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**JOURNAL of the
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Faculty Epistemological Beliefs as a Mediator to Attitudes Toward Persons with Disabilities

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&
William Y. Lan**

Abstract

Previous research has indicated that university faculty members' attitudes towards students with disabilities varies depending on specific background qualities of those faculty, including gender, type of field (soft or hard science), and type of study (pure or applied). We examined epistemological beliefs as a possible mediator between faculty background qualities and attitudes towards individuals with disabilities. 223 faculty members at a large, public research intensive university in the Southwestern, United States, were surveyed to evaluate their attitudes and epistemological beliefs as well as to collect background information. Structural equation modeling was utilized to compare two competing models, one with background directly impacting attitudes and a second with epistemological beliefs acting as a mediator of this relationship. The mediating model provided a significant improvement over the fit of the first model, which supported the mediating role of epistemological beliefs in predicting faculty members' attitudes towards students with disabilities.

Faculty Epistemological Beliefs as a Mediator of Attitudes Toward Persons with Disabilities

The number of college students with disabilities has tripled over the past twenty-five years as an estimated nine percent of all entering college freshman report having a disability (Olney, Kennedy, Brockelman, & Newsom, 2004; Palombi, 2000). Since the Rehabilitation Act of 1973, this population of students continues to increase in step with legislative mandates such as the Americans with Disabilities Act (ADA) and the Individuals with Disabilities Education Act (IDEA) requiring inclusive primary and secondary education for students with disabilities (HEATH Resource Center, 1999). While this population of students continues to increase in its enrollment in institutions of higher education, faculty member, disability service providers, and administrators in higher education must have an orientation to serve this special population of students beyond those tangible accommodations such as cement curb cuts and accessible building entrances but in fostering an attitudinal environment of trust and respect where these students can achieve their academic potential (Aune, 2000).

Upon entering institutions of higher education, college students with disabilities encounter a unique set of issues and concerns that their able-bodied peers do not confront. Among these issues and concerns are faculty attitudes towards them and their disabilities. The attitudes and

beliefs of educators in particular have been indicated as being associated with their future behavior towards students. In the K-12 educational setting, teacher beliefs have been associated with both the quality and delivery of instruction (Pajares, 1992). In the postsecondary educational setting, faculty beliefs and attitudes are not studied with the same frequency. Research regarding teaching in higher education has indicated that institutional approaches to promotion and tenure can influence the attitudes and beliefs of faculty members towards teaching (Fairweather, 2002). While some institutions of higher education have suggested that teaching as service should be more highly valued in the promotion and tenure decision process to improve faculty attitudes and beliefs towards teaching, some state legislatures have suggested the elimination of tenure to ensure long-term teaching effectiveness (Fairweather, 2002). In his study of faculty members obtained from the National Study of Postsecondary Faculty, Fairweather (2002) concluded that faculty attitudes and beliefs towards teaching are associated with teaching productivity (measured in terms of contact hours with students), especially in relation to institutional agendas.

With regard to attitudes and beliefs towards students with disabilities, Greenbaum, Graham, and Scales (1995) have indicated that faculty members seem to be uninformed about college students with disabilities and lack understanding about the nature of disability. College students with disabilities have echoed this finding reporting being generally dissatisfied with the level of knowledge and awareness that faculty members and administrators have regarding the issues and concerns of students with disabilities (Wilson, Getzel, & Brown, 2000). Students with disabilities have highlighted these issues and concerns especially in regards to the classroom accommodations process reporting added stress, anxiety, and poorer academic performance as outcomes (Kruse, Elacqua, & Rapaport, 1998). In reviewing the literature regarding faculty attitudes towards this special population of students, Rao (2004) concluded that amongst faculty that there is a, “need to be better informed about disabilities and students with disabilities” (p. 197).

Faculty members are not all alike in their understanding and attitudes towards this special population. Faculty members from certain academic fields such as education and the liberal arts reflected more positive attitudes towards students with disabilities than faculty members in engineering and business (Schoen, Uysal, & McDonald, 1987). More recently, Leyser, Vogel, Brulle, and Wyland (1998) considered academic field or discipline a significant factor in predicting the level of contact and knowledge that instructors had in regards to students with disabilities. In surveying 420 faculty members, Leyser et al. (1998) examined variables such as instructor gender and academic discipline as influencing the willingness of faculty to accommodate college students with disabilities. Nelson, Dodd, and Smith (1990) directly assessed the willingness of faculty to accommodate students with learning disabilities in relation to academic field. In a survey of 107 faculty members, Nelson et al. (1990) found that College of Education faculty members reported being the most willing to accommodate students with disabilities followed by those faculty members in the arts and sciences, then those faculty members in business. Fonosch and Schwab (1981) noted similar findings that Education faculty reported more positive attitudes towards students with disabilities than instructors in engineering and the natural sciences. Academic discipline appears to be related to the willingness of faculty members to accommodate college students with disabilities.

