.

+3: I AGREE VERY MUCH	-1: I DISAGREE A LITTLE
+2: I AGREE PRETTY MUCH	-2: I DISAGREE PRETTY MUCH
+1: I AGREE A LITTLE	-3: I DISAGREE VERY MUCH

- | | |
|----------|---|
| _____1. | Parents of children with disabilities should be less strict than other parents. |
| _____2. | Persons with physical disabilities are just as intelligent as persons without such disabilities. |
| _____3. | Persons with disabilities are usually easier to get along with than other people. |
| _____4. | Most persons with disabilities feel sorry for themselves. |
| _____5. | Persons with disabilities are the same as anyone else. |
| _____6. | There should be no special schools for children with disabilities. |
| _____7. | It would be best for persons with disabilities to live and work in special communities. |
| _____8. | It is up to the government to take care of persons with disabilities. |
| _____9. | Most persons with disabilities worry a great deal. |
| _____10. | Persons with disabilities should not be expected to meet the same standards as persons without disabilities. |
| _____11. | Persons with disabilities are as happy as persons without disabilities. |
| _____12. | Persons with severe and multiple disabilities are no harder to get along with than those with less severe disabilities. |
| _____13. | It is almost impossible for a person with a disability to lead a normal life. |
| _____14. | You should not expect too much from persons with disabilities. |
| _____15. | Persons with disabilities tend to keep to themselves much of the time. |
| _____16. | Persons with disabilities are more easily upset than persons without disabilities. |
| _____17. | Persons with disabilities cannot have a normal social life. |
| _____18. | Most persons with disabilities feel that they are not as good as other people. |
| _____19. | You have to be careful of what you say when you are with persons with disabilities. |
| _____20. | Persons with disabilities are often grouchy. |

An Exploration of Instructional Support Use in a Secondary Science Classroom

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Abstract

Our classrooms are becoming more diverse; with this diversity educators need to find multiple strategies to address the varied learning preferences in their classrooms. By the time students enter secondary education, the expectation is that they are capable of reading and organizing information from a text. However, all of our students do not come to a high school course prepared with the essential skills to benefit from instruction. This can be especially true with content such as science. This study explores the use of varied instructional supports to facilitate better access to the curriculum for diverse learners, especially those with special needs. Students were provided text materials, podcasts, and digital books. Surveys indicated that students used the text based materials most frequently.

Effective Classroom Strategies

Effective teachers know that it is essential to differentiate instruction. This can prove especially challenging when a teacher instructs more than 100 students per day. Universal design for learning (UDL) guidelines provide principles that, when utilized, can help all teachers meet the varied needs of their learners (Rose & Meyer, 2002). The three basic elements of UDL are multiple means of representation, multiple means of expression and action, and multiple means of engagement. We all learn differently; providing multiple means of representation involves different ways of accessing the curriculum. To meet the varied abilities and differentiate instruction, we can provide multiple means of expression and action; this allows varied ways of letting students demonstrate what they know. And finally, to engage our students, we must provide varied choices to peak their interests and keep them engaged.

No matter how many instructional strategies are used, it is essential that students read effectively to access all of the available materials. Yet, many of our students are either unmotivated or lack the essential skills to read effectively. To add to this problem, explicit reading instruction tends to decline as students move toward the secondary level (Ness, 2007). As materials become more complex, supports are diminished.

Students will likely need a variety of strategies to be successful in their coursework; this includes being able to develop mental models as they engage with the content. There is some evidence that drawing can help learners to construct mental models. In fact, students who draw mental models tend to be more engaged in their learning; they appear

to provide more self-monitoring (Wooley, 2010). Strategies that incorporate the development of mental models could improve a student's comprehension. Additionally, as students begin learning new content, it is important that they learn vocabulary and engage in multiple strategies to enhance comprehension (Carnine & Carnine, 2004).

Effective readers use a variety of learning strategies to access text and organize information. These skills include previewing the text and developing a method for paraphrasing. The use of paraphrasing assists students in monitoring their understanding of text and can be helpful in improving comprehension (Kletzien, 2009). In a way, paraphrasing can serve as a metacognitive strategy. It is a way to think about and reflect on what we are reading; we can monitor our understanding as we engage with the reading content.

Another way to improve comprehension is to preview and interact with text as we read the content; effective readers use these strategies. The PART strategy has been found to be an effective reading strategy (Friend, 2009). Using this strategy, the student (1) previews the text (2) asks questions to discern what the text is about (3) reads the text then (4) takes notes. While this method seems rather simple, it can help students to develop their mental models as they engage with text. Rather than viewing this strategy as linear, students can use it for each section of text. This strategy allows them to chunk information as they read text chapters or supplemental material; chunking can aid in comprehension.

Method

The researcher and classroom teacher collaborated in developing selected instructional supports that were made available to all students in three sections of biology. Biology I was chosen because this is a course required for high school graduation. Students taking the course were provided access to podcasts, digital books, and handouts to support instruction in the biology classroom. It should also be noted that there were selected podcasts that accompanied the biology text as well as teacher-made podcasts.

The classroom podcasts referred as ("special podcasts") were developed by the researcher or the classroom teacher. The initial intent was to provide a pre-reading tool that could be used to assist in comprehending and learning the content in the textbook. The podcasts were enhanced; that is, they were audio synced with slides. The format was designed so that they could be used while students were reading their texts and taking notes. The idea was to help students in creating mental models of the content and using strategies such as PART to enhance comprehension.

The classroom teacher developed all of the digital books. These electronic books highlighted selected concepts that the teacher wanted to emphasize. It was hoped that these additional supports would be helpful to a variety of diverse students, especially those with disabilities. The materials were posted on the classroom teacher's website for easy access, outside of the classroom.

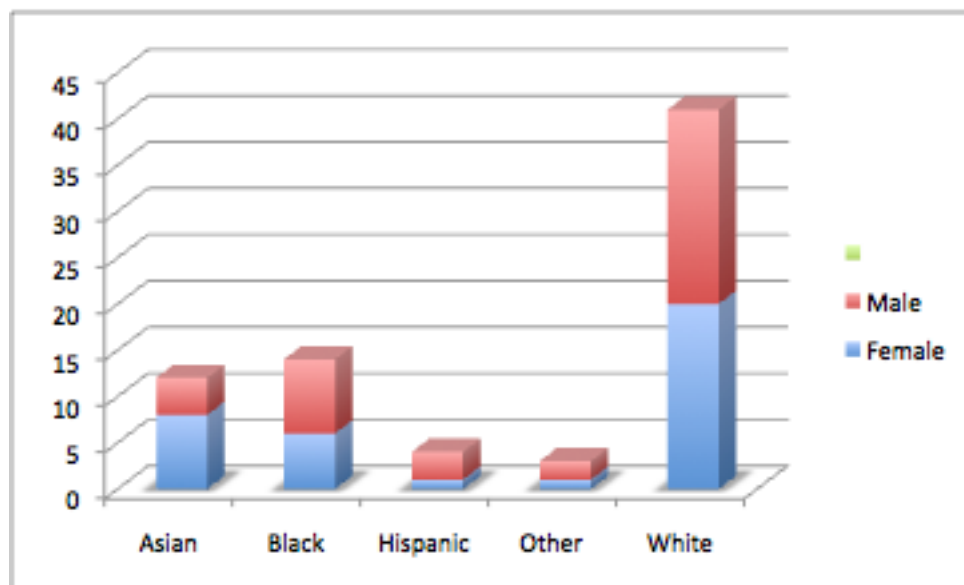
To ensure that all students understood how to access the materials, the classroom teacher demonstrated and used one of the digital books during a class session. The teacher was available for students to use computers before and after school and during lunch. Although a podcast was not shown during the class sessions, students were told how to access them. Students also had access to the materials before and after school, and in some cases, during lunch. The teacher was readily available, if students didn't have access outside of school.

Although materials were developed for the key concepts throughout the year, a survey was administered at the end of the first semester. While additional data was not collected, the instructional supports were made available throughout the year; hoping that these materials would help diverse learners have better access to the general curriculum in biology.

Results

The survey was conducted during regular class sessions for the three sections of Biology I. There were a total of 74 respondents; there were 36 females and 38 males. Figure 1 provides the racial/ethnic background of the respondents.

Figure 1. Demographics



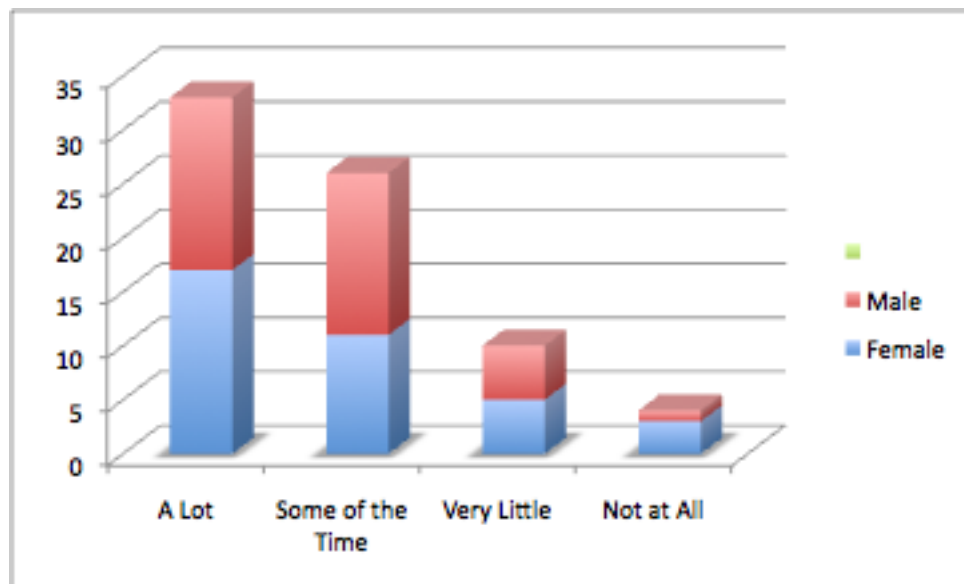
Of the respondents, six of the students were identified as students with disabilities and had individualized education programs (IEP). Two were female and four were males. Students with 504 plans were not included. Because of the small numbers, the data was not disaggregated.

Students were asked to respond to the use of selected materials. The categories of response were: used the materials a lot; used some of the time; used very little; did not use at all. Students were asked about their use of: (1) assigned readings (2) podcasts that accompanied the textbook (3) teacher-created podcasts and (4) teacher-created digital books.

Whole Class Responses by Gender

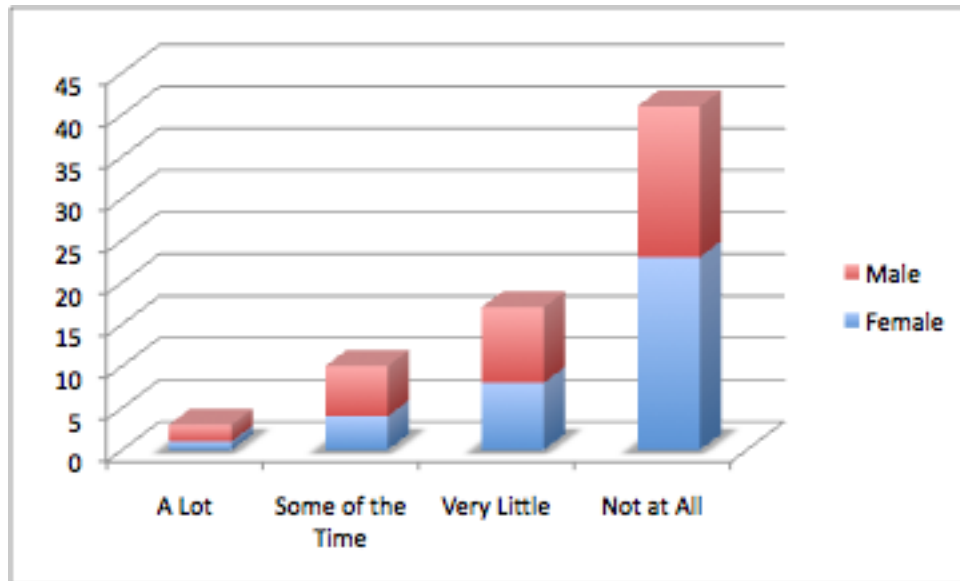
Students were asked to what extent did they read the assigned text or readings. The figure below represents the responses of the total class. Most students responded that they read the text and the assigned readings a lot or some of the time.

Figure 2. Use of Assigned Readings



There were a series of podcasts that accompanied the textbook. Students were asked about their use of these podcasts. Most students did not use these podcasts at all.

Figure 3. Use of Textbook Podcasts



Students were provided teacher-created podcasts. They were asked if they used these podcasts as a pre-reading activity or to study for tests. Most students did not use these podcasts for either activity.

Figure 4: Use of Podcasts as a Pre-Reading Tool

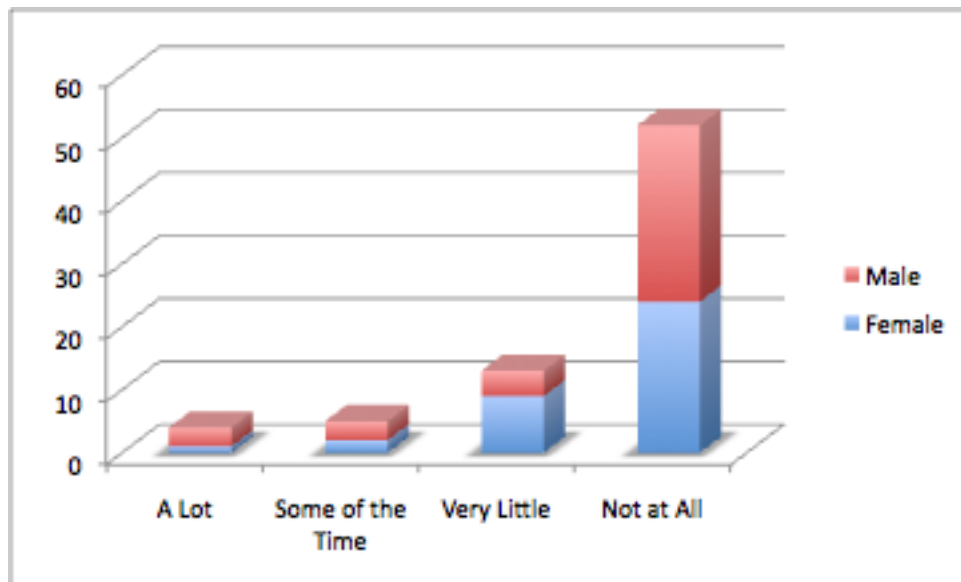
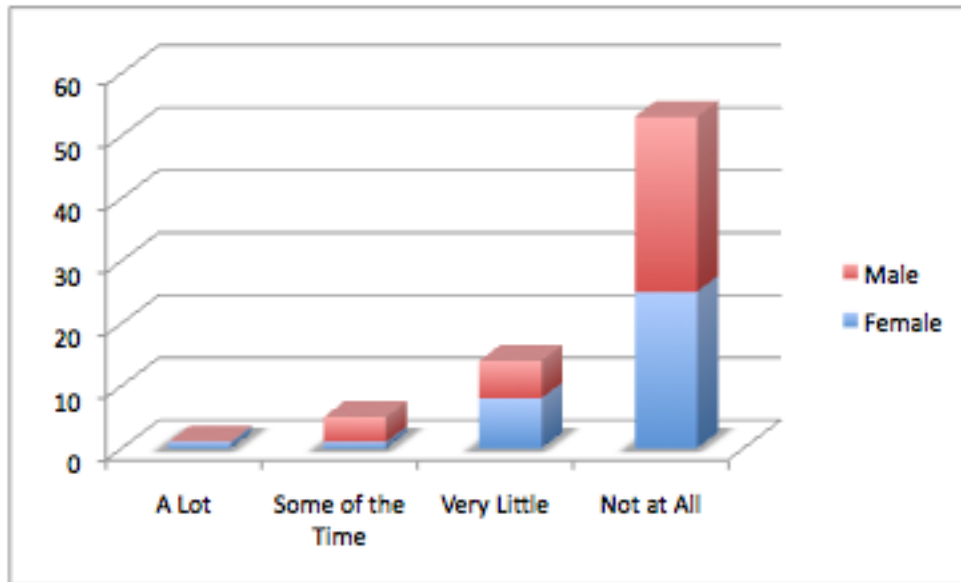
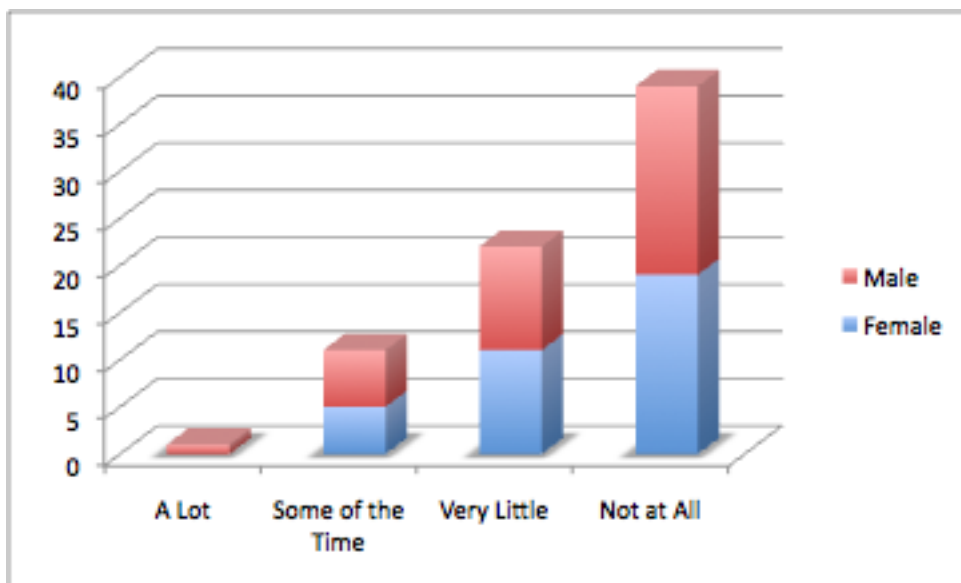


Figure 5. Use of Podcasts as a Study Tool



The final instructional support was the digital books. As with the podcasts, limited use was reported.

Figure 6. Use of Digital Books



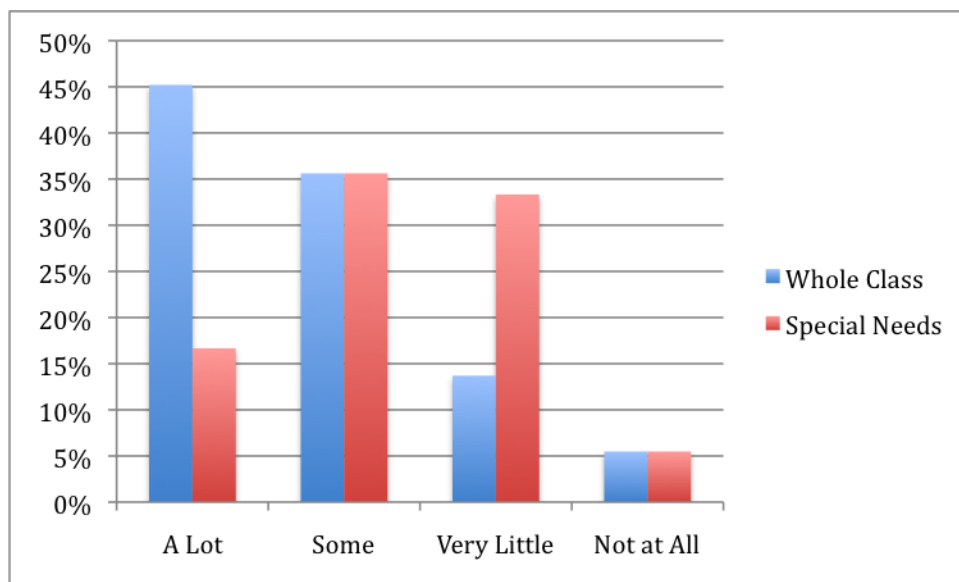
Students with Disabilities and Whole Class Responses

The main goal of this study was to provide better, independent access to the curriculum for students with special needs and other diverse learners. Because the numbers were so

small, the data could not be disaggregated by gender or race. The following figures provide a comparison by percents of student use.

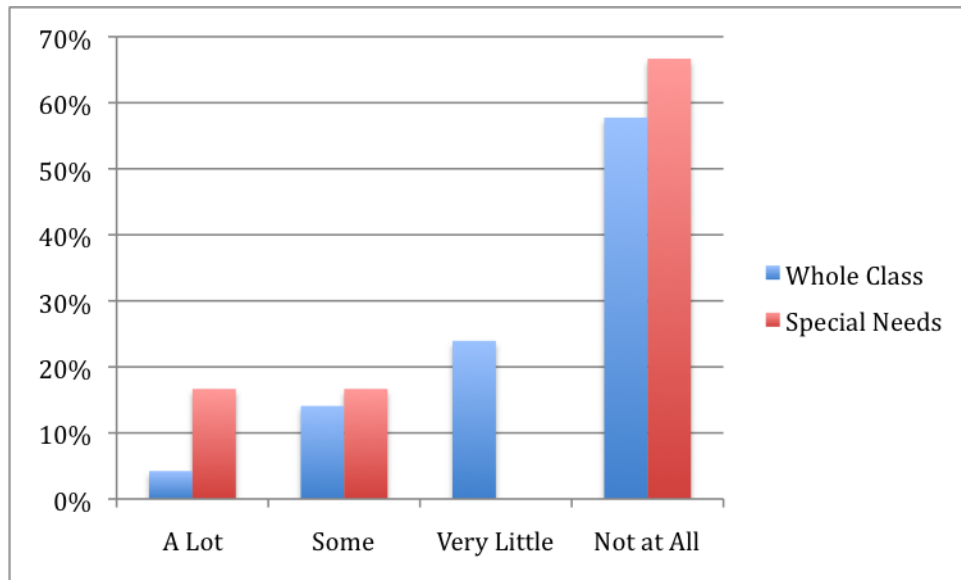
For use of assigned readings, 45 percent of whole classes reported ‘a lot’ while only 17 percent of students with special needs reported in this category. Use was the same for ‘some’ use of textbooks at 36 percent for both groups. In looking at textbook and other text materials, it appears that a higher percentage of students with special needs reported using text materials “very little”; 33 percent reported very little use while 14 percent were reported for whole classes. Only five percent of both groups reported not using the text and related materials at all.