Studies regarding the relationship between instructor gender and faculty attitudes towards students with disabilities appear to have mixed findings. Several studies have found that female instructors to have more positive attitudes towards students with disabilities (Fonosch & Schwab, 1981; Leyser et al. 1998; Askamit, Morris, & Leunberger, 1987) while other studies have indicated no differences in faculty attitudes towards students with disabilities by instructor gender (Schoen et al., 1987; Nelson et al., 1990).

Differences in faculty attitudes towards students with disabilities have been found to be influenced by the information-seeking behaviors of faculty members (Leyser et al., 1998). Faculty who exhibit more information-seeking behaviors such as requesting additional training for teaching students with disabilities, appear to have more positive attitudes towards students with disabilities compared to faculty who exhibit less information-seeking behaviors in regard to pedagogical and awareness training (Leyser et al., 1998). As such, higher frequencies of information-seeking behaviors have been associated with more sophisticated or less naïve epistemological beliefs (Whitmire, 2003). In a qualitative study interviewing undergraduate students, Whitmire (2003) discerned that undergraduate students with medium to high sophistication in epistemological beliefs more often tended to pursue the exploration of topics for personal understanding and exhibit other information-seeking behaviors than students with medium to low sophistication in epistemological beliefs. Thus, the information-seeking behaviors of faculty to acquire additional training in regards to students with disabilities may be similarly associated with the epistemological beliefs faculty members hold on learning process and knowledge development. It can be postulated that faculty members who believe learning occurs in a rapid and single-trial process would be less flexible when accommodating special needs of students with disabilities than those who believe learning is a gradually progressive process. Conversely, faculty members who believe people's competence or intelligence are fixed entities may be less patient when teaching students with disabilities than those who believe students' competence and intelligence are amendable and can be improved with effort. The purpose of this study was to examine whether the epistemological beliefs of faculty members can be considered a mediating variable in their attitudes towards students with disabilities as a function of faculty's gender, discipline, and level of contact that have been found to be related to faculty attitudes towards persons with disabilities.

Method

Participants

An online survey was sent to a sample of faculty members in a large, public university located in the Southwestern United States over the course of a six-month period. Of these faculty members, 223 volunteered to complete the online survey in its entirety by following a link contained in a recruitment e-mail message. The majority of the participants identified themselves as European American (83.8%, $N = 187$) with 54.1% ($N = 122$) reporting as male. A total of 48 different academic departments were represented contained with sixteen colleges and schools at the university studied.

Measures

We employed three measures to assess faculty attitudes towards students with disabilities, level of contact along with attitudes, and their epistemological beliefs. To measure faculty attitudes

towards students with disabilities, the researchers administered Form O of the *Attitudes towards Persons with Disabilities* (ATPD) scale (Yuker & Block, 1986). The ATPD is a unidimensional scale, which assesses how respondents view persons with disabilities as a group. Form O of the ATPD is a 20-item, six point, Thurstone-type scale with no midpoint creating a forced-choice response format. Examples of a positively-scored item and a negatively-scored item to be reversed are provided respectively:

- Disabled people are the same as anyone else.
- Most disabled people feel sorry for themselves.

Higher scores on this instrument indicate more positive attitudes towards persons with disabilities while lower scores indicate less positive attitudes towards persons with disabilities. Form O of the ATPD has been reported as having an internal consistency coefficients ranging from $\alpha = .67$ to $\alpha = .95$ (Yuker & Block, 1986). For this study, the internal consistency of scores for Form O of the ATPD was $\alpha = .85$.

To measure the epistemological beliefs of faculty, we employed the Epistemic Belief Inventory (EBI). The EBI is a 28-item, five point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Schraw, Bendixen, & Dunkle, 2002). The researcher summed the score for each individual while omitting any individuals who did not complete the instrument from analysis thus not including any missing values. Examples of a positively-scored item and a negatively-scored item to be reversed are provided respectively:

- Absolute moral truth does not exist.
- Really smart students don't have to work as hard to do well in school.

Higher scores on this instrument indicate more sophisticated epistemological beliefs while lower scores indicate less sophisticated, more naïve epistemological beliefs. The reported internal consistency of scores for this instrument was $\alpha = .83$ (Schraw et al., 2002). For this study, the internal consistency of scores obtained from the EBI was $\alpha = .76$.

For the variable of academic discipline, the different academic departments were categorized as either a hard or soft discipline according to Biglan's classification system (Biglan, 1973a & 1973b). In surveying 168 faculty representing 36 different academic disciplines, Biglan (1973a) asked faculty to classify each academic discipline "on the basis of the similarity of the subject matter," (p. 196) as deemed by the faculty members studied. The categorization of a discipline as hard or soft refers to the degree of paradigmatic development of a field (Biglan, 1973a; 1973b). Disciplines such as chemistry, biology, and mathematics, for example, were categorized as hard while disciplines such as political science, psychology, and fields in the fine arts were categorized as soft. In this study, the distribution of hard versus soft disciplines was 97 faculty members and their respective departments classified as hard and 126 faculty members and their respective departments classified as soft. The distribution of pure versus applied disciplines was 94 faculty members and their respective departments classified as pure and 129 faculty members and respective departments classified as applied. If a department could not be classified according to Biglan's system, the response was removed from the discipline phase of the analysis, which resulted in five responses being omitted from analysis.

Procedure

As the researchers did not have direct access to the e-mail addresses of faculty members across colleges of the university, participation of faculty members was solicited by requesting

individual departmental and college administrators to forward the recruitment e-mail message to their respective listservs of faculty members. The researchers also posted a similar recruitment message that was distributed via a university-wide faculty e-mail listserv system after university administrative approval. After collected, data were recoded and reversed per instrument instructions. The researchers summed the score for each individual and any missing values were deleted listwise in SPSS (v. 12.0). No modifications were made to any of the instruments.

Analyses

To examine the initial relationship between the faculty characteristics and faculty attitudes towards persons with disabilities, we tested a weighted least square means and variance (WLSMV) structural model using MPLUS (v.4.20) on the model without epistemological beliefs as a mediating variable (Figure 1). The categorical variable of faculty characteristics, gender and discipline, were dummy coded to be included in the analysis with female coded as 1 and male as 2, *soft* fields as 1 with *hard* fields as 2, and *applied* fields as 1 with *pure* fields as 2. After examining the relationship of faculty characteristics with faculty attitudes towards persons with disabilities, we then tested the model introducing epistemological beliefs as a mediator. In performing our analyses, five statistics reflecting fit will be reported: the chi-square (χ^2) test statistic; the root mean square error of approximation (RMSEA); the weighted root square residual (WRMR), the Tucker Lewis Index (TLI), also known as the Non Normed Fit Index (NNFI); and the Comparative Fit Index (CFI). No post hoc model modifications were made.

Results

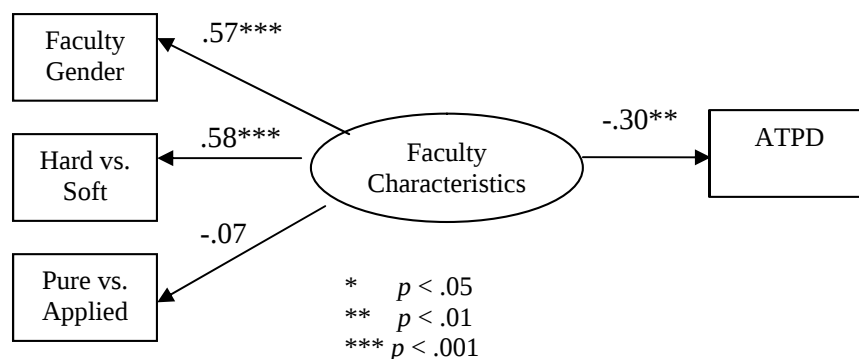
Without Epistemological Beliefs as a Mediator

In examining the relationship between faculty characteristics and faculty attitudes towards persons with disabilities, the data appear to fit the model well. The chi-square goodness-of-fit statistic was not significant indicating that the data may fit the model ($\chi^2(5) = 5.888, p = .32$). The root mean square error of approximation (RMSEA) as compensating for the effects of model complexity was .028, which according to Browne and Cudek (1993) indicates an acceptable fit of the model being less than or close to 0.05. A WRMR value of .673, which suggests a good fit in models containing both continuous and categorical variables as being less than .90 (Muthen & Muthen, 2001). The value of Tucker Lewis Index (TLI), also known as the Non Normed Fit Index (NNFI) was .951 and the value of the Comparative Fit Index (CFI) was .973. Hu and Bentler (1999) note that fit index values of .95 (or close to it) are indicative of good fit. Thus, the model appears to fit the data well. All but one path, from *pure* vs. *applied* variable to ATPD, was significant at the .05 level or less as shown in Figure 1.