Figure 7. Use of Assigned Readings



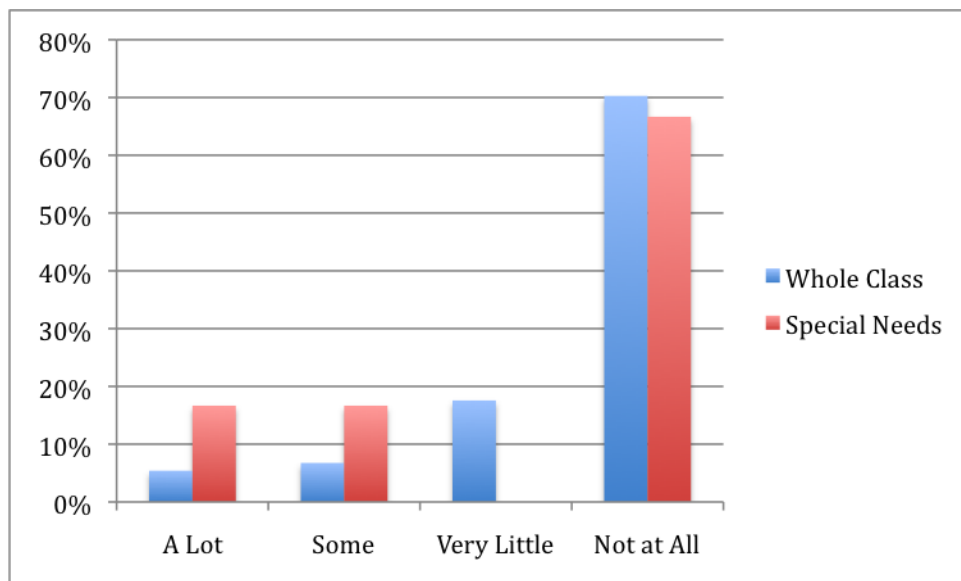
In terms of the textbook podcasts, more students with special needs reported using the podcasts than classes as a whole in the ‘a lot’ or ‘some’ category; 34 percent of students with special needs compared to 18 percent reported use as a lot/some. 24 percent of whole class reported very little use with zero percent for special needs. 58 percent of the class reported no use with 67 percent of students with special needs reporting no use.

Figure 8. Use of Textbook Podcasts



Five percent of whole class and 17 percent of students with special needs reported using podcasts as a pre-reading tool; 7 percent of whole class and 17 percent of students with special needs reported using them some; 18 percent of whole class and zero percent of students with special needs reported very little use. Like classes as a whole, most students did not use podcasts as a pre-reading strategy; 70 percent of whole class and 67 percent of student with special needs did not use them.

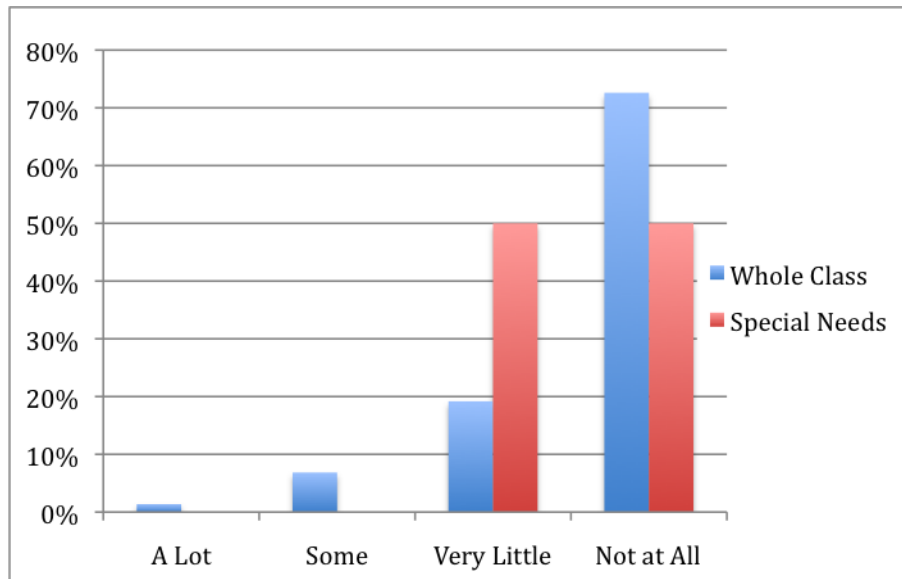
Figure 9. Use of Podcasts as a Pre-Reading Tool



Only one percent of whole classes reported using podcasts as a study tool with zero percent of students with special needs reporting in this category. For whole class, seven percent reported some use, 19 percent very little, and 73 percent reported no use. For

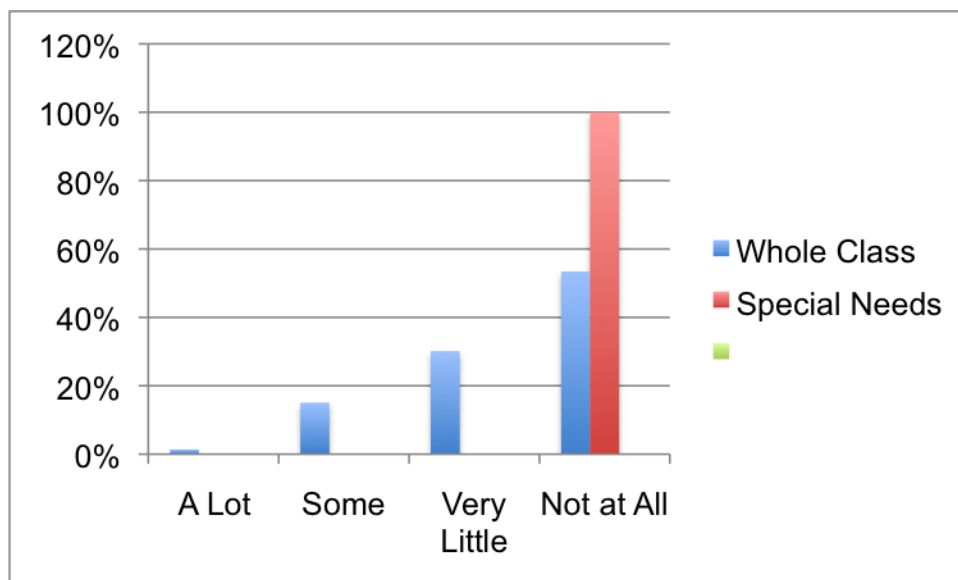
students with special needs, zero percent reported some use, 50 percent reported very little use, and 50 percent report no use.

Figure 10. Use of Podcasts as a Study Tool



In looking at digital book use, overall classroom use was low. 17 percent reported using the books a lot, 15 percent reported some use, 30 percent reported very little use, and 53 percent reported not using them at all. However, for students with special needs, they reported that they did not use the digital books at all.

Figure 11. Use of Digital Books



Discussion and Recommendations for Future Research

To learn science or any other content, we know that students need to be engaged and to interact with the materials. Because we are educating twenty-first century students who are actively using technology, we chose to develop more materials that were technologically based. We expected that these materials would prove interesting and motivate the students to use them.

From reported use, it seems evident that students relied more on traditional materials; that is, they used the textbook and handouts created by the teacher. One major print support provided by the teacher was study guides for major tests. Students may have been more comfortable in using traditional materials to enhance their learning. Because the materials were not used extensively, we cannot determine any effect on learning.

This exploratory study raises some critical questions in how to assist students with special needs in accessing the general curriculum. The study was conducted in an inclusive manner. Discussions with the teacher indicated that students do not want to be identified; they want to be part of the regular classroom with their peers. One strategy that could have proved helpful would be to provide one-to-one instruction for students with special needs in a private setting. This extra support would ensure that the students knew how to access and use the support materials. In hindsight, this resource could have been provided to any student, after school.

From anecdotal comments of the teacher, students were very interested in how the materials were constructed. In keeping with a constructivist approach, the next step would be to have the students create all of the materials. Many of the students were technologically savvy, so instruction could focus on strategies that can be helpful in learning science content. Teachers could assess levels of understanding by reviewing and grading activities that the students created.

In fact, the classroom teacher is now beginning this effort. A number of students are unsuccessful with the formal test environment. The teacher has developed a system of test recovery. She is introducing various study strategies for student use. Students have the opportunity to create an assignment that will allow them to improve their test grade. Initial observations indicate that this is a success. A future research project could focus on which strategies seem to be the most effective. It is likely that different strategies will be more effective with certain types of learners. In differentiating instruction, it is evident that a single solution is not effective with all learners.

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Students with Sickle Cell Anemia Participating in Recess

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Abstract

The participation of a student with Sickle Cell Anemia in recess can often be both challenging and rewarding for the student and teacher. This paper will address common characteristics of students with Sickle Cell Anemia and present basic solutions to improve the experience of these students in the recess setting. Initially the definition, prevalence, and symptoms of Sickle Cell Anemia will be presented. The paper will then address recommendations for children with Sickle Cell Anemia in recess.

Definition and Prevalence of Sickle Cell Anemia

The Individuals with Disabilities Education Act (IDEA) states that children who are determined to have disabilities receive special education if the condition negatively affects the educational performance of the child. One such category, which includes a variety of specific disabilities, is *other health impairments*. As the reader will note, the following definition of other health impairments in IDEA includes mention of sickle cell anemia.

Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that—

- (i) Is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, *sickle cell anemia*, and Tourette syndrome; and
- (ii) Adversely affects a child's educational performance. [§300.8(c)(9)] (CFR §300.7 (a) 9) (IDEA, 2004).

Anemia generally refers to a condition where an individual's blood has less than a normal number of red blood cells (National Dissemination Center for Children with Disabilities, 2010). Anemia also includes instances where the red blood cells themselves don't have enough hemoglobin – the carrier of oxygen. More specifically, sickle cell anemia describes an abnormality in the hemoglobin and the shape of the red blood cells. “Sickle” refers to the cells becoming sickle-shaped, like the letter C. As a result of this shape, it is difficult for the red blood cells to pass through small blood vessels. This difficulty leads

to pain and often damages organs (National Dissemination Center for Children with Disabilities, 2010).

Worldwide, sickle cell anemia affects millions of people. In the United States, the disease affects about 70,000 people. Sickle cell anemia is particularly common among people whose ancestors come from sub-Saharan Africa; Spanish-speaking regions (South America, Cuba, Central America); Saudi Arabia; India; and Mediterranean countries such as Turkey, Greece, and Italy. In the United States, the disease occurs in about 1 in every 500 African-American births and 1 in every 1000 to 1400 Hispanic-American births. About 1 in 12 African Americans carry the trait for the disease (Oak Ridge National Library, 2005).

Symptoms of Sickle Cell Anemia

It is important to note that diagnosing Sickle Cell Anemia is relatively simple. The procedure involves a simple blood test to determine what type of hemoglobin a person has. The test also determines if the shape of the red blood cells is sickle-shaped. Another important fact to note is that there is no cure for sickle cell anemia, but there are treatments for the common symptoms and complications. If the disease is not treated, damage to a variety of organs in the body, including the spleen, kidneys, and liver, can arise (National Dissemination Center for Children with Disabilities, 2010).

Sickle Cell Anemia can affect the individual in either a minor or severe manner. The following characteristics – either all or some - may be present:

- Hand-foot syndrome – (as a result of the blocking of blood vessels in hands or feet, pain and swelling along with fever occur)
- Fatigue, paleness, and shortness of breath
- Pain that occurs unpredictably in any body organ or joint
- A variety of eye problems including deterioration of the retina possibly leading to blindness
- Yellowing of skin and eyes
- Delayed growth and puberty in children and often a slight build in adults
- Increased vulnerability to infections
- Increase risk of stroke, primarily in children
- Acute chest syndrome (Gene Gateway: Exploring Genes and Genetic Disorders, 2005).

Benefits of the Recess Setting for Children with Sickle Cell Anemia

Simply stated, the benefits of the recess setting are high for all children. Included in these benefits are both physical and social benefits. In terms of physical benefits, recess has been shown to lead to:

- Improvement of general fitness and endurance levels for children (KidsHealth.org, 2009).

- Improvement of out-of-school activity levels – children usually are involved in physical activities on days in which they participate in in-school physical activities (Dale, Corbin, & Dale, 2000).

It is important to note that the physical benefits from recess for children with sickle cell anemia are particularly important. The most important of these benefits is to improve endurance. This should be the goal of recess for children with sickle cell anemia since fatigue and shortness of breath, as noted, are often common for these children.

Recess Recommendations for Children with Sickle Cell Anemia

To achieve the aforementioned goal of improving endurance through recess, the following recommendations should be followed for a student with sickle cell anemia during recess:

- Consume water before, during, and after exercise to avoid dehydration
- Keep the exercise intensity at a moderate level. High-intensity exercise can cause pain as a result of dehydration - increase intensity with caution (Livestrong.com, 2010).

The first of these recommendations – to consume water - is fairly easy to follow. The second recommendation, to keep exercise intensity at a moderate level may be a bit more difficult. The benefit of keeping the exercise intensity level at a moderate level, as opposed to a high-intensity level, is that because of a reduced level of pain, or better yet, no pain at all, children will continue to exercise. In an attempt to better have children follow these recommendations, listed below are some good active recess choices for the child with Sickle Cell Anemia.

- Shooting basketball shots – avoid competitive full-court games where the child is forced to move at a high intensity level and play offense and defense
- Passing a soccer ball with a partner – avoid competitive games where the child is forced to move at a high intensity level and play offense and defense
- Turning the rope for others as they group jump rope – avoid having the individual jump rope – this is often at a high intensity level
- Play horseshoe-like games
- Throwing and Catching a ball or Frisbee with a partner or in a group circle
- Playing a golf-like game
- Playing a bowling-like game

Conclusion

The participation of a student with a health impairment in recess can often be both challenging and rewarding for both the student and teacher. The rewards can manifest themselves in the ability of the teacher to guarantee the safety of all students in an instructionally sound environment. This paper has hopefully addressed some basic concerns and solutions to improve the recess setting of students with sickle cell anemia.

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Who Does the Alternate Assessment Really Assess?

Debra Bruster

Abstract

Special education teachers in Georgia are required to develop grade level tasks, reflecting grade level standards, teach the tasks and document the progress of their students with significant cognitive disabilities in the areas of math, science, literature, and social studies. The teachers must then compile the evidence of the students' progress on the tasks into a portfolio that is graded to determine if the students (and sometimes the schools) make adequate yearly progress. This literature review will look at research concerning teachers' perceptions of alternate assessments. This literature will attempt to prove the hypothesis that teachers perceive alternate assessments as an assessment of their ability to complete the task rather than student learning and knowledge. The literature is arranged chronologically.

Introduction

In the state of Georgia, teachers of students with significant are required to create and compile a portfolio of student work samples and evidence that correlate with grade level Georgia Performance Standards in the areas of reading, math, science and social studies. The portfolio of evidence serves as the alternate assessment for the Georgia High School Graduation Tests required for 11th graders and for the Criterion Referenced Competency Test required of students in grades K-8 (Georgia Department of Education, 2010). These assessments also determine if the school and system make Adequate Yearly Progress (AYP) as defined by No Child Left Behind (NCLB). The following review of the literature will examine the question, "Who does the Alternate Assessment portfolio truly assess?" The research has indicated that the alternate assessment actually assesses the special education teacher's ability to assemble a passing portfolio rather than the students' actual progress toward grade level standards.

Review of the Literature

Kleinert, Kennedy, and Kearns (Summer 1999) study investigates the perceptions of special education teachers on the perceived benefits and impact of the alternate assessment on instruction. The researchers sent a survey to teachers from Kentucky, the first state involved in the alternate assessment and accountability system for students with moderate and severe disabilities. The method consisted of a one page survey designed to access the teachers' perceptions of their students' need to be part of the accountability system, whether the involvement had any benefits for the students and if the assessment increased the time students were in general education classes. The survey also inquired about the portfolios being incorporated into the daily routine and if the students were

assessing their own progress. The researchers mailed out 508 surveys and 331 were returned.

The results of the survey revealed that a majority of the surveyed teachers perceived the alternate assessment as more of a “measure of teacher accountability than one of student accountability” (p. 89).

This early study validated the hypothesis that teachers feel the alternate assessment is more of a teacher assessment than for the student. The research also found that the focus of collecting evidence of learning situations, skills, grade level standards, across multiple settings with general education peers and supports is an unfair expectation.

In a later study, Kampfer, Horvath, Kleinert, and Kearns (Spring 2001) sent a survey to 206 special education teachers in Kentucky who had completed at least one alternate assessment portfolio for a student with significant disabilities. The Kentucky alternate assessment requires the teacher to document the students’ progress in achieving skills and the efforts made to include the students’ social relationships and to provide evidence of performance across multiple settings.

The survey questioned the perceptions of the teachers on the amount of time and effort spent on completing the alternate assessment. The specific research questions were:

- Is there a relationship between portfolio scores and time spent working on the portfolio?
- Which portfolio items require the most time and effort?
- To what extent do teacher and instructional variables predict portfolio score?
- What aspects of the alternate assessment portfolio are the most concern for teachers? (Kampfer et al, 2001).

The result of the survey found that teachers spend a significant number of hours outside of the regular teaching and planning time to complete each portfolio. The time spent on the portfolio is found to have no correlation to the score received for the student. The survey found that the instructional variables such as student involvement, embedment of portfolio items into the regular instruction in the classroom and the teachers’ perception of the benefit of the portfolio to the student are strongly related to the student scores.

This study, much like the earlier study, has shown that the perceptions of teachers about the value of the alternate assessment and the time involved can affect the score on the alternate assessment.

Flowers, Ahlgrim-Delzell, Browder, and Spooner (2005) researched the perceptions of Alternate Assessments (AA) by teachers in five states. The researchers surveyed 983 special education teachers who used state mandated alternate assessments such as portfolios, checklists and performance-based assessments. The teachers were given The Alternate Assessment Teacher Survey which was designed to test the teachers’ perceptions of the impact of the AA on students, teachers, parents and educational practices. The survey consisted of 65 items with Likert scale replies.

The researchers used descriptive statistics to report the results of the participants' perceptions. The research demonstrated that half of the respondents agreed that students with severe disabilities should be included in the state accountability systems. Yet only a very small percentage felt that students are receiving an overall better education. Like the previous studies the teachers report that completing the alternate assessment takes time away from teaching and student needs. The teachers reported that completing the alternate assessment resulted in increased paperwork especially for those teachers that completed portfolio assessments.

The research indicated that teachers find the alternate assessment especially, portfolio assessments, to be an increased burden of paperwork with little benefit to the education of the student assessed. This is consistent with the hypothesis and previous research.

Roach (2006) studied the influences on parent perceptions of the alternate assessment for their children with severe cognitive disabilities. The researcher surveyed 77 parents and teachers of students with severe disabilities. The researchers found that teachers and parents alike perceive that achieving appropriate outcomes on the alternate assessments are difficult because the grade level content and instruction, even with maximum accommodations and modifications, is irrelevant and out of reach for most students with severe disabilities.

The research found that some parents perceive that an academic standards based alternate assessment takes away from their students' overall educational needs especially those skills that are required for employment and daily living. The research also found that just over half of the parents want to know how their child's progress compares to the general education students but the number decreases as the student ages.

This research helps support the hypothesis that alternate assessments take significant time away from teaching skills that are necessary for independence and employment. Kim, Angell, O'Brian, Strand, Fulk, and Watts (2006) researched the perceptions of teachers in Illinois about the alternate assessment system used by their state. The Illinois Alternate Assessment (IAA) uses a portfolio system that includes teacher-collected and annotated documentation of a students' progress on the grade level Illinois Learning Standards. The researchers surveyed special education teachers who have completed an IAA the previous year. The survey consisted of four sections: 1) teachers' perspectives about the IAA system, 2) teachers' self reported classroom practices, 3) open ended questions related to concerns about and suggestions for improving the IAA, and 4) demographic information. The study was a mixed method with quantitative data gathered using a Likert scale and qualitative data from the open ended questions and responses.

The results of the study both quantitatively and qualitatively are that the teachers perceive the IAA as labor intensive, taking time from instruction, and pointless (p.93). The data also showed that the teachers felt that neither their participation nor the student's participation in the IAA had any benefit to the students' academic progress or the teachers' instruction.

These results continue to support the hypothesis that Alternate Assessments are time consuming and of no real benefit to the student.

Elliott, Compton, and Roach (Summer, 2007) researched the validity of the scores on Idaho's alternate assessment. The researchers looked at the relationship between the ratings on the Idaho Alternate Assessment (IAA) and the ratings on two norm referenced teacher rating scales for 116 students with significant disabilities. The focus of the research was to study if the scores on the IAA had validity.

The validity of alternate assessments has been questioned because previous research has found that the score of some portfolios were influenced by the teachers' ability to assemble the portfolio more than the students' knowledge of the content standards. The previous research on validity and reliability has also found that the portfolio assessment is an assessment of the teachers' ability to compile a portfolio according to the states' guidelines rather than an accurate measure of a student's progress toward IEP skills or the success of a program in giving students with disabilities access to content standards.

The researchers found that evidence to support the validity of the IAA was mixed. The correlations between scores on the IAA and concurrent academic skills scales were moderate at best. The IAA measures some content but the Vineland Adaptive Behavior scale identified more skills because it measures more than reading and math achievement.

This article supports the hypothesis that the alternate assessment may not measure what is intended but actually it is measuring teacher ability.

Elliott and Roach (2007) researched the different types of alternate assessments and found several technical challenges to the validity of the alternate assessments. The researchers looked at the challenges of validating alternate assessments and found that additional research needs to be done to determine the connection to curriculum, effects of participation on the instruction and education of the students, and the usefulness of the results.

These challenges have been identified in previous research. The question that remains is how we can call the portfolio an assessment of student achievement when it is compiled, annotated and completed by teachers with minimal input by students.

Katsiyannis, Zhang, Ryan, and Jones (2007) in their review of the literature for alternate assessments found that requiring students with severe cognitive disabilities to demonstrate achievement and progress in grade appropriate content and standards such as algebra and world history was inappropriate. The literature continues to find that the alternate assessment systems in the various states do not benefit the students with disabilities nor do alternate assessments give teachers, parents and other stakeholders usable information on the progress of the student. The findings continue to point out that even if the assessments are aligned to state standards the alternate assessments do not give an accurate or true level of functioning for the student.

These findings also support the hypothesis that the alternate assessment assesses the teachers' ability to complete a portfolio successfully not the students' progress or knowledge.

Reeves, Kleinert, and Anderman (2008) researched the principals' perceptions of alternate assessments. The participants and their perceptions were compared as part of the research. The participants were a total of 389 principals from the two states that were familiar with the state's alternate assessment. The method was a mixed method study. The principals were given a survey with a Likert type of scale. It also included an open ended question section.

The results from the research found that although principals realized the federal requirements to teach students with severe disabilities grade level content and standards, the principals felt that functional skills were more appropriate and important. The research also found that principals that had more experienced special education teachers felt the dual curriculums of functional and academic were not a problem for their teachers. One state, the author did not identify particular states but used a State 1 and State 2 designation, had a very negative perception of the alternate assessment as a time spender and not relevant to a students' needs.

Elliott, Kettler, and Roach (December 2008) researched the new policy of alternate assessments that assess modified achievement standards for students with disabilities. The policy requires students' achievement in content areas to be assessed on grade level standards. The researchers found that the tests are functioning more as a test modification than a test accommodation. The items, vocabulary and relevance on alternate assessments have been modified and simplified to the point that they do not assess what are actually grade level standards for typically developing students. This research supports the hypothesis that the alternate assessment is time consuming for teachers without results that yield information for the parent, student or teacher.