Faculty Characteristics & Attitudes towards Persons with Disabilities

The strength and nature of the relationship between faculty characteristics and faculty attitudes towards persons with disabilities was moderately negative ($p < .01$) indicating an inverse relationship with the coding used in the analysis. This result suggests that less positive attitudes toward persons with disabilities are more likely associated with male faculty members in *hard* disciplines than female faculty members in the *soft* disciplines. This finding supports previous research indicating that faculty members who are males and in *hard* fields have less positive attitudes towards persons with disabilities.

Figure 1. Path diagram without epistemological beliefs as a mediator



With Epistemological Beliefs as a Mediator

In examining the relationship between faculty characteristics and faculty attitudes towards persons with disabilities with epistemological beliefs as a mediator, the data appear to fit the model well. The chi-square goodness-of-fit statistic was not significant indicating that the data may fit the model ($\chi^2(7) = 7.995, p = .33$). The root mean square error of approximation (RMSEA) as compensating for the effects of model complexity was 0.025. A WRMR value of .664, which suggests a good fit being less than .90 (Muthen & Muthen, 2001). The value of Tucker Lewis Index (TLI), also known as the Non Normed Fit Index (NNFI) was .977 and the value of the Comparative Fit Index (CFI) was .988. Thus, the model appears to fit the data well. All but two paths, the path from the manifest variable of pure vs. applied to the latent variable of faculty characteristics and the path from the latent variable of faculty characteristics to ATPD, were significant at the .05 level or less as shown in Figure 2.

Faculty Characteristics & Epistemological Beliefs

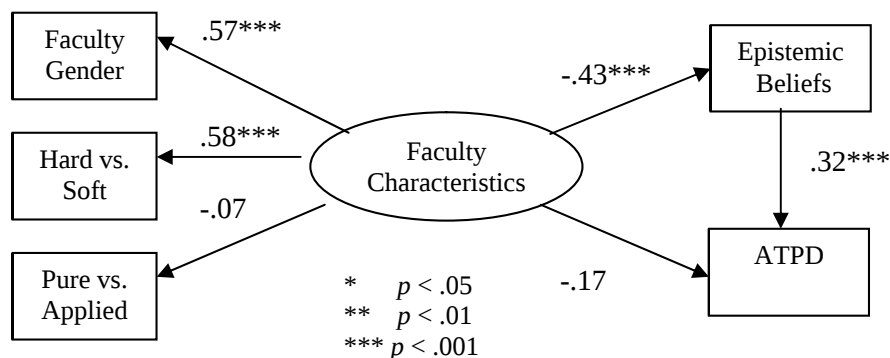
The nature and strength of the relationship between faculty characteristics and epistemological beliefs indicated a moderately negative relationship ($p < .001$) such that naïve and less sophisticated epistemological beliefs are more likely to associated with male faculty members and those faculty members in hard fields than female faculty members and those faculty members in the soft disciplines, which is consistent with findings regarding differences in epistemological beliefs by academic discipline (e.g. Hofer, 2000; Jehng, Johnson, & Anderson, 1993; Paulsen & Wells, 1998).

Epistemological Beliefs & Attitudes towards Persons with Disabilities

The nature and strength of the relationship between epistemological beliefs and faculty attitudes toward persons with disabilities indicated a moderately positive relationship ($p < .001$) indicating that as the epistemological beliefs of faculty members became more sophisticated that their attitudes towards persons with disabilities were more positive. This finding suggests that epistemological beliefs can be considered a mediator in faculty attitudes towards persons with disabilities as a function of instructor gender and discipline classification (*hard* vs. *soft*). Adding epistemological beliefs as a mediating variable in the model, the relationship between faculty characteristics and faculty attitudes towards persons with disabilities became non-significant indicating the significant relationship between faculty characteristics in the model shown in Figure 1 was primarily accounted for by the relationships between the faculty characteristics and

epistemological beliefs and between the epistemological beliefs to their attitudes toward students with disabilities.