Weigert (2009) researched the perspectives on the current state of alternate assessments for the US Department of Education and found that there is a lack of knowledge on the best way to assess students with severe cognitive disabilities by test designers and psychometricians. The specialists have very little experience assessing this population on grade level; and content standards when the students are unable to collect annotate or at times communicate their knowledge. The portfolio that has been adopted by many states is assessed with teacher taught, compiled, annotated student work. The teacher assembles and completes the portfolio often with no assistance or input from the student. The research points out the need for significantly assessing students with cognitive disabilities, not the teachers' ability to put together the portfolio.

Reeves, Kleinert, and Muhomba (Winter 2009) conducted a literature to examine the changes in perceptions and the studies of alternate assessments since the first research from 1999. The research continues to reveal that the increase in paperwork and time demands is the most significant impact of alternate assessments according to the attitudes of teachers in five states, identified as only two from the western region of states and

three from the southern states. The alternate assessments have had no impact on the daily instruction of students with disabilities. The alternate assessment portfolio is seen as one more task for the teacher to complete along with data tracking and IEP development. The positive perceptions of alternate assessments decrease as students age and the divide between their cognitive abilities and the expectations of content standards becomes wider. This literature review supports the hypothesis for this paper.

Flowers, Wakeman, Browder, and Karvonen (Spring, 2009) discussed teachers' perceptions of alternate assessments in their research on aligning alternate assessments with alternate achievement standards. The data identified that for special education teachers to "buy in" to alternate assessments they need to see a meaningful link between the academic and functional skills in the curriculum for students with disabilities. Until they see the relevance of the assessment the teachers' perceptions will continue to be negative.

Kleinert, Browder, and Reeves (March 2009) researched the unique learning characteristics of students with significant cognitive disabilities in developing and demonstrating academic achievement on grade level standards. They found that students with disabilities that were assessed using an alternate assessment on grade level content had the following characteristics: 8% had no clear use of words, pictures or objects, 15% had no awareness print or Braille, 13% had no awareness of numbers, yet the students were suppose to be assessed on grade level content performance standards in areas such as algebra, biology and world geography. The focus on academic standards takes time away from teaching students to communicate and functional skills. This disconnect between the students actual ability to access much less meet the standards is one reason teachers perceive alternate assessments negatively.

Tindal, Yovanoff, and Geller (May, 2010) conducted research on the reliability of reading assessments for students with significant cognitive disabilities using receptive and expressive formats. The research found that there is a tradeoff between meaningful participation and accurate measurement of students with disabilities. The research found that the reliability of reading assessments vary across alternate assessment formats such as portfolios, checklists, and performance assessments for students with severe cognitive disabilities.

Previous research has shown that teachers question the reliability and validity of teacher completed alternate assessment portfolios and the present study shows they should be concerned. This concern is a reason some teachers cite negative perceptions of the alternate assessments.

Cameto, Bergland, Knokey, Nagle, Sanford, Kalb, Blackorby, Sinclair, Riley and Ortega (2010) in their report from the national study on alternate assessments found that 52% of teachers felt their students were not aware of the alternate assessment or the meaning of the test. In the study the research found that 54% of teachers felt that students with cognitive disabilities did not benefit from inclusion in the accountability system (p. 69).

The research found that a strong majority, 71%, felt the alternate assessment scores are not reflective of students' actual progress (p.68).

This research study consisted of a survey that was piloted, revised and given to over 400 special education teachers who completed alternate assessments in the spring of 2009.

The survey and the accompanying demographic questionnaire were then analyzed.

Conventional frequency distributions were calculated for each survey question. The report shows that the majority of teachers feel that alternate assessments are time consuming and an additional paperwork requirement that offers little benefit to students.

Conclusions and Discussion

This literature review supports the hypothesis that teachers perceive the alternate assessments for students with significant cognitive disabilities most significant impact as the amount of time and paper work required for the teacher to complete the assessment and portfolios. The impact of the alternate assessment will continue to be on a teachers time and resources that could be better spent on activities that promote self care, independent living and work readiness skills

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***Exploring Transition Education and Community-Based Instruction for
High School Students with Disabilities: A Practice in Taiwan***

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Abstract

Research indicates that transition education contributes to forming a long-term support to high-school students with disabilities for their adult life. Also, Community-Based Instruction (CBI) which is a preparation of vocational skills and awareness, has its positive influences improvement of self-esteem as result of higher work inclination and employment. A car-washing curriculum of a CBI practice created an “acquisition-rich” environment” with the Scaffolding Theory in one high school located in Taiwan and brought about the mutual connection between the school and a local community. The educational implementation had yielded its benefits because of the emphasis of transition education and CBI. In this case, car-washing as a CBI facilitated student-initiated learning which promoted intellectual disabled students’ vocational skills, awareness and self-efficacy and became a critical role between a school and a community.

Introduction

The notion of transition education has a central place in the accountability of each special education level in the United States (National Organization on Disability [NOD], 2000). With effortful promotion of special education, much more federal legislations clearly articulate the commitments to persons with disabilities for the provision of an individualized transition education program (NOD, 2000). The concern of transition education is a broader scope of prospects which is supposed to encompass all the levels of disabilities and considers how schooling could provide and connect appropriate educational content to students with disabilities as a result of independent adult living in this society (IDEA, 2004). On the other hand, based on the belief of this seamless transition, what it emphasizes is a long-term support service which determines successful role-transition in post-school education, household management, and community participation (Certo et al., 2008; IDEIA, 2004; Test, 2008). Those expected outcomes need more effort from school systems and other corporate organizations to provide opportunities of hands-on experiences and supported employment for transition-age youth with disabilities (Phillips et al., 2009; Sabbatino & Macrine, 2007). Community-Based Instruction (CBI) is an effective intervention in combination with transition related activities for future successful transition such as average wage, long-term employment and so forth (Chen, Liu, & Lin, 2008; Sabbatino, & Macrine, 2007). The ideas about CBI to facilitate transition services and descriptions of CBI practice in a Taiwan’s high school are exemplified by the following paragraphs:

The Connotation of Transition Education

More recently, an interest in high-school level transition education has shifted to reflect current developments of integrating career education, special education, vocational education, and vocation rehabilitation in the states (Li, Bassett, & Hutchinson, 2009; Sabbatino & Macrine, 2007). In 1997, the Individuals with Disabilities Education Act (IDEA) stated that transition services identified in student's Individual Education Program (IEP) are necessary for each student with disabilities by age sixteen so as to provide sufficient access to experiences of a workplace. Also, NOD (2000) and IDEA (2004) legislate to inspect not only academic performance and functional achievement but also to facilitate movement from school to post-school activities. Their goal is to provide the right of education, the capability of independent living, and self-efficiency economy. In 2004, the Individuals with Disabilities Education Improvement Act (IDEIA) pointed out that real postsecondary education, employment, and independent living outcomes should be included for forming a long-term support to ensure successful transition.

Apparently, the emphasis of the transition education in recent years has increased noticeably. However, in a survey for investigating the employment gaps of individuals with disabilities and without disabilities by NOD (2000), the findings indicated that after the 24 years efforts of ADA (since 1986), the experiences of part-time or full-time jobs for persons with disabilities aged 18 to 64 years old was only 32% compared to 81% of those without disabilities. It showed a gap of 49 percentage points. After 4 years of effort, NOD (2004) investigated the same population for employment rate of the working-age range of 18-64 years. It showed that 35% of persons with disabilities in that age group were employed, in comparison to 78% of those without disabilities. From the latest survey by NOD (2010), only 21% of individuals with disabilities were employed for full or part-time job, compared to 59% of people without disabilities; namely, a gap of 38 percentage points. As a result, as time went on, the gap decreased from 49%, 43% to 38%. It remains large but narrows with growth rates gradually.

Morgan, Ames, Loosli, Feng, & Taylor, (1995) surveyed the 20-state employment providers in the priority of how to matching the job to individuals with intellectual disability (ID). The findings of the total 210 identified either direct training staff or supervisory staff demonstrated that there were six ranked training priorities which benefited the movement from school to career, as shown below: (a) matching the job to the applicants, (b) gathering information about job prospects, (c) encouraging family support, (d) marketing the student, (e) strengthening appropriate social behavior, and (f) strengthening job skills. Generally speaking, it implied two key points, the role position and the degree of functioning of human power in the process of transition services. For example, according to IDEA, the role of providing a transition service is required for students with disabilities. Furthermore, both special education teachers and transition coordinators are obligated to furnish any related vocational instructions or rehabilitation needed, those of which must be identified in each student's IEP. In reality, a study evaluated 68 high-school IEPs and found that a small number of goals were to develop interdependent living skills, transition to employment (Shearin, Roessler, & Schriener,

1999). Only 7% of IEPs clearly stated that vocational rehabilitation was to be provided. On the other hand, special education teachers are endowed with more responsibility of providing transition services (Zhang, Ivester, Chen, & Katsiyannis, 2005).

Yet some studies showed that the lack of transition knowledge and community service was found, including the way of interagency collaboration, transition assessment and so forth (Li, Bassett, & Hutchinson, 2009; Zhang et al., 2005). The gap existing in the different role-transition and self-responsibility for special education teachers and transition coordinators impacts on the future involvement of transition services. According to, educators with dual roles have much more capabilities of providing appropriate transition services than those with either role. It indicated that both pre-service and in-service like interagency collaboration, assessment knowledge and other communication skill training is of benefit to transition services (Zhang et al., 2005). The role of special education teachers is to make students understand their strengths, to provide career development and inclusive environment, to develop interagency collaboration and to seek fitting employment for them (Phillips et al., 2009).

As a Principle of Community-Based Instruction (CBI) for Transition Education

To employ Community-Based Instruction (CBI) is a critical point in connection with outside recourses (Chen et al., 2008; IDEA, 2004; Sabbatino, & Macrine, 2007). In the case of the Start on Success (SOS) project, after students with disabilities involved in CBI as a principle, the improvement of attendance, self-esteem, work ethic, economics, self-determination, and stable employment was found (Sabbatino, & Macrine, 2007). In addition to students' significant development, the staff, university students, hospital employees, patients and mentors in the collaborated organizations acquired augmented understanding of how to get along with individuals with disabilities. Several studies (Benz, Lindsrrom, & Yovanoff, 2000; Carter et al., 2010) have noted that working experiences in high schools were a significant predictor of post-school employment performances due to a large extent to such prior experiences which shaped the values of vocational awareness, expectation, and related knowledge and skills (Vondracek, & Porfeli, 2003). In consequence, the use of CBI for preparation of employment for students with disabilities should be of crucial importance for creating an "acquisition-rich" environment (Carter et al., 2010). What follows here are the features of CBI (Chen et al., 2008).

1. *Progressiveness*: For transition education, this skill-oriented and result-oriented teaching material has its potential breadth of deepening inside and connecting with a community (Phillips et al., 2009). Several teaching instructions used in case of severe disability are constituted by an order; that is, community-simulated instruction, community-referenced instruction and community-based instruction. Look into the process, and it is a progressive process from classroom to community (Chen et al., 2008).
2. *Functionality*: Functionality means practicality. Skills attempting to be taught are what people could use in the natural setting (Li et al., 2009). For instance, in the

period of time between home to work, those skills such as commuting, clocking in, and greeting, should be done without assistance. In other words, practical skills could have their immediate function in their natural contexts (Li et al., 2009; Neubert, & Moon, 2006).

3. *Supportability*: Throughout CBI, the emphasis is placed on transition education planning for students with disabilities. CBI plays a salient role in the transition from a school stage to semi-independent/independent adult stage (Estrada-Hernandez, et al., 2008; Sabbatino, & Macrine, 2007). It is very supportive to vocational training in this population.
4. *Ecology*: A community-based setting highlights interaction between students and other individuals. None of these three factors such as place deciding, preparation for a course, and skill planning under a specific moment can be excluded. Hidden curriculum happened most at this point; that is, the observation-discovery method employed is very informative for an educator to gain more student-centered understanding as a customized transition (Phillips et al., 2009; Rogers, Lavin, Tran, Gantenbein, & Sharpe, 2008).

An Education Reform of CBI: A High School's Experience in Taiwan

As noted previously, the importance of Community-Based Instruction (CBI) can hardly be overestimated in the United States. By the same token, such CBI is recommended to be utilized in Taiwan's education context (Taiwan Elementary and Secondary Educator Community [TESEC], 2001). This Education reform and development are continually progressive processes. In the past, when it comes to education reform, educators had expected teaching reform, for example, energetic teaching, normalized teaching, rather than curriculum reform because teaching related reform was easier to execute at the starting point (TESEC, 2001). In 2001, Grade 1-9 Curriculum policy turned over a new leaf to the whole Taiwan Education system (TESEC, 2001). Education in Taiwan, including normal education and special education, had more emphasis on curriculum reform since 2001 and attempted to substitute curricular standards for curriculum guideline. This new trend of education reform focuses on release of authority and returns the power of curriculum planning back to schools and educators for appropriateness of learning. More specifically, the purpose of Grade 1-9 Curriculum is to offer appropriate learning courses, to help teachers to develop self-growth in career, to make administrators involved professionally, and to promote family involvement (TESEC, 2001).

In response to Grade 1-9 Curriculum, the purpose of revision in Special Education (SPED) develops another thinking based on adequate opportunities and full access to the normal education adjusted in the structure of overall SPED curriculum (Special Education Policy Taskforce [SEPT], 2007). Instead, the 12-year education replacement for students with disabilities takes place in connection with all levels and all types of special education replacement. Apparently, according to Lin (2003) and SEPT (2007), the execution of this educational policy is derived from the concept of transition education,

which highlights the last year of each school level, so as to facilitate the SPED curriculum and to guide special education teachers as a result of CBI as a major approach for transition education.

In general, according to General Principles of Special Education Curriculum (2006) of the Ministry of Education (MOE) in Taiwan, the rationales can be seen such as follows: (1) in connection of inclusive education to normal education, special needs of individuals' curriculum which is based on normal education curriculum must be a primary consideration; (2) functional curriculum or remedial curriculum for students with special needs follows the implementation of student-based, school-based, and community-based curriculum; (3) according to special education students' demands, area objects of curriculum are flexibly adjusted by means of increased depth, increased breadth, reforming, simplifying, reducing, breakdown, or substitute; and (4) implementation of individualized educational plan to merge completely into curriculum and enhance supervisory and administrative management in curricular execution.

In a 12-year academic period, special education educators work in tandem to make transition successful to the next stage (MOE, 2006; Lin, 2003; SEPT, 2007). When students with disabilities leave school, how much effort does the schooling offer in connection to the community? No one would expect that social inclusion leads to societal exclusion (Phillips et al., 2009).

Based on successful employment in a community, individuals with disabilities can work in the competitive labor market or other sheltered environments; more than that, empowerment in self-determination was improved because of positive independent living (Estrada-Hernandez, Wadsworth, Nietupski, Warth, & Winslow, 2008). In the face of much complicated technology changes and mandated standards that students have to meet, the complexity of the commission teachers face increases further (Neubert, & Moon, 2006). Undoubtedly, CBI as a principle is vital to the functioning of the transition services (Estrada-Hernandez et al., 2008; Sabbatino, & Macrine, 2007; Test et al., 2009). Therefore, an actual practice of CBI should be available for high school students with disabilities. In order to shed light on the importance of CBI, the following are descriptions of a practice of CBI in a high school located in Taiwan: (1) curriculum design, (2) curriculum framework, and (3) the outcomes.

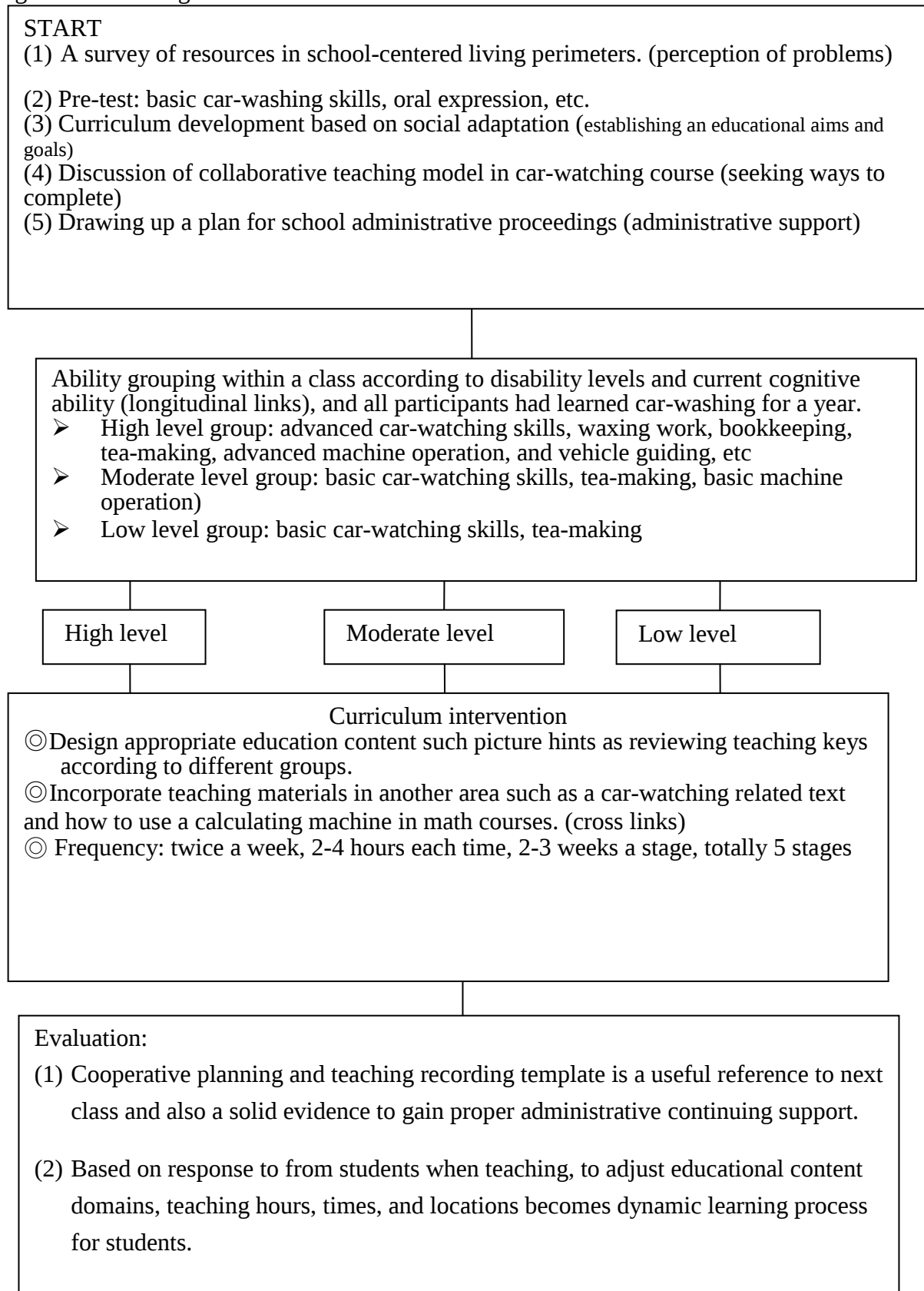
Curriculum Design

The curriculum was based on the Scaffolding Theory by Wood, Bruner, & Ross, (1976). Teachers have to employ a series of discussion and learning sheets as a scaffolding support; namely, a process of problem solving will be created in scaffolding. For example, after two stages of learning these car-washing courses, students came up with a "positive" idea so that they were willing to distribute leaflets in the nearby community as a marketing approach. Also, in a problem solving context, social-construction as cooperation learning with heterogeneous grouping boosts potential to the best of each student (Wood et al., 1976). Learning is a process of self-construction; teachers take part in a field survey before the curriculum begins. Furthermore, the field survey is regarded

as an initial ecosystem investigation. Based upon those collected domestic experiences from the field survey, to scaffold an organized instructional design and to make students follow it through would offer a macroscopic local experience and induce evocative, domestic concepts to students with special needs (Wood et al., 1976).

Moreover, Beart, Hardy, & Buchan, (2004) proposed that the concept of “learning by doing” promotes a member’s self-concept in this group. It implicates that much more meaningful knowledge is constructed and makes students explore actively so as to become a self-advocating individual. Through public participation along with the concept of self-advocacy heightens their sense of community and local identification (Li et al., 2009). Ultimately, such CBI transition education echoes the statement that sustaining disabled individuals in the comparative labor market is based on successfully public participation and community working experiences (Estrada-Hernandez et al., 2008). For these reasons, after ecological survey, the car-washing curriculum was employed for CBI practice (See: Fig.1).

Fig. 1: Car-washing curriculum flow chart



Curriculum Framework

The curriculum plan consists of five parts. Stage 1 is “Car-Washing is So Easy”, and the aim is to realize the current basic skills and acknowledge things such as car body structures, process of cleaning a car, and so forth. The second stage is “A Good Manner is Everything.” The service skills include how to brew up tea when guests come, how to act decently, to help customers when the guests wait for car-washing work, and to give change by using a calculator. Moreover, the third stage, “Better than the Best”, emphasizes advanced machine operation skills such as high-pressure injectors, wax-polishing machine and how to guide a car to the appointed site. The following stage, “One Dollar for One Car”, starts to market students’ operation services. The slogan “One Dollar for One Car” was functioning to attract school colleagues’ attention and made them come over to experience students’ car-washing services. In this stage, educators not only stimulate real operation models but also provide feedbacks to students and then ameliorate shortcoming in the field.

Finally, “Marketing Ourselves, and We Are the Best”, the fifth stage puts out the feelers to the nearby community. The teachers and the students distributed handbills together in the neighborhood as a demonstration of what they learned in the past several weeks. By the same token, obtaining feedbacks from outsiders such as residents is always better than the best and is considered as predominant evidence to allow the curriculum to endure. As shown in Figure 2, the five stages were comprised of different goals.

Fig. 2: Car-washing curriculum framework

Stage & Themes	Goals	Instruments & Resources	Strategies & Skills	Assessment
Stage 1. Car-Washing So Easy : how to wash a car	1. Make well use of cleaning tools.(brush for tire, sponge for car body, etc.) 2. Realize a cleaning process(e.g., from wetting a whole car as a start and then clean a roof)	Computers, Conspicuous picture cards, real objects, practical operation, reinforcers, etc.	*MI, **DI, ***MsL, incidental teaching method	Identifying, Orals, Written or operational Test, (individually dominant learning style)
Stage 2. A Good Manner is Everything: Service skills	1. Tea selection and how to know water boiling. 2. Proper Behavior when a car coming. 3. Use a calculator to give a change.	Computers, Conspicuous picture cards, real objects, reinforcers, etc.	MI, DI, MsL, incidental teaching method (principle of flexibility)	the same as above (principle of flexibility)
Stage 3. Better Than The Best-- Advanced skills--	1. Advanced skills in waxing and machine operation 2. How to guide a car inside 3. Safety education 4. realization of community needs	Computers, Conspicuous picture cards, real objects, practical operation, reinforcers (oral rewards), etc.	MI, DI, MsL, incidental teaching method (principle of flexibility)	the same as above (principle of flexibility)
Stage 4. A Dollar for A Car-- commercial trial, implementation of car-washing service in school	1. Educational simulation (including risk managements) 2. Motivational Enhancement 3.Importance of discipline	Practical operation, reinforcers (material, oral rewards,), etc.	MI, DI, incidental teaching method (principle of flexibility)	The same as above (principle of flexibility)
Stage 5.	1. Motivational	real objects,	MI, DI	the same as

Marketing Ourselves We Are The Best--- Community practice, implementation of car-washing service for community	Enhancement 2. Importance of discipline 3. Importance of Continuity	practical operation, reinforcers (material , oral rewards), etc.	(principle of flexibility)	above (principle of flexibility)
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* Multilevel Instruction (MI): A teaching material woven with instructional strategies fits individuals in a class. **Direct Instruction (DI): concrete steps or ways to provide teaching directly related to teaching goals. ***Multi-Sensory Learning (MsL): A focus on materials of vision, listening, motive, touching. By MsL, students absorb information from their strengths.

The Outcomes of Implementation

Careful planning, which consisted of addressing needs and resources, caused successful education implementation (Ornstien & Hunkins, 1998). In this car-washing curriculum, teachers adopted heterogeneous grouping to arrange cooperative learning because students with different intelligence can exploit their advantages to the fullest. For example, students with higher oral expression are responsible for reception of visitors; students with less oral expression but higher operational skills could do a great job in car-washing work (e.g., washing car body). So, inside a team with different scaffoldings, that was by far the best efficacy because students can learn from cooperation which leads to fulfilling a task (Wood et al., 1976). However, students sometimes complained that somebody was not serious about the class; it was a real scenario that everyone, not only intellectual disabled students, would face. In this car-washing program, there were some positive outcomes described as follows which may encourage a school developing a similar CBI program:

1. Set up access to increase the exchange of community resources

Advocate for more money for decoration such as color painting for improvement of environmental space. Such environmental space helps to tear down the wall between schools and nearby residents, make residents realize what special education did in school, and then promote the more solid bond with the community.

2. Make use of community resources

Manpower plays a large component of implementation in this case such as school volunteers, retired teachers, and parents' association. The utilization of CBI and the introduction of human resources complemented each other. Less CBI means less human resources from the community. For example, because of news reporting, one customer drove for one hour in order to let the students with intellectual disability actually practice car-washing service with their sincere attitudes.

3. Development of teachers and students.

(a) Development of students:

After a semester of CBI, they had a large leap in cognition, operational skills and motivation participation. Surprisingly, they tried to conceive what was good for their performance such as car-washing skills and tea-making. For example, some of the feedbacks from customers mentioned that the tea tasted too sweet or too strong. Students started to reflect the practice process and asked the teacher questions about how to decrease the sweet taste and how to get weaker tea. On the other hand, peer learning appeared more conspicuous there. In the IEP meeting at the end of term, the feedback by parents all indicated that their children seemed more positive and more sensible to their performance than ever before. Additionally and interestingly, the hidden curriculum was happening during this class. Students, teachers and other staff grew together without stopping. All of them expected the class to be better than ever. From this implementation of CBI, the turning point of learning improvement did not come from insiders (e.g., students and teachers) but from the outsiders (e.g., the customers and residents). Hence,

students did more and more from their own motivation. As a teacher, offering the needed support and giving them a try to see what they could acquire afterwards is a representation of self-efficacy. Whether they succeeded or not, the teachers were always watching them focusing on the meaningful curriculum.

(b) Development of teachers:

Based upon a teacher's curiosity and 6W (e.g., how, what, when, who, why, where), practitioners learned from the process of seeking values of CBI and narrowed down the core value of CBI toward students' needs, as illustrated below:

- How to connect to the community? Visiting the head of a basic community unit and making leaflets to residents will contribute to promoting more residents' understanding of special education values.
- What kind of learning goals should be emphasized? Teachers should consider appropriate domestic features which could be integrated into related challenging courses.
- When was the good timing to market special education? To create an inviting slogan with presentation of both people's sensibilities and students' diligence to colleagues and residents is critical to provide interaction.
- Who was our object client? To dispatch official documents to public organizations such as different school levels and to advocate the car-washing site as a good place for inclusive education where students with ID are glad to show their best performance to visitors would be a greater mutual benefit for all of them.
- Why students needed CBI curriculum? Was that a good aspect of giving living skills? Self-reflection continued for the duration of the semester, even though other teachers thought that the practitioners for car-washing curriculum were doing too much. For instance, they took students into the nearby community, and came by important administrative staff in order to gain commitment.
- Where should be an optimal place to give CBI lessons? Not a regular place but a more proper one which fits ongoing curriculum and an ecological context. For example, teachers did not merely expect their students to use the same skills in different places but also wanted them to gain overall hands-on experience from the entire course. Throughout the process of guiding students, the teachers were surprised about the motivation participation because of amazing potential by interactions between students and residents. That later influenced and re-constructed the teachers' conception of teaching.

Discussion and Suggestions

Based upon the practice of CBI, what follows are the suggestions:

1. To appeal to vocational institutions, industrial communities, and related local associations to collaborate with school systems and make it closer to each student's work inclination and belonging community.

2. To promote vocational and operational skills for special education teachers is necessary to provide actual competitive skills in the labor market or other sheltered environments for their students with disabilities.
3. Seldom does research focus on a specific vocational skill in CBI practice in a high school and how it relates to the future working career. A follow-up investigation is needed.

Conclusion

The effects of implementation of CBI may cause a series of unexpected factors because of these four screens (community, students, educational environment, & educators), so that it is not more likely to accomplish original expectations of teaching aims (Saylor, Alexander, & Lewis, 1981). Any implementation and educational measures have been impacted by educational contexts, teaching materials, educators' characteristics and students' current conditions. Hence, the responsibility of educators is to meet the needs of students, especially for those with disabilities. The practical process of car-washing also came about not only prospective goals but also brought surprising performances. In a feasible CBI, educators must self-reflect entry behaviors, interests, motivation, and adjust instructional approaches so as to close the gap between operational curriculum and formal curriculum.

In a nutshell, students with disabilities, who have working experiences, will foster work inclination after graduation (Rabren, Dunn, & Chambers, 2002). Indisputably, CBI is an important bridge between competitive labor work and sheltered workshops. Seeking the possibility of creating an "acquisition-rich" environment for transition-age young adults with disabilities is the priority in transition education (Carter et al., 2010). Thus, the only thing which is never changed is that all the actual educational measures have to place much more emphasis on the connection between students and the community; namely, the imperative purpose of CBI is to make students with disabilities engaged in the context for inclusion. One of the best ways to promote transition education is to put less emphasis on teacher-based thinking and to put more emphasis on the benefits of CBI toward students with disabilities. As a result, the students will have higher chances of success in their future adult life.

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Correlates of Attitudes Toward Academic and Physical Inclusive Practices for Students with Disabilities and Selected Leadership Behaviors Among Middle School Principals in North Carolina

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Abstract

The purpose of the study was to examine the relationship between attitudes toward academic and inclusive practices for students with disabilities and selected leadership behaviors (transformational and transactional) among principals in North Carolina. Participants for this study were randomly selected middle school principals from public schools in North Carolina. This study used a one-group, correlational design, using two instruments. The results of this study found a significant relationship between academic and physical inclusive practices and transformational leadership behaviors, $r(75) = .320$, $p < .01$). However, no significant relationship was found between academic and physical inclusive practices and transactional leadership behaviors, $r(72) = -.068$, $p < .05$. The findings for this study suggest that the more North Carolina middle school principals demonstrated transformational leadership behaviors, the more positive their attitudes were toward academic and physical inclusive practices for students with disabilities.

Introduction

Inclusive education of students with disabilities is the integration of students with special needs with their typically developing peers. This integration of students with disabilities occurs in a regular education setting in the student's neighborhood school to the maximum extent appropriate with the use of supplemental aids and services, as needed (Hallahan & Kaufmann, 2003). The definition of inclusion can vary from state to state or even school to school. Although current legislation, The Individuals with Disabilities Education Act (IDEA), does not use the term inclusion, the law does require that school districts place students with disabilities identified for services under IDEA in the least restrictive environment (LRE) (Wrightslaw, 2006). LRE refers to an educational setting in which students with special needs receive a free appropriate public education (FAPE) which meets their needs while being educated alongside their typically developing peers in the regular education setting to the maximum extent appropriate (Least Restrictive Environment Coalition, 2006).

Determination of a student with a disability's LRE must be conducted on a case by case basis. When implementing LRE provisions, the regular classroom in the student's neighborhood school must be considered the first placement prior to considering a more restrictive placement. If the regular classroom with appropriate support services is not an

option for a student with special needs, a continuum of services is then examined for an appropriate placement that will meet the requirements for his or her LRE.

Research suggests that students with disabilities are currently more often taught in general education classrooms with the help of additional supports and services (inclusion)(Praisner, 2003). As a result of an increase of students with disabilities being educated in their least restrictive environment (LRE), school leadership roles have taken an alternative direction. Principals are now required to have an understanding of each of the disabilities, characteristics unique to the disabilities, and how to lead this 2 population of students effectively, not as disability groups, but rather as part of the mainstream (Praisner, 2003). Principals are essential in making inclusion work in their buildings (Parker & Day, 1997; Quigney, 1996; Smith & Colon, 1998). Inclusive models are growing in popularity, and this movement shows no sign of regression (Daane, Beirne-Smith, & Latham, 2000). Learning more about principals' leadership behaviors and how they impact their attitude toward inclusion becomes highly relevant as diversity in education gains momentum (Daane et al., 2000, Ingram, 1997).

The term "leadership" has been defined by many persons (Howard, 2004). Leadership has been defined as "the ability to step outside of the culture...to start evolutionary change processes that are more adaptive (Shein, 1992, p.2). Owen (1996) stated that leadership "is a process of involving dynamic interaction with subordinates...satisfying the needs of a group...and accepting responsibility. The origins of effective leadership stem from the business world, where a long-standing and well-developed belief exists in the leaders' ability to transform elements such as character, performance, and profitability of their companies (Barker, 2001). Leadership is often measured in terms of consequences of the leaders' actions for followers and stakeholders. According to Yukl (2002), the most commonly used measure of leader effectiveness is the extent to which his or her organizational unit performs its task successfully and attains its goals.

Effective leadership behaviors have been associated with communicating a vision (Dyal, Flynt, & Bennett-Walker, 1996). Moreover, an effective leader and manager in the educational arena are described as visionary and whose subordinates follow his lead. The ability of the school leader to provide meaning and direction to his subordinates has also proved integral to his overall effectiveness (Bennis, 1997). According to Hargreaves (2004) and Ingram (1997), effective school reform, which is similar to what is required to lead an inclusive school, requires visionary leadership.

Purpose of the Study

The purpose of this study was to examine the relationship between attitudes toward academic and physical inclusive practices for students with disabilities and selective leadership behaviors among middle school principals in North Carolina. Academic inclusive practices are practices involving students with disabilities participating in an academic curriculum in regular classes. Physical inclusive practices, on the hand, refer to the placement of students with physical disabilities in regular education classes (Wilczenski, 1993). For the purposes of this study, selective leadership behaviors are

defined as transformational and transactional. Transformational leadership behaviors include leaders talking about their beliefs and visions and how they can be attained. Conversely, transactional leadership behaviors focus on leaders motivating followers by appealing to their own self-interests and the accomplishment of tasks and good worker relationships in exchange for desirable rewards (weLead, Inc., 2003, para. 1).

Methodology

This study employed a one-group, correlational design, using two instruments: Attitudes Toward Inclusive Education Scale (ATIES) (Wilczenski, 1993) and The Multifactor Leadership Questionnaire (MLQ – 5x short) Leader Form (Bass & Avolio, 2004). The ATIES measures attitudes toward inclusion of students with disabilities in the regular education setting. It is comprised of four measurable constructs – physical, academic, behavioral and social (Wilczenski, 1993). Reliability coefficients for the four dimensions were found to range between .82 for an individual factor to .92 for a total score as assessed by Cronbach’s alpha (O’Rourke & Trigiani, 2003). The author, however, reduced her tool to only those items that contained a factor loading of .55 or higher. Internal consistency was determined by factors possessing the following reliability coefficients: Dimension I (Physical): .83; Dimension II (Academic): .84; Dimension III (Behavioral): .87; Dimension IV (Social): .82; and Total: .92

Although Wilczenski’s instrument examines four dimensions of inclusion accommodations: physical, academic, behavioral, and social, this study examined only two of them (academic and physical). Four items were included to measure each of the two dimensions (academic and physical) for a total of 8 items. The academic dimension is comprised of Items 1, 5, 11, and 13. The physical dimension is comprised of Items 3, 7, 10, and 14. For example, participants were asked to respond to the statement, “Students whose academic achievement is 1 year below the other students in the grade should be in regular classes” (Wilczenski, 1993). Participants responded to the statement using one of six forced-choice responses. This Likert-type response format provides favorability ranges from strongly disagree to strongly agree. The rating scale is: 1 means strongly disagree; 2 means disagree; 3 means disagree somewhat; 4 means agree somewhat; 5 means agree; and 6 means strongly agree. Therefore, if a participant rated the statement, “Students whose academic achievement is 1 year or below the other students in the grade should be in regular classes” with a 6, it meant that he or she strongly agreed with this academic inclusive practice. Conversely, if he or she rated this item with a 1, it meant that he or she strongly disagreed with this academic inclusive practice.

The MLQ has been used to determine leadership type on scales of different characteristics and is based on a Full-Range Leadership Model. The leader form asks participants to rate themselves evaluating how frequently they participated in specific leadership behaviors. For example, a principal may be asked to respond to and rate his behavior with respect to the following statement, “I spend time teaching and coaching” (MLQ-Leader Form). Using a five-point Likert scale, participants rated the frequency of his action related to the stem. The rating scale is: 0 means not at all; 1 means once in

awhile; 2 means sometimes; 3 means fairly often; and 4 means frequently, if not always. In other words, if a principal rated the item “I spend time teaching and coaching” with a number 3, it meant that he or she displayed this particular transformational leadership behavior frequently, if not always. On the other hand, if a principal responded to the statement with a 0, 1, or 2, it meant that the transformational leadership behavior in question was not demonstrated very often.

The researchers only examined questions that assessed transformational and transactional leadership behaviors. The transformational scale on the MLQ included items: 2, 6, 8, 9, 10, 13, 14, 15, 18, 19, 21, 23, 25, 26, 29, 30, 31, 32, 34, and 36. The transactional scale included items: 1, 3, 4, 11, 12, 16, 17, 20, 22, 24, 27, and 35.

Results

Attitudes toward inclusive practices scores were derived from designated items on the ATIES. Transformational leadership behaviors were derived from designated items on the MLQ. The Pearson Product Moment Correlation was used to determine if there was a relationship between attitudes toward academic and physical inclusive practices and transformational leadership behaviors among middle school principals in North Carolina. In the case of these selected inclusive practices and transformational leadership behaviors, $r(75) = .320, p < .01$. Therefore, a significant relationship was found between attitudes toward academic and physical inclusive practices and transformational leadership behaviors among middle school principals in North Carolina (see Table 1).

Table 1

The Pearson Product Moment Correlation Coefficient Model for Inclusive Practices (academic and physical) and Transformational Leadership Behaviors

	Inclusion
Transformational	.320** .005 75

Note. ** Significant at the 0.01 level (2-tailed)

Correlation coefficients were computed among all transformational leadership behavior items on the MLQ and the academic and physical items on the ATIES. Although this study’s purpose was not to analyze on a per item basis, statistically significant inter-item correlations were noted as seen in Tables 2 and 3. The results suggest that the more that principals displayed transformational leadership behaviors, the more positive their attitudes were toward these selected inclusive practices.

Pearson r correlations were computed between all transformational leadership items (20) from the MLQ and all academic (4) and physical (4) items from the ATIES. Five transformational leadership behavior items from the MLQ and three items from the physical dimension of the ATIES resulted in five statistically significant inter-item correlations, as seen in Table 2. The transformational leadership behavior indicating that participants treat others as individuals was found to be significantly correlated to the attitude that students who cannot move without help should participate in inclusion, ($r(97) = .291, p < .01$). The most statistically significant correlation between a transformational behavior item and the physical dimension of the ATIES ($r(96) = .324, p < .01$) was found between the items. One significant correlation suggesting an inverse relationship was revealed between re-examining critical assumptions to question whether they are appropriate and students who use sign language or communication boards participating in regular classes ($r(96) = -.258, p < .05$). The transformational leadership behavior of going beyond self-interest for the good of the group was also significantly correlated to students who are unable to hear conversational speech in regular education ($r(98) = .285, p < .01$). Similarly, a statistically significant correlation was found between the transformational behavior of individuals displaying a sense of power and students who use language and communication boards being in regular classes ($r(98) = .22, p < .05$) (see Table 2).

Table 2

Correlational Matrix for Attitudes Toward Inclusive Education: Physical Dimension: (ATIES – Items 3, 11& 14) and Transformational Leadership Behaviors

	Item 3		
19. I treat others as individuals rather than just as members of the group.	.291**		
31. I help others to develop their strengths.	.324**		
	Item 11	Item 14	
2. I re-examine critical assumptions to question whether they are appropriate.	-.258*	.285*	
18. I go beyond self-interest for the good of the group.	.285**		

25. I display a sense of power and confidence. .255*

Note. **Significant at the 0.01 level (2-tailed); Significant at the 0.05 level (2-tailed)

Four transformational behavior items from the MLQ and two items from the academic dimension of the ATIES resulted in four statistically significant inter-item correlations, as seen in Table 3. Statistically significant correlations centered around the attitude that students who are either 1 or 2 years behind in the grade should be in regular education classes. The transformational leadership behavior indicating that the participant talks about his or her most important values and beliefs was significantly correlated to the attitude that students whose academic achievement is 2 or more years below other students in the grade should be in regular classes ($r(98) = .273, p < .05$). The transformational leadership behavior of specifying the importance of having a strong sense of purpose was significantly correlated to the attitude that students whose academic achievement is 1 year below the other students in the grade should be in regular classes ($r(97) = .281, p < .01$). Furthermore, the same attitude toward inclusive practices was significantly correlated to the transformational leadership behavior of going beyond self-interest for the good of the group, ($r(96) = .368, p < .01$). The same attitude toward students whose academic achievement is 1 year below the other students in the grade was also determined to be statistically significant to the transformational leadership behavior suggesting that the participant considers an individual as having different needs, abilities, and aspirations from others ($r(97) = .435, p < .01$).

Table 3

Correlational Matrix for Attitudes Toward Inclusive Education: Academic Dimension: ATIES – Items 1 & 5 and Transformational Leadership Behaviors

	Item 1	Item 5
Item		
6. I talk about my most important values and beliefs.	.273*	
14. I specify the importance of having a strong sense of purpose.		.281**
18. I go beyond self-interest for the good of the group.		.368**
29. I consider an individual as having different needs, abilities, and aspirations from others.		.435**

Table 3 (continued).

Note. **Significant at the 0.01 level (2-tailed); *Significant at the 0.05 level (2-tailed)

The Pearson Product Moment Correlation Coefficient was used to determine if there was a relationship between transactional leadership behaviors and attitudes toward selected inclusive practices (academic and physical) as seen in Table 4. In the case of transactional leadership behaviors and attitudes toward selected inclusive practices, $r(72) = -.068, p < .05$. Therefore, it was found that no significant relationship existed between North Carolina middle school principals' transactional leadership behaviors and attitudes toward academic and physical inclusive practices for this study.

Table 4

The Pearson Product Moment Correlation Coefficient Model for Inclusive Practices (academic and physical) and Transactional Leadership Behaviors

	Inclusion
Transactional	-.068
	.569
	72

Correlation coefficients were computed among all transactional leadership behavior items on the MLQ and all items on the ATIES. A p value of less than .05 was required for significance. Pearson r correlations were computed between transactional leadership behavior items (12) on the MLQ and the academic (4) and physical items (4) on the ATIES instrument. For organizational purposes, data were organized by dimensions of the ATIES. Some of the relationships were negatively correlated, therefore indicating inverse relationships. Three transactional leadership behavior items from the MLQ and three items from the physical dimension of the ATIES resulted in three statistically significant inter-item correlations, as seen in Table 5.

Table 5

Correlational Matrix for Attitudes Toward Inclusive Education: Physical Dimension: ATIES – Items 3, 7, & 11 and Transactional Leadership Behaviors.

	Item 3	Item 7	Item 11
11. I discuss in specific	.306**		

	terms who is responsible for achieving performance targets.		
20.	I demonstrate that problems must be chronic before I take action.	.387**	-.368**

**Note. Significant at the 0.01 level (2-tailed)

The transactional leadership behavior indicating that the participant discusses in specific terms who is responsible for achieving performance targets was significantly correlated with the attitude toward inclusive practices suggesting that students who cannot move without help from others should be in regular classes ($r(98) = .306, p < .01$). Similarly, the transactional leadership behavior indicating that the participant demonstrates problems must be chronic before taking action was significantly correlated to the attitude that students who cannot read standard print and need to use Braille should be in regular classes ($r(97) = .387, p < .01$). The same transformational leadership behavior item was inversely correlated to the attitude toward inclusive practices. One transactional leadership behavior item from the MLQ and one item from the academic dimension of the ATIES resulted in one statistically significant correlation as seen in Table 6. The transactional leadership behavior item indicating that participants discuss in specific terms who is responsible for achieving performance targets was statistically correlated to the attitude that students whose academic achievement is 2 or more years below other students in the grade should be in regular classes ($r(99) = .253, p < .05$).

Table 6

Correlational Matrix for Attitudes Toward Inclusive Education: Academic Dimension: ATIES – Item 1 and Transformational Leadership Behaviors

	Item 1
Item	
11. I discuss in specific terms who is responsible for achieving performance targets.	.253*

Note. *Significant at the 0.05 level (2-tailed)

Discussion

In recent years, as a result of the Least Restrictive Environment mandate, American public schools have seen an increase in students with disabilities being educated in the regular classroom known as inclusion. Investigation of this topic was relevant because the degree to which schools implement inclusive practices rests largely with the principal and his or her attitude (Hall & Ford, 1987; Wilczenski, 1993); therefore, examining the principals' attitudes toward inclusion is even more critical. It is important to determine how selected leadership behaviors are related to principals' attitudes toward inclusive practices as school systems seek to assist educational professionals in deciding what type of leader is best suited for leading schools implementing inclusive models. Such research also aids in designing professional development opportunities for principals in creating an inclusive culture for their schools, contributes to the existing body of literature on leadership behaviors and attitudes toward inclusive education.

This study investigated the potential relationship between attitudes toward inclusive practices (academic and physical) and selected leadership behaviors (transformational and transactional). Data revealed a significant relationship between transformational leadership behaviors and academic and physical inclusive practices among middle school principals in North Carolina who participated in this study. No relationship was determined between transactional leadership behavior and attitudes toward these inclusive practices. Although the relationship between attitudes toward academic and physical inclusive practices and transformational leadership behaviors did prove significant, its magnitude was considered low ($r(75) = .320, p < .01$). This weak correlation may be the result of participants' experiences with various inclusion models. Furthermore, although the term inclusive practices was defined at the top of ATIES instrument, participants may have developed attitudes toward inclusion from varying experiences. For example, one administrator may have experience with collaborative team teaching where general and special education teachers work as partners with shared responsibility to teach the entire class. Both are engaged with activities related to student lessons (New Visions for Public Schools, 2007). Another principal may have experience with another approach such as Wang's Adaptive Learning Environment Model whose purpose is to teach all students basic skills while at the same time teaching coping strategies to assist them with the social and intellectual demands of school (ALEM, Wang & Birch, 1984; Wang & Zollers, 1990). These varying experiences with different inclusion models may have impacted the participants' responses.

The level of involvement that principals have with inclusive practices at their schools may also have contributed to the low degree of correlation between attitudes toward academic and physical practices and transformational leadership behaviors of North Carolina Middle school teachers for this study. To illustrate, if principals have assigned special education duties to their assistant principals, their own experiences with inclusive practices may be significantly less, therefore resulting in a lower number on the Likert scale provided. Furthermore, a low degree of correlation may also be due to principals not having a clear understanding of the inclusive practices in their schools.

On the other hand, no significant relationship was found between attitudes toward inclusive practices (academic and physical) and transactional leadership behaviors among

North Carolina middle school principals. This may be due to the fact that transactional leaders demonstrate a managerial style of leadership focusing on the maintaining the status quo (Bensimon, 1989; Johanson, 2006). Such leadership behaviors are considered central to maintaining an organization as opposed to developing a vision that is apparent in leading inclusive schools. Lack of a significant relationship may also be due to instrument selection. The ATIES may have caused participants to respond in an “all of nothing” manner to several of its statements. For example, when a participant responded to a statement such as *Item 1 Students whose academic achievement is 2 or more years below other students in the grade should be in regular classes*, he is forced to group all of his or her experiences with all students performing two years behind together. This may prove problematic because some students who are functioning 2 years below grade level may be able to function in the regular education classroom with adequate support while others may not be able. This could impact how the participants rated their attitudes toward particular students functioning at this level.

Conclusion

Administrative involvement is critical to the success of any programmatic change in a school setting. Research indicates that successful inclusion has been the result of cooperation and collaboration put forth by school principals (Evans, Bird, Ford, Green, & Bischoff, 1992). According to Burrello, Schrup, and Barnett (1992), “the belief and attitudes of the principal toward special education are the key factors influencing their behavior toward students with disabilities” (p.37). There are a scant number of studies that examine the relationship between attitudes toward inclusive practices and principals’ leadership behaviors. The findings of this study indicated a statistically significant relationship between attitudes toward selected inclusive practices (academic and physical) and transformational leadership behaviors and no relationship between attitudes toward selected inclusive practices (academic and physical) and transactional leadership behaviors.

Recommendations for Further Studies

Findings of this study lead to the following specific recommendations for future research in the areas of special education and inclusive education.

1. The development of a new inclusion instrument would be beneficial. A new instrument could allow study participants to respond to items in a broader manner and not group their experiences in an “all or nothing” format as well as provide participants with specific definitions for each dimension included in the instrument.
2. Further reliability and validity testing of the ATIES is recommended.
3. It would be beneficial to examine the social and behavioral dimensions of inclusion and their possible relationship to attitudes toward principals’ leadership

behaviors. Studying these dimensions could provide administrators with valuable information about how to improve leadership behaviors in such inclusive settings.

4. Participants in this study completed self-rated questionnaires. Responses given by the study participants using the rater form may have been skewed to present the principal in a more favorable manner than actually represent the leadership behavior that he displays. It would be beneficial for principals' subordinates to complete the rater form of the MLQ. As opposed to the leader form, the rater form asks subordinates to rate their leaders with respect to transformational and transactional leadership. This might generate a more objective view of the leadership behaviors actually exhibited by principals.
5. Using a mixed methodology that employs both quantitative and qualitative methods is also recommended. Qualitative data derived from interviews or case studies from middle school principals and their experiences with inclusive education (academic and physical) could further support and clarify the quantitative findings of this study.

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***Study of Thai Language Oral Reading Problems
For Students with Down Syndrome: Grade Range 1***

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Abstract

The purpose of the study was to explore the Thai Language Oral Reading Problems of students with Down syndrome, Grade Range 1 at Watnonsaparam School, Saraburi Thailand in favor of Web Quest Lessons Development Enhancing Oral Reading Skills of Down syndrome Students. The research instruments were the 2 observation forms on Thai Language Reading skill. The findings revealed that Thai Language Oral Reading Problems of Down syndrome students varied greatly on the pronunciation of vowels, tone marks, wording and sentences. Nevertheless, four students were able to orally read Thai characters with correct pronunciation and showed basic understanding of reading procedures. Most of the students were having problems in reading Thai vowels both in terms of pronunciation and meaning decoding; they took much more time on reading procedures. The problems found will benefit the development of Web Quest Lessons Enhancing Oral Reading Skills of Down syndrome Students Grade Range 1 at Watnonsaparam School, Saraburi Thailand.

Introduction

Down syndrome is the most common genetic cause of intellectual disability, occurring in approximately 1 in 700 live births as purposed by Centers for Disease Control and Prevention (2006). Ninety-eight percent of Down syndrome cases are caused by an extra copy of chromosome 21 (Trisomy 21). The Translocation occurs when part of chromosome 21 are attached to another chromosome. The mosaicism, occurring when some cells—but not all—include an extra copy of chromosome 21, is less common. A person of any race, socio-economic status, or geographic location can have a child with Down syndrome (Gerald et al., 2006). Approximately two-thirds of children with Down syndrome experience conductive hearing loss, sensor neural hearing loss, or both (Roizen, 2007). More recently, Hepburn, Philofsky, Fidler & Roger (2008) found that 15% of young children with Down syndrome met criteria for an autism spectrum disorder. Behavioral and psychiatric disorders, such as depression, appear to be less common in Down syndrome than in other types of intellectual disability; however, these difficulties may be more common in individuals with Down syndrome than in the general population (Antonarakis & Epstein, 2006). Moreover, social skills may decline and maladaptive behaviors increase with the common onset of dementia in adults with Down syndrome, which occurs at high rates at ages 45 years and older (Urv, Zigman & Silverman, 2008).

Reading is an important skill for human developing of any nation. In recent years, the importance of reading instruction for children and adults with Down syndrome has been increasingly recognized. Conflicting findings have been reported regarding the receptive vocabulary skills of individuals with Down syndrome. Several studies using standardized assessments suggest that children and adolescents with Down syndrome comprehend spoken words at levels similar to mental age-matched typically developing children (Law & Bishop, 2003). Glenn & Cunningham (2005) reviewed that vocabulary comprehension exceeded nonverbal cognitive ability for adolescents and young adults with Down syndrome. However, in Roberts *et al.*, (2007) purposed, children with Down syndrome scored lower than younger nonverbal mental age-matched typically developing children on standardized measures of receptive vocabulary. The recent researches also support the view that all children with Down syndrome will benefit from being read to and from being in reading instruction since the early age as these activities improve their spoken language and memory skills, even though they do not become independent readers themselves. There was a small amount of published literature that documented the literacy achievements of individuals with Down syndrome. But there are some indications on progress rates and the relationships between attainments in reading and other cognitive skills (Farrell & Gunn, 2000; Van, Moni, Jobling & Ziebarth, 2001; Bochner, Outhred & Pieterse, 2001). While research evidence is still limited, it does support the view that many individuals with Down syndrome can learn to read and write to a level that will be a useful skill to become more independent in their everyday lives, improving their ability to participate in formal education and learning, increasing employment opportunities and also giving them access to books and newspapers. This study explored Thai Language Oral Reading Problems with the Down syndrome students in Grade Range 1 at Watnonsaparam School, Saraburi, Thailand.

Methodology

Population and Sample

Population

The populations were seven students with Down syndrome in Grade Range 1 (Primary school level 1 to level 3) and six specialized Thai language teachers from Watnonsaparam public School, Office of Regional Education of Saraburi Region 1, Thailand, in the First semester, 2008 academic year.

Sample Group

Five students with Down syndrome between 6 to 13 years old that were purposive selected from Watnonsaparam public school under the Office1 of Saraburi Educational Service Area of Thailand that have students studying in 3 years of elementary level None of them presented hearing problems and reported no history of hearing difficulty. All of them were monolingual Thai language.

Research Instruments

1. Screening form adapted from Assistant Professor Dr. Daranee Utairatanakit's tool for students with short attention span, learning deficiencies, and autism (KUS-SI Rating Scales: ADHD/LD/Autism (PDDs) and Diagnostic test of deficiencies applied from the Department of Educational Technologies and Innovations (2003)

2. Observation forms on Thai language reading problems of students with Down syndrome, one containing 16 topics which identify particular reading problems and the other containing 18 topics with 4 levels of Thai language reading behaviors and problems. The problems were measured in 4 levels as follows:

- never (0%)
- sometimes (1-30%)
- often (31-70%)
- nearly always (71-100%)

Procedure

1. The six specialized Thai teachers tested each student's reading abilities using the questionnaire and the observation form. The survey and observation were conducted from May to September 2008. The students were individually evaluated on the following reading abilities:

- consonants and vowel (พยัญชนะและสระ)
- Thai tone marks: (̂) (̄) (̆) (̈) (วรรณยุกต์)
- Thai syllables (พยางค์ไทย)
- vocabulary (คำศัพท์)

2. The researcher collected the survey results from 6 specialized Thai teachers and analyzed the data using the percentage. The problems on Thai Language oral reading were identified leading to the conclusion the content of Thai Language oral reading that should be used for making the WebQuest lesson for students with Down syndrome at lower elementary level.

Results

The results of the survey and the observation on Thai language oral reading problems of students with Down syndrome in grade range 1 at Watnonsaparam School, in Saraburi province, Thailand were presented in Table 1 and 2 as follows:

The result from six specialized teacher screening found that five students with Down syndrome had reading learning problems (Table 1). Four girls and one boy had Thai language oral reading problems on inability to read and recall words, inability to master tones in words, inability to identify vowels in words, slow and halting reading, and inability to read some word. The topics they had the less problems is limited vocabulary. Descriptive results analysis and conclusion on Thai oral reading topic contents based on the study results of Students with Down syndrome' in grade rang 1 show in Table 2. Thai

language reading problem among Down syndrome students divided into 4 contents are vowel, tone marks, wording and sentence. The problems related to vowel are single and combined vowel, compound word with single vowel and with or without final consonant and compound word with compound vowel and with or without final consonant. For the Thai tone, the students have problem in both of tone sound and tone mark. In case of the used of wording problem are involved of initial consonants, Diphthongs word (ror roer, lor ling, wor whaen), word with symbol on the consonant mute, final consonant word with off-clause and phony merge word. In addition, the sentence level problems are sound in the sentence and topic sentence.

Table1. Survey results from six specialized Thai language teacher screening on Thai language oral reading problems among students with Down syndrome in grade range 1 from Watnonsaparam School, in Saraburi province, Thailand

No.	Topics of Thai language reading problems	Down syndrome students in grade range 1				
		Primary school level 1	Primary school level 2		Primary school level 3	
		Annie (girl)	Peter (boy)	Patty (girl)	Gibe (girl)	Kitty (girl)
1	Consonants (พยัญชนะ)	6*	5	5	2	2
2	Vowel (สระ)	6	6	6	6	6
3	Master Thai tone marks: (◌̂) (◌̃) (◌̄) (◌̅) (วรรณยุกต์)	6	6	6	2	2
4	Compound word with single vowel with final pronounced letter (คำที่ประสมสระเดี่ยวไม่มีตัวสะกด)	6	6	6	6	6
5	Compound word with single vowel syllable (คำที่ประสมสระเดี่ยวมีตัวสะกด)	6	6	6	6	6
6	Compound word without combined vowel syllable (คำที่ประสมสระประสมไม่มีตัวสะกด)	6	6	6	6	6
7	Compound word with combined vowel syllable (คำที่ประสมสระประสมมีตัวสะกด)	6	6	6	6	6
8	Word with initial consonant (คำที่มีอักษรนำ)	6	6	6	6	6
9	Diphthongs word (คำควบกล้ำ ร ล ว)	6	6	6	6	6
10	Word with mute mark letter (คำที่มีตัวการ์นต์)	6	6	6	6	6
11	Word with tone marks (คำที่มีวรรณยุกต์)	6	6	6	6	6
12	Word with final pronounced	6	6	6	6	6

	letter and special spelling rules (คำที่มีตัวสะกดไม่ตรงตามมาตรา)					
13	Inactive cluster (คำควบไม่แท้)	6	6	6	6	6
14	Short sentences (ประโยคสั้นๆ)	6	6	6	6	6
15	Slow reading (อ่านช้าใช้เวลามาก)	6	6	6	6	6
16	Limited vocabulary (รู้คำศัพท์ค่อนข้างน้อย)	6	2	2	2	2

*2 – 6 is number of specialized Thai language teacher who agreement screening on Thai language oral reading problems among students with Down syndrome in grade range 1

Table 2. Thai oral reading topic contents based on the study results of Students with Down syndrome' reading problems

Thai Language Components	Topics of Oral Reading Problems
1.Vowel (สระ)	1. Single vowel and combined vowel (เสียงสระเดี่ยวและสระประสม) 2. Compound word with single vowel and with or without final consonant (คำที่ประสมสระเดี่ยวมีตัวสะกดและไม่มีตัวสะกด) 3. Compound word with compound vowel and with or without final consonant (คำที่ประสมสระประสมมีตัวสะกดและไม่มีตัวสะกด)
2. Tone (วรรณยุกต์)	1. Tone sound (เสียงวรรณยุกต์) 2. Tonal mark on the consonants (คำที่มีวรรณยุกต์) - Completely 5 tones (ครบ 5 เสียง) - Incomplete 5 tones (ไม่ครบ 5 เสียง)
3.Word (คำ)	1. Leader consonant word (คำที่มีอักษรนำ) 2. Diphthongs word (ร _{or} roer, l _{or} ling, w _{or} whaen) (คำที่ควบกล้ำ ร ล ว) 3. Word with symbol on the consonant mute (คำที่มีตัวการ์ตูน) 4. Final consonant word with off-clause (คำที่มีตัวสะกดไม่ตรงมาตรา) 5. Phony merge word (คำที่ควบไม่แท้)
4. Sentence (ประโยค)	1. Voice in the sentence (เสียงในประโยค) 2. Sentence from topic (ประโยคจากเนื้อเรื่อง)

Conclusion

Thai language oral reading problems of the lower elementary students with Down syndrome at Watnonsaparam School, Saraburi province, Thailand varied greatly; they

were separated on to three level. Level 1 is alphabets (vowels, tone marks), level 2 is words and level 3 is short sentences. The problems found will benefit the further development of Web Quest Lessons Enhancing Oral Thai Language Reading Skills of Down syndrome Students Grade Range 1 at Watnonsaparam School, Saraburi Thailand.

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Podcasting and Digital Video in the Classroom: A Call for Research

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Abstract

A case is directed at digital immigrants to utilize mobile computing devices such as an Apple iPod to deliver content to students in self-contained special education classrooms. The author discusses the current state of the use of iPods in classrooms, and how research using these devices has been limited to institutions of higher learning, while leaving the K-12 arena almost devoid of use. Research using this mode of treatment is in its infancy, leaving the field wide-open for willing participants with tremendous upside for the students we are teaching.

Podcasting and Digital Video in the Classroom

Often times, finding a method of service delivery that works in our classrooms is a difficult proposition. With the relatively small numbers of students we work with in self-contained classrooms, many companies don't find it economically feasible to develop products for utilization in our classrooms that we can purchase for a reasonable amount, so commercial products are often out of the question. However, with the trappings of NCLB and the requisite assessments that are now becoming inherent in our classroom domain, it is imperative that we find some ways on our own to develop content that can be successfully used over and over again with our students.

Video has a tremendous advantage over other methods, since all we need to do to replicate the last lesson is to rewind and press the 'play' button. Many of us as digital immigrants, however, still have a difficult time accepting and using technology in our classrooms. We must realize that our students process information much differently than we ever did (Prensky, 2001), and that we need to change our ways of content delivery if the students are going to be successful. Just because our students have a disability does not preclude them from being able to avail themselves of new technologies.

Of late, many methods of utilizing video in the classroom have been delivered to students using a new technology that better suits the student population and their ability to interact with the medium. Over the last 20 years, there have been a number of studies that have addressed the use of video in a variety of formats in classrooms serving moderate and severely intellectually disabled students along with students who have been classified as being autistic. In a review of the literature by Mechling (2005), 24 studies from 1999 to 2003 that utilized a form of video were investigated. Findings from the analysis included the identification of six different video procedures that had recently been utilized. Those methods included video feedback, video modeling (VM), video self-modeling (VSM),

subjective point-of-view, interactive video prompting and computer-based video instruction (CBVI). From a positive perspective, 91.3% of the studies looked at found a positive outcome for instructor-based video programs that used one of the six methods mentioned across a range of skills that these students needed and that teacher-made programs can be a successful strategy and support for in vivo instruction.

Due to its size and portability, Apple Computer's iPod is becoming a popular delivery method for several types of video modeling strategies that have previously utilized computers and portable DVD players. The iPod was a key component in a study that looked to improve the transition of students with Autism Spectrum Disorders (ASD) in a public school setting (Cihak, Fahrenkrog, Ayres, & Smith, 2010). In this case, video modeling was provided for the participants and allowed them to transition between classes, usually a difficult task for students with ASD. The size of the device allowed the participants to remain inconspicuous while utilizing it to traverse the hallways. It has shown potential for being a valuable tool in the repertoire of special educators.

Current iPod Usage

Usage of the iPod for educational purposes is in its infancy, as the first article mentioning the use of a device was published in 2007, in *The New York Times* (Auchincloss & McIntyre, 2008). The use of podcasting in education has taken a variety of forms, as was found when completing a recent search of the EBSCOhost database using the terms, 'special education' and 'vodcasting' or 'podcasting' or 'vodcast' or 'podcast' or 'iPod.' In this short review of the literature, only looking at peer-reviewed journals from 2006 until 2010, a total of 44 articles were found. Among these articles were a total of four qualitative studies and three quantitative research studies (Bess, Jackson, Moran, & Newman, 2010).

Twenty-four of the articles discussed topics such as about 'how to podcast,' the history of podcasts, and an overview of podcasts in general. Seven articles were surveys of iPod use, along with one literature review, two anecdotal articles and three that were classified as miscellaneous. The articles found were in the fields of communication or information services, various performance activities with only one article in athletics and special education. Most notably absent was the math area. Grade levels of articles included three from elementary schools, one from middle and high school, and the balance of 33 articles from college and beyond. Grade levels of research articles followed a similar ratio, with one study from elementary, one study from middle and five studies from college and beyond (Bess, et al., 2010).

From these data collected, some conclusions were made by Bess et al., (2010) most importantly, that quantitative data need to be collected that will address the issue of actual iPod or mobile computer use with students in a variety of fields and subject areas. It was found that qualitative data that were collected addressed the factors of 'newness' and 'coolness' along with motivation. Three of the survey studies said the majority of people use an iPod, not a personal computer for podcasts while a review of the literature said just the opposite.

An additional conclusion reached by the panel (Bess, et al., 2010) was that the time for surveys of use and introductory articles has past and that serious research needs to be undertaken that will address some of the holes that were uncovered in this review. Studies appear to be quite prevalent at the college and post-college levels, with podcasts being utilized for lectures and supplemental material for the most part. Areas of future research include addressing the K-12 area, especially in the fields of math, and special education across categories. In addition, questions arose including what learning style would most benefit from podcasts, whether the author of the podcast made a difference, and where specifically most podcasts were being viewed, whether being used with a mobile computing device or a stand-alone computer. Finally, the recognition was made that the present research on the usage of podcasting and mobile computing devices is in its infancy, indicating that longitudinal studies need to be planned and executed for the field to develop and prosper.

A recent study by Cihak, et al., (2010) took advantage of some of the positive aspects of the device with students having Autism Spectrum Disorders (ASD). The size of the tool is such that it is easily used anywhere a student will be during the school day. In addition, the student can view the task in question on multiple occasions, or anytime additional reminders are needed to complete the task. Previous studies that had had success utilizing video modeling were constrained by the size of the equipment and were required to view the video in a specific setting. (Cihak et al., 2010). This obstacle has been removed by this recent technology.

An additional advantage in the use of an iPod is the 'cool' factor experienced by students with disabilities when using one (Taber-Doughty, Patton, & Brennan, 2008). The novelty of this type of technology has been shown to be the determining factor in the choice of a device to complete tasks. The use of video in classrooms for students with disabilities has advanced from a technology that was tied to the classroom or school due to the size of the equipment, to a technology that can deliver instantaneous video on any work site at any time. Although the use of the technology requires quite a bit of teacher planning time, once groups of teachers begin to develop and share their libraries of video, students with moderate intellectual disabilities will definitely be the benefactors.

Conclusion

While the prospect of learning and developing digital video for use in a self-contained special education classroom may be especially daunting for the many digital immigrants who still populate classrooms across the country, the results could be beneficial to both the students and the teachers involved. Starting a research project is not as hard as it often appears and the present state of the field is wide open. In addition, the potential benefits to our students are reason enough for utilizing this particular method of content delivery. What a great opportunity for the budding researcher to get their feet wet!

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***Teaching Singaporean Children with Autism Spectrum Disorders to Understand
Science Concepts Through Autistic Logic Analysis/Synthesis (ALA/S)***

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Abstract

This paper introduces Autistic Logic Analysis/Synthesis (ALA/S) as a pedagogical method used by specialist teachers, allied educators and educational therapists in Singapore to teach academic subjects such as English grammar, science, mathematics and social studies to students with autism spectrum disorders (ASD). In this paper, the focus is on teaching science concepts. Examples of how ALA/S is used in teaching science lessons are illustrated in this paper.

Introduction

Our understanding of Autism Spectrum Disorders (ASD) comes from the writings of Dr Leo Kanner (1943) and Dr Hans Asperger (1944) – both have been regarded as the pioneers in the field. Siegel (1996) used the term Autism Spectrum Disorders in her nosology to encompass autistic disorder (i.e., the classical autism as described by Dr Kanner) and non-autistic Pervasive Developmental Disorders (PDD), which include Asperger's Syndrome, Fragile X-Syndrome, Rett's Syndrome, Childhood Distintegrative Disorder, and PDD-Not Otherwise Specified, and correspond exactly to what the DSM-IV-TR (American Psychiatric Association, 2000) refers to collectively as Pervasive Developmental Disorders .

There are also other definitions given by other organizations. For instance, the Autism Society of America (2004) defines autism as “a complex developmental disability that typically appears during the first three years of life. The result of a neurological disorder that affects the functioning of the brain, autism and its associated behaviours have been estimated to occur in as many as 2 to 6 in 1,000 individuals. Autism is four times more prevalent in boys than girls and knows no racial, ethnic, or social boundaries. Family income, lifestyle and educational levels do not affect the chance of autism's occurrence” (p.1).

According to Chia (2008a), the current definition of ASD emphasizes on problems in empathizing, which involves two main steps: (1) the ability to attribute mental states to

other people as a natural way of understanding them; and (2) having an automatic appropriate emotional reaction to other people's mental states. These two steps form a major ingredient in successful social interaction. Empathizing concerns what is known as the theory of mind or mind-reading. Another term that has been used to mean the same thing is *mentalizing* (Frith & Frith, 1999). Empathizing deficits, therefore, refer to one's failure to make connection to another individual's experience and to respond appropriately to that person. Functional imaging studies (e.g., Cody, Pelphrey, & Piven, 2002; Di Martino & Castellan, 2003) implicate prefrontal cortex and posterior superior temporal sulcus as components of this ability to empathize or mentalize

However, recent studies (e.g., Baron-Cohen et al., 2003; Lawson, Baron-Cohen, & Wheelwright, 2004) suggest that though individuals with autism display empathizing deficits, they have intact or even superior systemizing ability. Systemizing refers to that ability to analyze and build systems so as to understand and predict the functional behaviour of impersonal events or inanimate or abstract entities. Myers, Baron-Cohen, and Wheelwright (2004) have listed the following six systems:

1. Mechanical systems, e.g., machines and tools (see Brink, 1979; Hoffman & Reeves, 1979);
2. Natural systems, e.g., biological processes and geographical phenomena (see Grandin, 2000; Grandin & Johnson, 2005);
3. Abstract systems, e.g., mathematical concepts and computer programs (see Brill, 1940; Chia, 2008b);
4. Motoric systems, e.g., 3-D drawing, piano finger technique or a lawn tennis shot (see Charness, Clifton, & MacDonald, 1988; Selfe, 1977);
5. Organizable systems, e.g., Dewey Classification System used in library cataloguing of books or a stamp collection (see Chia, 2007; Shah & Frith, 1993); and
6. Social systems, e.g., business management or a football team (see Golan & Baron-Cohen, 2006; Lawson, 2001).

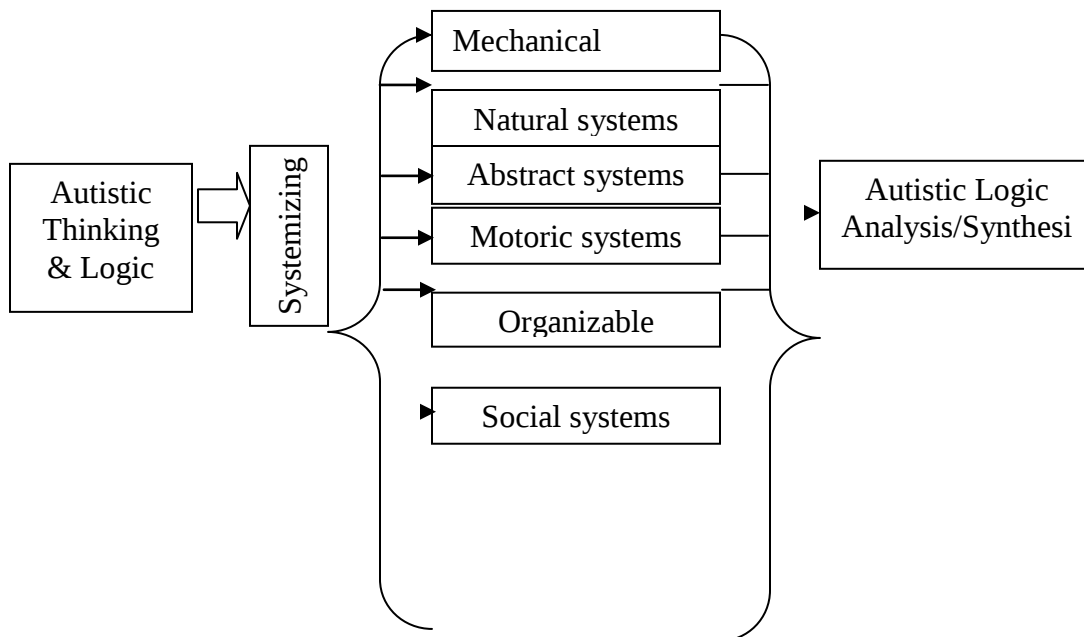
As a result, Chia (2008a) has argued the need to re-define and expand the term ASD to include systemizing ability and went on to define the condition as "a neuro-developmental syndrome of constitutional origin (genetic) and whose cause could also be epigenetic, and its onset is usually around first three years of birth, with empathizing or mentalizing deficits that result in a triad of impairments in communication, social interaction, and imagination (or presence of stereotyped behaviors), but may, on the other hand, display (especially by autistic savants) or hide (especially by autistic crypto-savants) a strong systemizing drive that accounts for a distinct triad of strengths in good attention to detail, deep narrow interests, and islets of ability" (p.10).

Understanding the Autistic Logic

This author has postulated that all these six systems or systemizing abilities are parts of the Autistic Logic Analysis/Synthesis (ALA/S) system (see Figure 1). The term *logic* is used here to mean inductive reasoning, which means to draw general conclusions from

specific examples, and deductive reasoning, which means to draw logical conclusions from definitions and axioms. A similar dichotomy is analysis (whole → parts approach, i.e., studying an object as a whole by examining its component parts) and synthesis (parts → whole approach, i.e., considering how the component parts can be put together to form a whole).

Figure 1: Model of the ALA/S System



In a certain way, the ALA/S system is a form of syllogism that appeals to the way an individual with ASD thinks (i.e., Autistic Thinking) and hence, how he/she perceives the immediate world around him/her (i.e., Autistic Logic). This is because individuals on the autism spectrum can have idiosyncratic logic that does not make sense to others. Autistic Logic is associational, and is not always logical to non-autistic people. Hence, the odd behavior of individuals with ASD may annoy the people around them because it is simply a case of unusual problem solving that may seem logical only to someone who has ASD (Paxton & Estay, 2007).

Autistic Logic is the base for autistic problem solving through one or more of the six systemizing routes that Myers, Baron-Cohen, and Wheelwright (2004) have identified. The way an individual with ASD makes sense of any of these systems is not in terms of mental states, but in terms of the underlying rules and regularities. Such superior systemizing ability can be seen in those termed as autistic savants, who may have two or more savant abilities (Treffert, 1989). However, there is also another lesser known subgroup of autistic crypto-savants, who, “because of their inability to communicate, have savant skills that are hidden, or secret, and unknown to those around them” (Rimland, 1990, p.3). This aspect is often ignored in the current definition of ASD.

There are 7 fundamental concepts that form the pre-requisites for which specialist teachers and allied educators, who provide additional learning and behavior support services, as well as educational therapists must take note in order to understand Autistic Logic:

1. Individuals with ASD engage in visual thinking, i.e., they see pictures inside their head;
2. They also engage in literal thinking, which is also known as loophole thinking or way around a rule;
3. Their sense of self or reference to self is lacking;
4. Their theory of mind, i.e., empathizing/mentalizing, is impaired;
5. They manifest difficulty with change and shifting attention from one activity/situation to the next;
6. They display weak executive functioning ability, which includes poor central coherence, cognitive inflexibility, organizational deficits, source monitoring difficulty, impulsivity & disinhibition with poor ability to control emotional, and poor meaning attribution; and
7. They may possess strong systemizing ability based on autistic thinking and logic, in-the-moment thinking, and black-and-white thinking.

It is the seventh and last concept that concerns Autistic Logic. This involves three important sub-processes of systemizing ability: autistic thinking and logic, in-the moment thinking, and black-and-white thinking.

Autistic thinking and logic

Autistic thinking, which includes idiosyncratic logic and incoherence (Weiner & Greene, 2008), refers to the inclination of an individual with ASD to focus on specific details instead of the bigger picture. Hence, we are unable to understand why an individual with ASD may behave oddly at times and often attribute inaccurate meanings to autistic behaviors (Jacobsen, 2003).

In-the-moment thinking

The in-the-moment thinking refers to the way individuals with ASD perceive events or “experience life around them in the moment, without a sense of the past or the future” (Paxton & Estay, 2007, p.73). This explains why individuals with ASD do not transfer learning to different situations and encounter challenges in recalling what they have learned especially when their cognitive state and ability fluctuate from time to time (Ory, 1995). According to Attwood (1998), this problem can be compounded by abnormalities in the sensory processing. Moreover, when individuals with ASD are over-stimulated, they also suffer emotional dysregulation or meltdown (Laurent & Rubin, 2004; Raymaekers et al., 2004).

Black-and-white thinking

Individuals with ASD think in extreme ends, between black and white, right and wrong, true and false, good and bad. Averroes (b.1126-d.1198), an Andalusian Muslim polymath, defined this as a tool of logic “for distinguishing between the true and the

false”. Hence, it is not surprising to note that individuals with ASD love rules that are consistent and will obey and follow these rules. They also expect others to obey and follow the same rules. According to Attwood (1998) and Ory (2002), rules and regulations, rituals and routines help make abstract social practices concrete for these individuals with ASD.

Application of Autistic Logic Analysis/Synthesis (ALA/S) approach

The ALA/S is currently being studied as an experimental pedagogical approach used in teaching science concepts to students with ASD who are attending either mainstream or special schools in Singapore. In a typical science lesson taught to these students, pictures are added to the sentences to provide visual support in conceptual formation as well as understanding of what they are learning or being taught.

As mentioned earlier, ALA/S is a form of categorical syllogism consisting of three parts: (1) the major premise, (2) the minor premise, and (3) the conclusion or learning point. Each of the three parts is known as a categorical proposition, which, in turn, consists of two categorical terms – the subject and the predicate – and affirms or denies the latter or the former. Both the major and minor premises have one *term* (any word or group of words considered as a member of a construction or utterance) each in common with the conclusion: in a major premise, this is the *major term* (i.e., the predicate of the conclusion); in a minor premise, it is the *minor term* (the subject) of the conclusion. For instance, as given here below with pictorial cues:

Major premise:		The moon is Earth’s only natural satellite.
Minor premise:		Luna is the name of the moon.
Conclusion:		Luna is the name of Earth’s only natural satellite.

Alternatively, the above categorical propositions can be expressed in more controlled structures as follow:

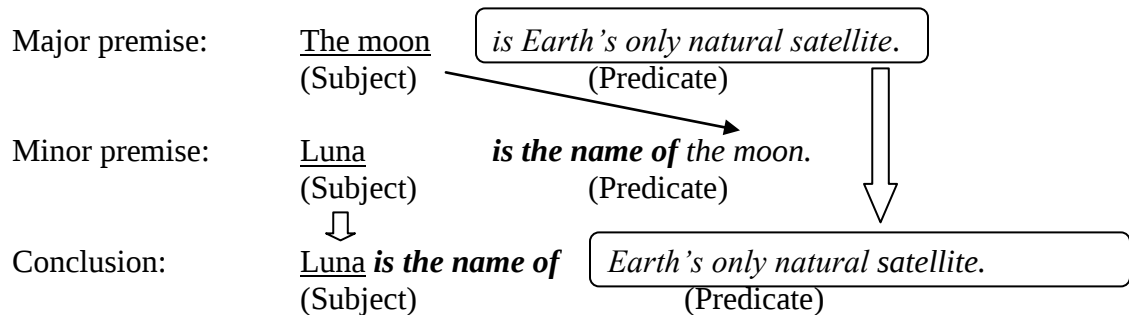
Major premise:	The moon is Earth’s only natural satellite.
Minor premise:	Luna is the moon.
Conclusion:	Luna is Earth’s only natural satellite.

where ... The moon (M) is Earth's only natural satellite (E); Luna (L) is the moon (M); and Luna (L) is Earth's only natural satellite (E). The syllogism can be expressed in the following abstract form:

Major premise: M is E.
 Minor premise: L is M.
 Conclusion: L is E.

Based on the same example given above, Figure 2 below shows how the categorical terms – subjects and predicates – in the three categorical propositions are related to each other.

Figure 2: Interrelationships among terms within the three categorical propositions



Notice that there are three terms in the three categorical propositions given in Figure 2. The underlined words are subjects while the words in italic form the predicates. There are three types of predicates here. The first type of predicate that is boxed is the major predicate found in the major premise. The second type or predicate is the one in which the subject *The moon* in major premise becomes a predicate *the moon* in the minor premise. The words in bold and italic (i.e., ***is the name of***) is an additional term – known as supplemental – found in the minor premise and conclusion. This third type of predicate provides more information to the learning point.

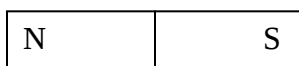
An Example of a Science Lesson Plan using ALA/S

Here is another example of how a science lesson on magnetism is planned for a group of six Primary 5 students with ASD. ALA/S is used in the lesson planning as shown below.

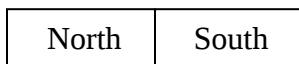
Background information to be provided:

The background information is provided at the beginning of the lesson to frontload the students with the necessary knowledge in order to prepare them for the new topic on magnetism as in this illustration. A real magnet is used and shown to the students. Alternatively, every student is given a piece of magnet bar so that he/she can actually touch, feel and examine it.

- This is a magnet.



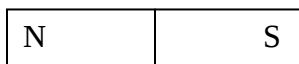
- N is North Pole.
- S is South Pole.



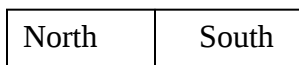
First concept to be learned/taught:

Once the background information is provided, the first concept (as given in the conclusion/learning point) is taught to the students by first introducing the major premise and then the minor premise. Real magnets are used and the two poles are pointed out for the students to see so that they know N is North Pole and S is South Pole.

Major premise: Any magnet has two poles N and S.



Minor premise: North and South can be found on any magnet.

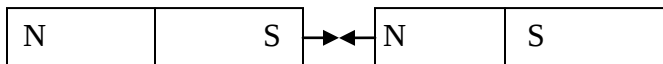


Conclusion: North and South are the two poles N and S.

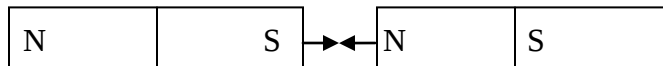
Second concept 2A to be learned/taught:

The second concept 2A (as given in the conclusion/learning point) is taught next: different poles put together can attract. Real magnets are used throughout the lesson as students with ASD learn and understand better with real things they can see, touch, feel and examine.

Major premise: Two magnets put together can attract.



Minor premise: Different S and N poles can be seen on the two magnets.

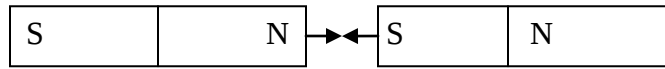


Conclusion: Different S and N poles put together can attract.

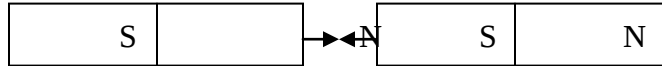
Second concept 2B to be learned/taught:

The second concept 2B is a repetition of the previous concept 2A except that the positions of the two unlike poles of the two magnets are now reversed.

Major premise: Two magnets put together can attract.



Minor premise: Different N and S poles can be seen on the two magnets.



Conclusion: Different N and S poles put together can attract.

Third concept 3A to be learned/taught:

The third concept 3A (as given in the conclusion/learning point) is taught next: same S poles put together can repel. Again real magnets are used so that students with ASD can learn and understand better with real things they can see, touch, feel and examine.

Major premise: Two magnets put together can repel.



Minor premise: Same S poles can be seen on the two magnets.



Conclusion: Same S poles put together can repel.

Third concept 3B to be learned/taught:

This is a repetition of the previous concept 3A except that this time the same N poles are facing each other.

Major premise: Two magnets put together can repel.



Minor premise: Same N poles can be seen on the two magnets.



Conclusion: Same N poles put together can repel.

Summary of the concepts to be learned/taught:

In this last part of the lesson plan, the background information and conclusions or learning points are gathered to be put together as the summary of the concepts to be learned or taught in this lesson.

- This is a magnet.

N	S
---	---

- N is North Pole.
- S is South Pole.

North	South
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- North and South are the two poles N and S.
- Different S and N poles put together can attract.
- Different N and S poles put together can attract.
- Same S poles put together can repel.
- Same N poles put together can repel.

Concluding Remarks

The experimental study on the efficacy of ALA/S as a pedagogical method to teach Primary 5 students with ASD to understand various science concepts what they have learned or been taught is still going on even at the time of this writing. The study is into its fifth trial run involving between six and ten students with ASD each time. All in all 38 Primary 5 students with ASD have participated in the study. Initial findings of the earlier trials appeared positive and very encouraging.

The biggest challenge faced by the teachers, allied educators and educational therapists, who have taught various science concepts using ALA/S, is lesson planning, which could take up more time and effort to prepare (e.g., getting the necessary materials for experiments), especially for difficult topics such as photosynthesis, pollination and climate change.

NOTE: Readers interested in finding out more about the research study on ALA/S can email to the author at kokhwee.chia@nie.edu.sg.

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Students with Fetal Alcohol Syndrome Participating in Recess

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Abstract

For the student with Fetal Alcohol Syndrome (FAS), participation in recess can often be both challenging and rewarding for the student and teacher. This paper will address common characteristics of students with FAS and present basic solutions to improve the experience of these students in the recess setting. Initially, the definition and prevalence of FAS will be presented. This will be followed by a discussion of the benefits of the recess setting for the student. Next, as a lead-up to the specific topic of recess for students with FAS, a discussion of possible modifications and teaching strategies for working with children with FAS in the classroom will be noted. The paper will then address the possible challenges and subsequent modifications and teaching strategies for working with children with FAS in recess. Lastly, specific methods of proactively including a student with FAS in a recess activity will be discussed.

Definition and Prevalence of Fetal Alcohol Syndrome

FAS occurs when a woman consumes alcohol while pregnant. Various birth defects can result during each stage of the infant's development that will cause them to suffer from FAS. The broad term for all children affected by alcohol prenatally is Fetal Alcohol Spectrum Disorder. In 2009, sociologists at the University of New Mexico estimated the prevalence of Fetal Alcohol Spectrum Disorders to be between 2 – 5% of the U.S. population (May, Gossage, Kalberg, Robinson, Buckley, Manning & Hoyme, 2009). May et al say that somewhere between two and seven children per 1,000 suffer from the most severe and well-known form known as FAS (2009). Ann Streissguth, Ph.D. states that FAS is, in fact, a birth defect, which manifests itself in both mild and severe conditions primarily affecting the brain (1997). There is a wide spectrum of severity, and the symptoms vary for each individual, creating "his or her own special needs, problems, and capabilities" (Streissguth, 1997). The effects of the disease become more apparent as the child grows and enters school. These children suffer from delayed development, hyperactivity, poor gross and fine motor skills, attention deficits, and difficulty understanding and following through on directions (Streissguth, 1997). In school,

Streissguth (1997) explains, these children are most often seen as unpredictable and disruptive and exhibit behaviors that are difficult to interpret.

Possible Modifications/Teaching Strategies for Working with an Individual with a Fetal Alcohol Syndrome in the Classroom

Children with FAS often struggle in school due primarily to the overwhelming amount of action and social interaction required on a regular basis. In order to reduce stress for the student and the teacher, it is important to maintain structure and routine. Maureen Murphy, a teacher with much experience working with children with FAS, says she has two basic structural forms: 1) offering clear options, and 2) maintaining a consistent schedule (Kleinfeld, & Wescott, 1993). Another teacher suggests that the teacher and child have a consistent signal that they are both familiar with so that the teacher can tell the child to stop a behavior (Soby, 1994). Children with FAS need to have positive reinforcement and encouragement for a job well done. Streissguth (1997) suggests that teachers be aware of the potential for repeated failure so as to avoid it altogether. These children need something to feel good about, she explains. Ultimately, Streissguth (1997) suggests consistent rules and a regular schedule, simple instructions, repetition, and helping the student set realistic goals.

Benefits of the Recess Setting for Children

Research through the years has clearly recognized the numerous values of recess during the school day. Recess serves as an optimal learning ground for children to grow both physically and socially. Dr. Jambor of the University of Alabama explains that recess has played a key role in developing such skills since 1901 as it “encouraged games of competition, allowed experimentation with new social strategies, and provided a setting for dramatic play” (Pytel, 2009). Kids learn numerous essential social skills while engaging in free physical activity. Such skills include”

- Conflict resolution
- Cooperation,
- Respect for rules
- Taking turns
- Sharing
- Using language to communicate
- Problem solving in situations that are real (Pytel, 2009).

Possible Challenges & Modifications for Children with a Fetal Alcohol Syndrome in the Recess Setting

Parents of children with FAS often explain their child’s struggles, “Each day starts anew without the advantages of what was learned the day before” (Streissguth, 1997). In light of the learning that takes place in the recess setting regarding social interactions, it is understandable that children with FAS would have a difficult time with recess. Children with FAS syndrome often have difficulty managing their emotions and therefore need the

support and guidance of a teacher. Spontaneity can often be overwhelming for these children as they have difficulty adjusting to rapid change (Kleinfeld, & Wescott, 1993). Considering the recess atmosphere, full of action and interaction, these children can quickly become overwhelmed. Modifications can go a long way in reducing teacher stress while also enhancing the experience of a child with FAS.

Table 1: Possible Modifications and Teaching Strategies for Children with Fetal Alcohol Syndrome in Recess

Possible Modifications	Reasoning
Offer gentle guidance	Children with FAS need to know what is expected of them. With this understanding, children can begin to make decisions in regard to their behavior (Streissguth, 1997).
Provide realistic goals, structure, and supervision	Activity suggestions are an ideal way to encourage a child with FAS to participate in recess. When this is followed by constructive feedback from a teacher who is aware of the child's behavior and interactions, the child learns self-confidence and regulation (Streissguth, 1997).
Present choices with clear options	Choices allow the child to evaluate their options in a more concise way without extra information to compound their processing (Kleinfeld, & Wescott, 1993).
Provide hands on materials for play	Concrete objects help the child to feel purpose and goal in participation. Children with FAS will benefit from being able to engage in a specific activity as they navigate their ever-changing interactions (Soby, 1994).
Modeling and hands on demonstration	Children with FAS benefit from visual examples and representations. For example, when the teacher models positive interaction with other students while demonstrating how to play Four Square, the child recognizes the teacher's behavior and will seek to replicate it in their participation (Soby, 1994).
Reduce instructions	Reducing the amount of verbal instruction and increasing physical gestures helps children with FAS to process and visualize (Soby, 1994).
Give feedback	Maintaining conversational exchanges with the child will help the teacher remain aware of how the child is handling the situation and gives the child a guide for their behavior (Soby, 1994).

Suggested Activities/Modifications for Including a Student with Fetal Alcohol Syndrome in Recess Activity

- Shooting basketball shots – avoid competitive full-court games where the child is forced to move at a high intensity level and play offense and defense so that advance skills, such as switching from offense to defense, can be avoided
- Passing a soccer ball with a partner – as with basketball, avoid competitive full-court games where the child is forced to move at a high intensity level and play offense and defense so that advance skills, such as switching from offense to

- defense, can be avoided
- Throwing and catching a ball or Frisbee with a partner or in a group would be a good choice as it develops social interaction while allowing the student to maintain a focus - the teacher, or other student, should demonstrate the activity to avoid confusion - remember, demonstrations are often better understood than verbal explanations
 - Playing a bowling-like game - as with other mentioned activities, this avoids competitive full-court games where the child is forced to move at a high intensity level - the game should be set-up to allow for immediate success.

Conclusion

Children with FAS struggle with the fast pace of life and processing changes and behaviors. Social interactions, which are enhanced in the recess setting, are easily complicated by misinterpretation and inappropriate responses. FAS affects a child's ability to interpret circumstances and emotions so these children need positive, clear, and consistent guidance from their teacher. Simply redirecting the child's focus or intervening before the child loses control can avoid many issues common in recess. Like other children, children with FAS deserve a safe and encouraging recess environment for growth.

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NOTE: "World History Brain Efficient Word Lists for Word Sorts, Puzzles, and More" to be published in the June Practical Teacher. Currently a free download copy of the book "World History Word Sorts" is available at the author's website, www.StrugglingReaders.com

Differentiating for Struggling Readers and Writers: Improving Motivation and Metacognition through Multisensory Methods & Explicit Strategy Instruction

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Abstract

This paper examines the issue of struggling readers and writers, and offers suggestions to help teachers increase struggling students' motivation and metacognition. Suggestions include multisensory methods that make use of the visual, auditory and kinesthetic learning pathways, as well as explicit strategy instruction to improve students' ability to self-regulate and apply learning strategies.

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According to the U.S. Department of Education's 2009 Digest of Education Statistics, there were 2.6 million students, or 5.2 percent of all students nationally, classified with a 'specific learning disability' in 2008 (Samuels, 2010). This category includes disorders in the areas of listening, speaking, reading, writing and mathematics (U.S. Office of Education, 1977, as cited in Lyon, Shaywitz and Shaywitz, 2003). The Department of Education's statistics indicate that of this population of learning disabled students, at least 80 percent have reading disabilities, also referred to as dyslexia, which is "an often-misunderstood, confusing term for reading problems" (Hudson, High and Al Otaiba, 2007, p. 506).

Why do some students struggle with learning how to read and write? Hallahan, Kauffman and Pullen (2010) describe two possible causes for learning difficulties: lack of motivation and problems with metacognition. They explain that unmotivated, passive learners often have an external locus of control and may exhibit learned helplessness, tending to give up due to their belief that they will inevitably experience failure. Metacognition refers to "one's understanding of the strategies available for learning a task and the regulatory mechanisms needed to complete the task" (Hallahan, et al., 2010, p. 200).

The standard practice in schools for identifying students with learning disabilities has been the 'achievement-discrepancy' model, which compares achievement and IQ test scores to determine students in need of intervention. Because students typically had to

complete the primary grades to acquire enough skills to take achievement tests, this approach has become known as the 'wait to fail' model (Hallahan, et al., 2010).

More recently, the Response to Intervention (RTI) model of identifying struggling learners has been utilized. RTI is a school-wide, tiered approach to providing instruction and identifying students who struggle with particular skills. Tier I involves high-quality, evidence-based core instruction and screening which identifies students at risk for failure. Tier II provides early intervention in the form of supplemental instruction for the at-risk students. In Tier III, students who continue to struggle receive more intensive intervention, often provided by special education teachers (Tompkins 2010; Hallahan, et al., 2010).

It is critical to identify students at risk for reading failure early versus waiting for them to fail in the intermediate grades or later. In fact, "students who are not at least moderately fluent in reading by third grade are unlikely to graduate from high school" (Slavin, Karweit, Wasik, Madden & Dolan, 1994, as cited by Herron, 2008, p. 77). Documenting an individual's instructional history is critical to understanding the nature of the observed reading difficulty ... If reading instruction is not informed by an understanding of the gaps in foundational skills and adjusted to teach the missing skills, reading failure typically occurs. On the other hand, a number of recent studies have shown that many children identified as at risk for reading failure in kindergarten and first grade, provided with effective instruction, developed proficient early reading skills. Indeed, Torgeson (2000) reported that effective early interventions have the capability of reducing the expected incidence of reading failure from 18 percent of the school age population to 1.4 to 5.4 percent (Lyon, et.al., 2003, p. 8).

Although less than 5% of students have actual documented reading disabilities, as Lyon, et al., (2003) state, 18% of school children are at risk for reading failure. Differentiation of instruction is one of the important ways teachers can address the diverse needs of all the learners in their classrooms. As Mark Draper, Director of Special Education for Green Hills Area Education Agency in Council Bluffs, IA, stated in a September, 2010 presentation to education students, teachers can't operate under the 'I taught it, why didn't they get it?' mentality. They have to look at additional ways to deliver instruction so their students do get it. Marcia K. Henry (1998) conveyed this same concept in an article about Dr. Samuel Orton, an early twentieth century scientist, physician, and educator who studied dyslexia: "His recurring theme was that the problem is not with the children: all are teachable with appropriate instruction" (p. 7). Another reading researcher put it this way: Most children with reading disability "reflect an instructional dysfunction rather than a constitutional shortcoming of the child" (Calfree 1983, p. 26, as cited in Henry, 1998, p. 16).

Tompkins (2010) explains that teachers can differentiate by modifying content, process or product. This paper is focused on research-based modifications to the instructional *process* which address struggling readers' and writers' different learning styles and target improving their metacognition through teaching of explicit strategies. A number of approaches to multisensory instruction and instructional strategies are reviewed.

The visual, auditory, kinesthetic (and some researchers add tactile) learning styles provide multiple pathways for learning. Multisensory instruction capitalizes on the different learning styles by utilizing all the pathways students have for acquiring knowledge and skills. This approach was pioneered in the early twentieth century at the New York Neurological Institute by Dr. Samuel Orton and his partner, Anna Gillingham (Henry, 1998). Henry (1998) describes how Gillingham and her colleague Bessie Stillman designed instruction in keeping with Orton's neurological theories, which are "...based upon the constant use of associations of all of the following: how a letter or word looks, how it sounds and how the speech organs or the hand in writing feels when producing it" (Gillingham and Stillman 1956, p. 17, as cited in Henry, 1998, p. 3). Gillingham and Stillman's teaching manuals "direct the teacher to assist children in making numerous visual, auditory, and kinesthetic-tactile linkages as portrayed by their 'language triangle.' For example, a child first sees a letter, then traces it, and says the letter name and/or sound. Or, the sound is made by the teacher and the name is given by the pupil" (Henry, 1998, p. 10).

Many educational researchers have adapted the Orton-Gillingham multisensory teaching method and created their own reading programs. Henry (1998) refers educators to a collection of studies by McIntyre and Pickering (1996), which documents "results of ... Orton-Gillingham instructional techniques and its offspring, including Alphabetic Phonics, Herman, Project Read, Slingerland, Spalding, Wilson, and others" (p. 13).

The author of this paper was introduced to multisensory instruction based on Orton-Gillingham at Dr. Joan Stoner's presentation at the Plum Creek Literacy Festival at Concordia University in Seward, NE on October 9, 2010. Dr. Stoner is president of the Nebraska International Dyslexia Association and an Assistant Professor at the University of Nebraska-Lincoln. She described how she helps students utilize the three learning pathways of the 'language triangle' - visual, auditory and kinesthetic. She polled the audience to see who had an easy time and who had a hard time learning to spell, indicating that those who have a hard time lack what she termed 'visual memory.' This echoes spelling researcher J. Richard Gentry's (2004) description of his own inability to 'see words in his mind' in *The Science of Spelling*.

The author of this paper was particularly struck by Dr. Stoner's description of the multisensory technique she uses: struggling students look at a note card with the correct spelling of a word and spell it out loud, while at the same time using their index finger or first two fingers of their dominant hand to write the word on the table, or better yet, in a shallow tray of sand, underlining it as they pronounce the word. This is repeated five times for each word they are learning or struggling with. Dr. Stoner stated that there are more nerves in the finger tips than anywhere else in the body except around the mouth, and that this would cause the message about the correct spelling of the practiced words to travel from the fingers, up the arm and right into the brain. The author immediately thought of her 16-year old son, who is an avid reader but not a natural speller. She asked Dr. Stoner if this multisensory technique was effective just for beginning readers, or if it might work for older people, and Dr. Stoner responded that she has had great success

using her approach to tutor struggling adult readers and spellers, as well as children. Barbara P. Guyer and David Sabatino (1989) also reported reading improvements achieved through an Orton-Gillingham based approach with learned disabled college students who were struggling readers.

At Dr. Stoner's session at Plum Creek, the author of this paper met Julie Craw, a 29-year veteran of first grade teaching in the Lincoln, NE public schools. In response to Dr. Stoner's discussion of multisensory teaching methods, Mrs. Craw offered that she had developed numerous songs, movements and finger plays to help her students learn and remember rules and strategies for reading, writing and math and used them with great success. She stated that when students come back to visit her years later, they remark that they are still singing her songs or using her movements to help themselves remember the rules and strategies she taught them. Marlyn Press (2006) corroborates Mrs. Craw's use of music as a memory tool in the classroom, advocating that songs be used "to help children learn, practice and internalize concepts, ... [and] list the sequence in which a particular activity is to be done" (pp. 307-308).

After Dr. Stoner's session at Plum Creek, the author of this paper approached Mrs. Craw to discuss her teaching style and arranged to visit her classroom to get a firsthand look at how she implemented it with her students. The author was able to observe her in action and video tape her using several of her creative techniques with her class on Thursday, October 21, 2010.

Mrs. Craw's innovative teaching style incorporates a variety of approaches, including multisensory instruction and musical mnemonics. She received her education degree from the University of Nebraska-Lincoln. After a couple of years in the classroom, she was very frustrated with the lack of progress by her struggling students. In 1971, her principal sent her and some colleagues to be trained at the Exemplary Center of Reading Instruction (ECRI) in Salt Lake City. The ECRI website describes their approach to language arts as a highly structured, demonstration-prompt-practice format, students learn not only "what" to do, but also "how" to do it. By using instructional directives, easily remembered classroom routines, and systematic record-keeping procedures, teachers who practice ECRI principles can greatly reduce the amount of time it takes students to learn specific skills. Furthermore, the use of small-group unison responding formats and highly structured practice time routines provides sufficient opportunities for all students to complete their mastery tests.

After incorporating methods learned at ECRI, Mrs. Craw said she began to see growth in her struggling students. She also took classes on Orton-Gillingham-based instruction in Lincoln and incorporated multisensory techniques and kinesthetic/tactile learning materials into her classroom.

The ECRI approach in combination with multisensory instruction is evident in how Mrs. Craw teaches and reviews words with her students. She uses flashcards and has the students read them in unison when she points to the card, stopping to have students practice words they have difficulty with by writing them on their hands, which she calls

their 'magic slates,' as they spell the word out loud then pronounce it together. Mrs. Craw also uses a 'read-spell-read' in unison routine for word and sentence dictation. In small group sessions, Mrs. Craw augments the ECRI-based word practice with the Orton-Gillingham based technique of having students write words on trays of sand as they look at the word flashcard and spell the word out loud.

Mrs. Craw began developing mnemonics, many of them musical, to help herself and her students remember important information, rules and strategies. Every time she noticed students struggling over a particular concept, she would create another mnemonic, which is defined as "a word, sentence, or picture device or technique for improving or strengthening memory" (Lombardi & Butera, 1998, as cited in Wolgemuth, Cobb & Alwell, 2008, p. 1).

Paulette Goll (2004) provides an enlightening overview of the value of mnemonics and how they aid memory in her article, *Mnemonic Strategies: Creating schemata for learning enhancement*. She explains that memories must be encoded to be stored in long-term memory, and that this may happen by "rote or repetition for an immediate purpose ... [or by] elaborate encoding which relates new information to that already in long term memory" (p. 307). To further promote the encoding process, Goll cites R. L. Cohen, who "reports that virtually any form of motor enactment during learning enhances that learning" (p. 309). By employing at least two and usually three learning pathways in each of her mnemonics and reinforcing them through repetition with her class, Mrs. Craw enhances her students' memory encoding process and increases their chances of successfully retaining and retrieving the information and strategies they need to become successful readers and writers. As Mastropieri, Sweda and Scruggs (2000) explain, "mnemonic ... strategies enhance student learning and memory by explicitly connecting new information with prior knowledge by means of visual and acoustic cues. ... [They] can be very versatile and lend themselves to many different uses" (p. 69).

A simple strategy Mrs. Craw uses to help students distinguish between the letters 'b' and 'd' is to have them 'make a bed' with their hands. The left hand makes the letter b and the right hand makes the letter d. Any time there is an issue with reversal, Mrs. Craw prompts students to 'make your bed.' She also has a musical mnemonic by this title.

An example of a helpful mnemonic for struggling writers is "*PLEASE*, which stands for Pick a topic, List your ideas about the topic, Evaluate your list, Activate the paragraph with a topic sentence, Supply the supporting details, End with a concluding sentence" (Milford & Harrison, 2010, p. 327). Another mnemonic strategy that may be useful for intermediate students writing persuasive essays is "*TREE*, which prompts writers to "Tell what you believe (topic sentence), give three or more Reasons (Why do I believe this?), End it (Wrap it up right), and Examine (Do I have all my parts?)" (Graham & Harris, 2005, p. 27).

Teaching students the key syllable division rules is another strategy that teachers can use to help struggling readers and writers (Guyer & Sabatino, 1989). Based on their successful multisensory work with college students with learning disabilities, Guyer and

Sabatino (1989) explain, "A few rules will allow students to learn thousands of words" (p. 431). They recommend using a mnemonic for remembering the six most important rules of syllable division: "*CLOVER* - C Closed syllable (cat), L Consonant -le (table), O Open [syllable] (go), V Vowel [pair] (pair), E Silent e (cake), R R [controlled] vowel (car)" (p. 431). This mnemonic would also be extremely useful for new teachers working on mastering the literacy content they need to help their students learn to read and write!

Rosenthal and Ehri (2008) even describe orthography itself as providing a mnemonic value for learning vocabulary. The authors found that children "learned and remembered the pronunciations and meanings of new vocabulary words better when ... exposed to written forms of the words ... than when they only heard and repeated words" (p. 186).

Jeannine Herron (2008) quotes a 2002 study by Ehri, which shed[s] light on how readers can look at thousands of words and instantly recognize their meaning. According to Ehri, the sight of a word triggers its pronunciation, and it is this pronunciation that has been stored in memory for convenient access along with the meaning of the word. Our lips may not be moving when we read, but our brains are 'talking.' ... Trying to recognize thousands of words from their visual appearance alone (pattern recognition) is almost impossible. Speech memory is the key (p. 78).

Herron (2008) makes a compelling case that children should be taught phonemic awareness systematically through constructing words, or encoding, first, followed by reading the words they have written (decoding).

Mastering the code enables a student to write any word. Even if the student does not spell a word perfectly, someone can usually read it. Successful communication makes clear to the student how words get on paper and what reading and writing is all about. ... Dealing successfully with written language as a writer or reader - the task of literacy - requires automatic skill with the alphabetic code. Practice with encoding enhances facility with decoding; they are two halves of the same learning task (p. 79).

Yolanda Post (2003) echoes Herron's position: "The most engaging way to learn word structure in its relation with speech is to construct a word in writing. "Writing lets children struggle with the function of the letter to capture speech" (p. 143). Students who struggle due to poor visual memory might learn to read through writing practice, since writing involves eye-hand coordination, motor control, as well as the visual modality. What makes writing especially attractive is that a speller controls the content of what will be said as well as its translation into words, whereas the novice reader controls neither (Cox, 1984, p. 105, as cited in Post, 2003, p. 143). A significant benefit to this approach is that "students who have difficulty discriminating symbols and sounds may be helped through emphasis on the kinesthetic involvement found in handwriting" (Guyer & Sabatino, 1989, p. 431).

In her presentation at the Plum Creek Literacy Festival, Dr. Stoner's multisensory approach to helping struggling students included teaching the six syllable types and rules of syllable division, and the "three great spelling rules: the doubling rule, the final e rule and the y rule." In Mrs. Craw's classroom, these rules are introduced and reinforced

through her unique multisensory and mnemonic memory enhancing approach. Although the author of this paper did not ask Mrs. Craw whether she starts with encoding or decoding instruction, it seems apparent that her consistent emphasis on using her students' kinesthetic learning pathway via the 'magic slate,' the trays of sand, and word and sentence dictation enable her students to access the encoding benefits described above.

For readers struggling with fluency and motivation, two multisensory methods of repeated reading, Readers Theatre and Rhythm Walks, offer reading improvement coupled with movement and fun (Peebles, 2007). "Readers Theatre is an authentic venue for rereading the same text several times while motivating the most reluctant of readers" (Tyler & Chard, 2000, as cited by Peebles, p. 578). A Rhythm Walk involves writing appropriate chunks of the selected text on large strips of card stock, which are laid around the room in sequential order; students line up and make their way through the Rhythm Walk by reading aloud (Peebles, 2007). Peebles explains that their purpose is to "draw attention to the natural breaks and phrasing of text through purposeful "steps" or movements, while the repetition through the Rhythm Walk helps build both fluency and comprehension" (p. 579).

Three additional strategies proven to increase readers' and writers' motivation and metacognitive capabilities and in addition, assist teachers in accomplishing the goal of differentiating instruction, are the Self-Regulated Strategy Development (SRSD) model (Harris & Graham, 1996, 1999, 2006), an adaptation of the *Reading Recovery* program (Horner & O'Conner, 2008), and the Peer-Assisted Learning Strategy (PALS) (Fuchs & Fuchs, 2005). These strategies are explicitly taught to students to increase their self-sufficiency in learning and applying new skills and concepts.

In their article, *Explicitly Teaching Struggling Writers: Strategies for mastering the writing process*, Graham, Harris, & MacArthur (2006) explain that the SRSD model was developed to support teachers as they instruct students on how to use educational strategies for tasks such as report writing. This type of teaching could be described as implementing a 'strategy within a strategy.' This approach is effective with diverse groups of students for two reasons: "It makes what is typically a covert process visible and more concrete, and ... students are taught to carry out processes - such as generating, framing, planning and revising text - that most young writers find challenging" (Scardamalia & Bereiter, 1986, as cited in Graham, et al., 2006, p. 294).

Horner and O'Conner (2007) cite a similar set of developmental self-regulation steps for early readers outlined by Schunk & Zimmerman (1996, 1997): "observation, emulation, self-control and self-regulation" (p. 97), and map this onto Marie Clay's *Reading Recovery* techniques of "Elkonin boxes, one-to-one matching, taking words apart, and using analogies" (p. 98) with the goal of helping children become self-regulated readers. They stress the importance of guiding children through the steps and gradually releasing control to them, which could also be described as scaffolding.

Fuchs and Fuchs (2005) developed the Peer-Assisted Learning Strategy (PALS) model in part to assist teachers in implementing differentiation in their classrooms. They cite a number of studies indicating that "children's reading competence improves when they work with each other in a cooperative and structured manner" (p. 34). In the PALS model, Fuchs and Fuchs explain that students of higher and lower ability are paired, and after instruction from the teacher, take turns acting as coach and tutor for one another. The teacher can vary the difficulty of the material or vary the students' pace as needed.

Children who struggle with reading and writing need proactive teachers who will intervene early and find ways to help them overcome their learning challenges. There are abundant evidence-based strategies teachers can employ to motivate and engage their students in successful learning experiences. Multisensory methods which utilize the visual, auditory and kinesthetic/tactile pathways and explicit metacognitive strategy instruction are two proven approaches for struggling learners which teachers should investigate and incorporate into their teaching practice. Waiting for these students to fail is not an option.

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Extracurricular Activities and 504 Plans

George Wilkerson

Abstract

Schools today are faced with an ever-growing number of case law regulating them with regards to students with disabilities. This regulating does not only occur with students with disabilities, but also with their participation in interscholastic sports (Sullivan, 2000). Schools are charged with providing equal education for a variety of students, not just in the classroom but in school programs as well. This article deals with a hypothetical situation that involves a student with a 504 plan. Discussed is what schools can do with regards to students with 504 plans when participating in extracurricular activities.

Extracurricular Activities and 504 Plans

The hypothetical legal problem that will be dealt with in this situation involves a deaf student at a local school. Since the student is deaf he falls within the protections of Section 504 of the Rehabilitation act of 1973 and his disability is defined as “one that limits one of his major life activities” (LaMorte, 2008). Due to this ability, he is entitled to reasonable accommodations in any program receiving federal assistance (LaMorte, 2008). This student has recently moved into the county and would like to try out for the local high school’s football team. His parents’ state that as per his 504 plan the school should provide a sign language interpreter to the student during his football participation, positing that this would be the only way to allow the student to participate without affecting him negatively as well as give him an equal chance at participation.

During the regular school day this student does not receive any accommodations for his disability because he can read lips and has the ability to speak if necessary. However during football the student’s ability to read lips is impacted and his parents request the sign language interpreter for practices when the student is unable to read lips. The school does not want to exclude the student in participating in the extracurricular activities but they decline the parents request for an interpreter for the football practices, claiming that it would be an unnecessary cost for the school and is not an accommodation that the school would meet. After receiving notice of the schools’ decision, the parents file suit against the school board claiming that their son’s fourteenth amendment rights have been violated. They argue that the school board is also in violation of the Rehabilitation Act of 1973, denying their student the opportunity to participate equally based on his disability. The parents feel that without an interpreter their child will not be able to obtain a normal school experience and this will have a detrimental effect on the students’ chances to obtain a college scholarship in athletics.

The question for this situation is not whether the student can participate in football, but rather should the school provide the student with an interpreter for the practices. The

school could exclude the student from participating if they wished, if they felt that the exclusion was to help protect the student or other students. However, Section 504 states that handicapped persons are entitled to reasonable accommodations to help facilitate their participation. Reasonable accommodations include modifications to academic requirements and work conditions. An accommodation is not reasonable, and not required, when it would result in unreasonable risks or costs (La Morte, 2008). In this case the school considers the cost of the interpreter unreasonable and therefore would not provide it for the student participating in the extra curricular activity.

Providing reasonable accommodations for students that qualified under Section 504 is an essential part of plans made for students with disabilities. To provide reasonable accommodation, in this case, the school has the duty to identify barriers that can potentially cause difficulty to the disabled person's satisfaction, after which the school must take appropriate steps to remove those barriers (Lawson, 2008). For reasonable accommodations to be met the school must focus on the barriers and respond to the specific circumstances on a case by case basis. Blanket procedures cannot be made for all students with disabilities. In this case the school has to take into account the individual student's needs and whether denying the student an interpreter for football practice, and not school, would in fact prove a barrier for his enjoyment. The school also has to determine if the cost of the interpreter is reasonable or not. The reasonableness of providing and determining a cost will again depend on the circumstances and will be the duty of bearer in question (Lawson, 2008). Therefore, the judgment of whether or not the interpreter is reasonable or not ultimately lies with the school.

In this hypothetical case the school must look at a few things when determining the reasonableness of the interpreter for football practices. Since the adjustment depends on the circumstances, the school must first decide if the student qualifies for accommodations. Since this particular student does qualify the school must next look at the football program itself. The factors that must be considered when looking at the football program include an analysis of the size of the program, its overall budget compared to the potential cost of the accommodation, the potential disruption to the program that might be caused by the requested accommodation and any other accommodations specifically geared to the individual student (Klungseth, 2007).

For this case the school can determine if the accommodation is too costly compared to the budget for football; in this case, providing an interpreter for every practice could be considered too costly. The school would then look at whether there is potential for disruption with an interpreter at the football practice; again the school could deem this as a disruption since football is a contact sport played without direct assistance from a coach. These particular statements mean that if an interpreter was provided to the student, this action can change the way the program is essentially and fundamentally conducted. This is considered the "exception to the exception," meaning the accommodation is unreasonable if it fundamentally alters the nature of the program (Klungseth, 2007).

With the school making a valid effort to determine reasonable accommodations for the deaf student, their final decision is to not offer a sign interpreter for the student at football

practice, stating the aforementioned factors of cost, potential for distractions, and fundamentally altering the program. However, as recourse the school has the right to make an attempt at an alternate accommodation for the student. Schools may develop alternate ways for students to participate meaningfully in extracurricular activities providing the other accommodation cannot be met (Sullivan, 2000). If alternate accommodations are made, the school must be cautious to offer alternatives only when reasonable accommodations cannot be met and not in lieu of affording the student a change at equal opportunity participation. Therefore, if the school wanted to offer an interpreter for football meetings or a few practices the school could make that arrangement if the other requirements were met.

While there have been cases where schools offered interpreters for deaf students in this particular case the school does not. They have however, offered an alternate route providing the student with an interpreter for a few practices. This satisfies the needs of the students and parents but does not have a negative impact on the football program fiscally, organizationally, or fundamentally. The school followed due process in handling the individual challenges of the student and provided proper due process to the student and family (Klungseth, 2007).

School practitioners should strive to be aware and be legally literate and compliant when dealing with Section 504 (Zirkel, 2009). In regards to student athletes, schools have to be just as diligent to make sure students first qualify under Section 504 for reasonable accommodations and second whether reasonable accommodations are needed and can be successfully implemented. Offering accommodations for students with disabilities can be a difficult, it involves a long and detailed process but it is a process that schools must conduct efficiently and in a timely manner. The school's ultimate goal is to provide an environment where all students have the opportunity to succeed, regardless of disabilities or not, this is in the schoolhouse and in any extracurricular activities provided by the school. Therefore it is the responsibility of the leaders of the school to maintain that environment and make sure that students are afforded equal opportunities, and have a clear understanding of what that entails and how to put that in action.

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Using an Accountability Tool to Improve the Quality of Outcomes on Individual Family Service Plans

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Abstract

This study investigated using a state's Part C early intervention accountability tool to increase the number of outcomes meeting compliance within IFSPs. The Case Review Tool (CRT) was used to examine differences from year one to year three on three measures of quality outcomes. There was no evidence of change in two of the measures, but there was evidence that IFSP outcomes increased in the components of functional and measureable after three years of using the CRT. There was also an increase in the number of outcomes from year one to year three.

Using an Accountability Tool to Improve the Quality of Outcomes on Individual Family Service Plans

Federal programs require monitoring and accountability systems at the state level to assure that early intervention services are delivered to families and their child with disabilities according to standards outlined in the Individuals with Disabilities Education Improvement Act (IDEA, 2004). Accountability serves an important purpose in early intervention programs under Part C of IDEA, the birth to three early intervention systems for infants and toddlers with developmental delays and their families. Every child eligible for Part C services must have an Individualized Family Service Plan (IFSP) based on their strengths and challenges, including outcomes outlining the goals of the upcoming year. Early interventionists, those who work in the birth to three Part C programs, work with families to write outcomes based on the needs of the child and family.

The assessment of functional outcomes embedded in routines is often difficult (Bradley et al., 2007; Jung & Baird, 2003) due to the qualitative aspect of the process. Early interventionists continue to struggle to create quality outcomes on a consistent basis (NECTAC, 2008). The development of outcomes for the IFSP is "complicated by the fact that most professionals in early intervention programs have little training in assessing family needs," which is vital to the determination of meaningful outcomes (Bailey & Simeonsson, 2001, p. 117).

The outcomes are the foundation for services within the IFSP and serve a vital role in meeting the needs of the child. According to IDEA 2004, IFSP's must include measurable results and be developmentally appropriate. In order to this outcomes must

be embedded in family routines, but this is challenging. The early interventionist's role is to assist the team in formalizing outcomes, but teams continue to need performance support in order to meet compliance standards set forth by the federal government to write meaningful, quality outcomes. Despite single professional development training events, early interventionists continually struggle to write quality IFSP's with functional and measurable outcomes (Jung, 2010; McWilliam, 2010).

The purpose of this study is to determine if a tool used for state accountability purpose can increase the quality of IFSP outcomes for early interventionists in the field. One state's monitoring process uses a quantitative tool to merge professional development, technical assistance, and accountability systems. This targets increased adherence to federal regulations and quality outcomes within IFSP's over time.

Literature Review

State Models

Over the years, state systems have used varied approaches to increase the overall quality of IFSP as well as comply with federal regulations. The National Early Childhood Technical Assistance Center (NECTAC) provides resources and guidance to state systems to create improved early intervention and accountability programs. For example, in 2007, Wyoming worked with NECTAC to improve its Part C monitoring and general supervision system. The system included, "multiple methods to: ensure implementation of IDEA and the accountability of regional programs and their providers; identify and correct noncompliance; facilitate improvement; and support practices that improve results and functional outcomes" (Kasprzak, Hurth, Lucas, Marshall, Terrell & Jones, 2010). The result was a new monitoring manual and a procedure manual to help staff understand new state procedures (Kasprzak, et al., 2010).

The state of Missouri also worked with NECTAC to improve Part C services. The focus of the technical assistance from NECTAC was to build family capacity in everyday routines and activities. A plan was made to "include a component to increase the knowledge and skills of local programs and practitioners so that they were better able to develop high quality IFSPs in strengthened partnership with families" (Kasprzak, et al., 2010). As a result, Missouri First Steps IFSP Quality Indicator Rating Scale (QIRS) was developed in 2005 to train staff about quality indicators in IFSPs and the monitoring process. The new system using the QIRS created a monitoring system with built-in training materials for staff and real-time data sharing with the ultimate goal of improving the quality of IFSPs and family centered services (Kasprzak, et al., 2010).

Many states rely on IFSP guidance documents to give support to early intervention teams writing IFSP's in the field. The National Early Childhood Technical Assistance Center (NECTAC, 2008) links together many states' IFSP forms along with supplemental documents on their website for states to access. Some of the IFSPs also include prompts within the document to help teams better understand what information should be included in each IFSP section.

Improving IFSP Quality

There have been few studies that have addressed the development of quality IFSPs. One of these studies addressed the use of IFSP prompts to increase the overall quality of IFSP's. Lee Ann Jung's 2010 study compared IFSP's written before and six months after the IFSP form was revised with added instructions, or prompts. The prompts were added to aid staff to know what needed to be included in each section of the IFSP. The staff received an IFSP manual with a written narrative and guidance in completing the form. The form's outcomes section was revised to include "prompts helping staff to connect routines, priorities, and outcomes" (Jung, 2010, p. 205). The IFSP prompts increased the family-centered language, but the "outcomes written using the revised form were not measurable and remained far below criteria" (Jung, 2010, p. 210). The outcomes improved in their relation to family routines, but their measurability continued to lack progress.

In 2003, Jung & Baird completed a study on IFSP quality. The study reviewed 120 IFSP's and rated the quality of nine indicators using the IFSP Rating Scale (McWilliam & Jung, 2001). Some of the IFSP's in the study were submitted by service coordinators who had attended a three-day training on IFSP development. Jung & Baird note that "although the training might be useful in improving IFSP writing skills, it is not sufficient to result in adequate competency." The three-day training was a much more costly event than the inclusion of IFSP prompts with much the same results.

Performance Support

Studies (Dunst & Raab, 2010; Trivette, Dunst, Hamby & O'Herin, 2009; Dunst & Trivette, 2009) indicate that learning opportunities for professionals that include components of self-assessment, active involvement, and learning over time create effective learning. The best gains in training happen when the professional learner is actively engaged in the process. Also, "the more the learner is engaged in reflection on those opportunities using some external set of standards, the greater the likelihood of optimal benefits" (Dunst et al, 2009, p. 11). Early intervention training opportunities need to be mindful of integrating an evidence-based approach to professional development. Using this information, accountability and professional development could be merged to create an active, ongoing process that integrates with a state's accountability system.

Case Review Tool

In a mid-western state, the accountability system used a Case Review Tool (CRT) to rate compliance measures in IFSP's. The CRT was used to increase overall IFSP quality, including the quality of functional and measurable outcomes, although the CRT's main purpose is for yearly monitoring and compliance checks in all of the state's regional early intervention programs. Individual regions in the state also used the CRT as a training method with their staff to review the varied components of compliance. The state required all regions to use the CRT once a year for compliance accountability. Within each region, local early intervention staffs were internal reviewers. External reviewers also reviewed IFSP's for compliance using the CRT. The state Part C office provided feedback to the regions with both sets of data.

All regional staff had access to the CRT, which provides guidance in writing the IFSP through a narrative rubric. The CRT was also used for yearly accountability purposes. This makes the CRT a tool that integrated the professional development, accountability, and technical assistance systems of the state to improve quality outcomes over time.

Purpose of Study

The purpose of this study was to determine if using an accountability measurement tool over time increased the number of outcomes meeting compliance within IFSP's. Specifically, did the use of this tool make a difference from year one to year three in IFSP outcomes that (a) correlate with family priorities and concerns, (b) are functional, measurable, and related to everyday routines, and (c) are developmentally appropriate?

Method

Participants

This was a retrospective study reviewing data extracted from the mid-western state's accountability tool. In total, 40 charts were chosen randomly from the early intervention system case review process for yearly accountability monitoring. A comparison of 20 charts from 2007, year one of implementation of the accountability tool, and 20 charts from 2010, year three of the process, was completed.

Procedures

Instrument. The instrument is the Case Review Tool (CRT) which contains a 4-point rating scale with ratings of 1-unacceptable, 2-minimally acceptable, 3-practice standard, and 4-best practice. The CRT was adapted from the Missouri First Steps IFSP Quality Indicator Rating Scale (2005). There were three measures from the CRT included in this study. The first measure, Measure A, was child and family outcomes correlate with family priorities and concerns relative to the child's development. The second measure, Measure B, was child outcomes are functional, measurable (including criteria, procedures, and timelines) and related to participation in everyday routines. The third measure, Measure C, was child outcomes are developmentally appropriate and can realistically be achieved in the given review period. A summary of each of the three measures as well as a description of a 1, 2, 3, and 4 rating are provided in Figure 1 (Figure 1 was unable to be uploaded online—Please contact the author for image).

This rating was used on each outcome included on the IFSP. For example, if an IFSP had five outcomes, items from the three measurements were used for each of the five outcomes. Furthermore, the second measure includes a rating on two individual components (functional and measurable). Functional was defined as related to participation in every day routines and activities. Measurable was defined as including criteria, procedures, and timelines. Using the comments section of the tool, data was collected identifying whether each of the components of functional and measurable were contained in each outcome on the IFSP.

Rating procedures. Use of the CRT was implemented in 2007 in a mid-western state. The CRT is used by external and internal evaluators within the state. The external evaluators consisted of contracted technical assistance team made up of a minimum of three expert early intervention consultants. The internal evaluators were at the program level. These internal evaluators were made up of a team of a minimum of three early interventionists in the following roles: early intervention program staff, service coordinator, and experienced parent (regionally hired parent working with the early intervention program).

Each year, a random number of charts, depending on the size of the program, are sampled across the state. The external and internal evaluation teams each review one third of the sample. The final third of the sample is reviewed by both sets of evaluators to establish inter-rater reliability. Each team submits the CRT ratings electronically to the state Part C office. The results of the rates are compiled by the Part C data officer into a regional report.

Data Collection

The outcome measure ratings and comments from the three identified measures were collected from 20 random charts from year one and 20 random charts from year three. The rating measurements of one, two, three, or four, were placed into an excel spreadsheet for further analysis. The comments on each outcome were reviewed to determine whether it contained functional and measurable components. If the component was present, it was coded as a 1, and if it was not present, it was coded as a 0.

Data Analysis

Descriptive statistics were generated for year one and year three of the CRT items. An univariate analyses of variance (ANOVA) was used to investigate the change in individual items between groups year one and year three. In this analysis, the three measures from the CRT were used to compare year one to year three. Further analysis was completed to understand the impact of the components of functional and measurable on the CRT measures, and the relationship between the number of outcomes in year one and year three was examined. All analyses were conducted using PASW 18.0.

Results

Descriptive statistics for each outcome are presented in Table 2 for the components of measurable and functional based on a zero or one scale (zero, not met and one, met) including means and standard deviations for year one and year three. Table 3 presents the descriptive statistics for the individual measures from the CRT of (a) family concern, (b) functional/measurable, and (c) developmentally appropriate, based on the 1-4 scale used in the CRT.

Univariate results are presented in Table 4 and 5. Table 4 showed no significance between the CRT measures of family concerns, $F(1,38) = .060$, $p = .807$, and developmentally appropriate, $F(1,38) = .069$, $p = .794$ from year one to year three. Significance was indicated for the measure of functional/measurable, $F(1,38) = 4.77$, $p =$

.035, but this was a decrease from year one to year three with use of the CRT. There was a significant difference from year one to year three in the number of outcomes, $F(1,38) = 11.37, p = .002$, indicating that more outcomes were written per IFSP in year three than year one.

The functional/measurable item on the CRT includes both functional and measurable components in the score for the rating, and the rating encompasses all of the outcomes for the specific IFSP being rated. Since there was significance in this exploratory study, the components were analyzed individually to determine the impact of each component on the rating, and to analyze each individual outcome. The data from year three on Table 5 showed significance for both functional and measurable components of outcomes with measurable, $F(1,228) = 10.287, p = .002$, and functional, $F(1,228) = 19.124, p = .000$. More data was available in year three due to the increased number of outcomes on IFSP's.

Since there was significance for the number of outcomes increasing from year one to year three, a follow-up analysis of linear regression was completed for the number of outcomes (Table 6) in comparison to the average score. Even though this linear model proved to be a poor fit when looking at Figure 1 for estimated marginal means, there was a slightly higher increase for scores for IFSP's with five or more outcomes. It appeared that five or more outcomes indicated higher scores on the CRT than four outcomes or less. Therefore, a univariate test was completed for average score (Table 7) of the three measures on the CRT with the number of outcomes, $F(1,39) = 5.198, p = .028$. The results were significant, in that there was an increase in average IFSP score when there were five or more outcomes versus four or fewer outcomes.

Table 2
Descriptive Statistics of Measurable and Functional Components for Each Outcome

	Year 1			Year 3		
	M	SD	N	M	SD	N
Measurable	.54	.50	94	.74	.44	136
Functional	.37	.49	94	.65	.48	136

Table 3
Descriptive Statistics for Measures of Family Concerns, Functional/Measurable, and Developmentally Appropriate Outcomes

	Year 1			Year 3		
	M	SD	N	M	SD	N
Family Concerns	2.80	.62	20	2.85	.67	20
Functional/ Measurable	2.45	.76	20	1.95	.69	20
Developmentally	2.80	.62	20	2.85	.587	20

Appropriate Number of Outcomes	4.70	1.78	20	6.80	2.14	20
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Table 4

Univariate Results for Effects of the Family Concerns, Functional/Measurable, and Developmentally Appropriate Measures from the Case Review Tool (CRT)

		Sum of Squares	Df	Mean Square	F	Sig
Family Concerns	Between Groups	.025	1	.02	.060	.807
	Within Groups	15.75	38	.41		
	Total	15.77	39			
Functional/ Measurable	Between Groups	2.50	1	2.50	4.77	.035
	Within Groups	19.90	38	.52		
	Total	22.40	39			
Developmentally Appropriate	Between Groups	.025	1	.025	.069	.794
	Within Groups	13.75	38	.362		
	Total	13.77	39			
Number of Outcomes	Between Groups	44.10	1	44.10	11.37	.002
	Within Groups	147.40	38	3.88		
	Total	191.50	39			

Table 5

Univariate Results for the Effects of the Measurable and Functional Components on Individualized Family Service Plan (IFSP) Outcomes

		Sum of Squares	Df	Mean Square	F	Sig
Measurable	Between Groups	2.225	1	2.225	10.287	.002
	Within Groups	49.322	228	.216		
	Total	51.548	229			
Functional	Between Groups	4.422	1	4.422	19.124	.000
	Within	52.725	228	.231		

Groups
Total 57.148 229

Table 6

Linear Model of Number of Outcomes vs. Average score of the Family Concerns, Functional/Measurable, and Developmentally Appropriate Measures from the Case Review Tool (CRT)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig
Corrected Model	1.814 _a	8	.227	.846	.571
Intercept	207.045	1	207.045	772.503	.000
Outcome Number	1.814	8	.227	.846	.571
Error	8.309	31	.268		
Total	284.00	40			
Corrected Total	10.122	39			

a. R Squared = .179 (Adjusted R Squared = -.033)

Table 7

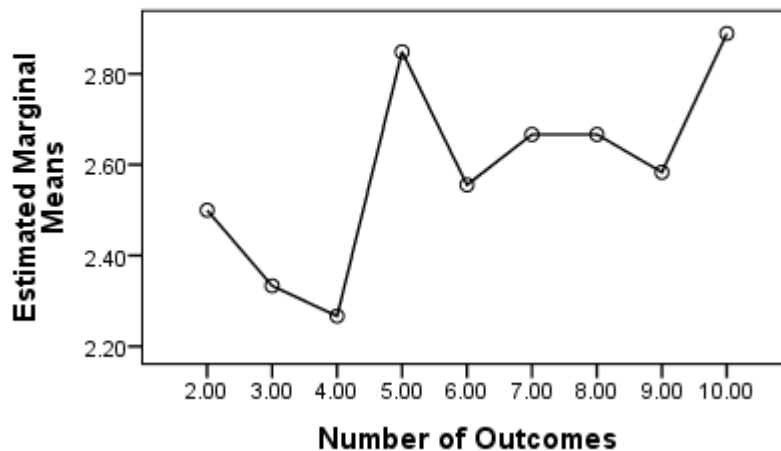
Univariate results of Estimated Marginal Means for Average Scores of the Three Case Review Tool (CRT) Measures of Small, less than four, and Large, five or more, Cases.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig
Corrected Model	1.218 _a	1	1.218	5.198	.028
Intercept	203.985	1	203.985	870.534	.000
Outcome Number	1.218	1	1.218	5.198	.028
Error	8.904	38	.234		
Total	284.00	40			
Corrected Total	10.122	39			

a. R Squared = .120 (Adjusted R Squared = -.097)

Figure 1

Estimated Marginal Means for Average Score of the Three Case Review Tool (CRT) Measures



Discussion

Results of this study indicate that using a state accountability system did not show evidence of improving Measures A or C. Significance was found in the measure (b) child outcomes that are functional, measurable, and related to everyday routines, but this indicated a decrease in the rating on the CRT.

IFSP Outcome Components

It is important to note that there was more data in year three (N=136) than in year one (N=94) as seen in Table 2. This was due to an increase in the number of outcomes in IFSP's in year three. In year one, the outcomes were very broad and general. As staff skill increased in year three, the outcomes were more specific, functional, and tied to everyday routines, thus requiring additional outcomes.

This study found that the individual components of functional and measurable increased with use of an accountability tool. This may be due to the North Dakota early intervention system's use of internal evaluators at the program level using the CRT tool. Since the internal evaluators are early intervention staff, it is more likely that the CRT is used for guidance when writing IFSP's as a team. In addition to this, the state Part C staff promotes the use of the CRT in training and supporting staff performance.

Number of Outcomes

Earlier studies (Jung & Baird, 2003; McWilliam, Ferguson, et al., 1998; and McWilliams 2010) report that early interventionists need additional help in writing meaningful outcomes. McWilliams (2010) reports that measurability and quality are compromised

when there are fewer than three outcomes, and the outcomes written tend to be more general. When there are fewer outcomes, it seems that the outcomes may be less specific with little meaning to the family. Broad, general outcomes also provide less information useful for programming.

The findings of this study, as discussed earlier, show that prior to using an accountability tool in year one, early interventionists had developed fewer outcomes. Over time with the use of the accountability tool, the IFSP's were written with more functional and measurable outcomes related to everyday activities. Figure 5 demonstrates that when IFSP's had five or more outcomes, they received higher ratings on the CRT. When early interventionists write outcomes related to participation in everyday family activities, more outcomes are necessary. When outcomes are meaningful, the number of outcomes increase as necessary to meet the family's needs. The increase in the number of outcomes may also provide more specific guidance for programming to the early intervention team.

Conclusion

Following the three year use of an accountability tool describing the specific criteria to meet compliance with federal and state regulations, IFSP's in this study included more outcomes that met the criteria for (b) child outcomes that are functional, measurable, and related to everyday routines. No change was noted in (a) outcomes that correlate with family priorities and concerns and (c) outcomes that are developmentally appropriate.

One finding that came out of this study is that when five or more outcomes were included on an IFSP, the measurable and functional components increased. This needs further study to determine why this happened and how to support teams to create outcomes that are not so general they could appear on any IFSP.

Implications for Practice

This study highlighted the need to review all measures of the CRT to examine the connection between the measures and meeting compliance. The focus should be on further investigating whether using an accountability measurement tool over time increases early interventionists' ability to write IFSP's that meet state and federal compliance measures. In addition to this, it will be important to determine if this makes a difference in the quality of services the family receives.

Family assessment is an important step in creating specific, meaningful outcomes. Each of the three measures studied were related to information the IFSP team gathers from family assessment. Since the state in this study has recently emphasized incorporating the use of a formalized family assessment, the Routines-Based Interview (McWilliams, 2009), there may be opportunities to look at the link between these measures and family assessment in the future.

Previous studies focused on intensive in-person training and IFSP prompts to promote quality IFSP's, including well-written, functional, measurable outcomes. The key to improving IFSP quality may be in using a state's available accountability and monitoring structures to train staff in a connected system that can be used for broader purposes, such as also increasing the quality of the IFSP and the outcomes within it. Jung suggests that although the "revision of the IFSP form may improve quality, it is not a substitute for high-quality professional development and technical assistance" (2010, p. 207). Thus, one method may not be the answer to improving the quality of IFSP's, but a well-coordinated effort including many of the state's resources might lead to better results.

Research in professional development gives us evidence-based information about how to effectively train early intervention professionals. The CRT integrates accountability and professional development into an active, ongoing process over time. Using the CRT in daily work makes it a functional, dynamic tool that aids interventionists in continually framing what is needed to write a quality IFSP. The CRT is used for monitoring purposes on a yearly basis, and regional teams are actively involved in the process. The ongoing use of the CRT in the field and for accountability builds relevance to staff at the local level.

Perhaps state systems need to find what Dunst & Trivette (2009) refer to as a "middle ground" where accountability is merged with training and technical assistance experiences. Accountability should be a part of the continuum of professional development to increase quality of the IFSP and service delivery to families.

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