Figure 2. Path diagram of epistemological beliefs as a mediator



Discussion

The results of this study suggest that the epistemological beliefs of faculty members may be considered a mediating variable among faculty characteristics, defined as the gender and discipline classification of the faculty member, and their attitudes towards persons with disabilities. From these findings, special educators, disability service providers, and administrators in higher education can confront possible misapprehensions regarding students with disabilities associated with less sophisticated epistemological beliefs while specifically targeting those faculty members based upon faculty characteristics. Creating a dialogue between faculty members and students with disabilities must begin with disability service providers and administrators in higher education being aware of the cognitive factors that influence faculty attitudes towards persons with disabilities beyond those faculty characteristics such as instructor gender or classification of academic discipline.

For special educators, disability service providers, and administrators in higher education, the establishment of epistemological beliefs as a mediator to faculty attitudes towards persons with disabilities provides direction to future training and interactions with faculty members in accommodating students with disabilities. For instance, an individual holds less sophisticated (or more naïve) epistemological beliefs in the dimension of *Quick Learning* believing that individuals cannot acquire knowledge at all unless they can acquire it quickly such as upon the first exposure to material (Schommer, 1990). College students with learning disabilities, attention deficits, and other cognitive impairments may be considered unable to acquire knowledge or learn in the classroom if a faculty member holds such a less sophisticated epistemological belief in quick learning. If a faculty member holds less sophisticated epistemological beliefs in the dimension of *Innate Ability* (Schommer, 1990), then they would ostensibly believe that ability is primarily static and innate thus students would be considered as either having ability or not. Faculty members with less sophisticated beliefs in this dimension may view students requesting accommodations as not having the innate ability to learn in the college classroom thus unworthy or unable to succeed in higher education.

Additionally, in holding less sophisticated epistemological beliefs in the dimension of *Simple Knowledge* (Schommer, 1990), a faculty member may believe that knowledge is simple and clear cut. The unique and diverse nature of disability may be difficult for such faculty members to confront in accommodating students with disabilities, especially those students who have disabilities with an episodic or chronic symptomology whereas accommodations would not be required all the time or in all instances. Faculty members with extremely naïve epistemological beliefs in the dimension of simple knowledge may as a result unintentionally transmit a put-out or shut up message to students with disabilities in requesting accommodations. This put-out or shut up message can be readily seen in the disability accommodations statements in the syllabi of some faculty members, where a faculty member will require that students request accommodations in the first week (or by some other arbitrary deadline) or not be able to receive accommodations at all for the remaining duration of the course. The imposition of an arbitrary deadline implies that requesting accommodations is a simple and straightforward act for college students with disabilities involving no level of complexity with respect to the individuated nature of disability and response to disability.

Limitations

Age or years of experience in higher education would have been relevant variables to include in the model with regard to faculty characteristics in this study. Generally, the attitudes of faculty members towards persons with disabilities become more positive with years of experience in higher education (Leyser et al., 1998) along with their epistemological beliefs becoming more sophisticated (Schommer-Aikins, Duell, & Hutter, 2005; Schommer, 1993). Future research should consider these variables in examining the relationship between faculty attitudes towards persons with disabilities and their epistemological beliefs. Additionally, previous level of contact with persons with disabilities has been indicated as influencing faculty attitudes towards persons with disabilities (Leyser et al., 1998). Previous contact with members of the disabled community has been indicated as being associated with faculty members being more comfortable with college students with disabilities and the accommodations process (Satcher, 1992).

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Relationship Between Service Coordinator Practices and Early Intervention Services

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Abstract

The influence of six service coordination variables on the number, types, and intensity of early intervention services was examined in a study of 346 IDEA Part C program participants in 46 states. The study and selection of the predictor and criterion variables was guided by both previous research and current beliefs about the role service coordination plays in influencing the type, frequency, and amount of early intervention services. Results showed that only the number of persons developing children's IFSPs and how long service coordinators worked with families were related to the early intervention services measures. Findings are discussed in terms of the disassociation between service coordination and the provision of early intervention services.

Relationship Between Service Coordinator Practices and Early Intervention Services

Service coordination is a required service as part of the provision of early intervention to infants and toddlers in IDEA Part C programs (Bruder, 2005). In most states (Harbin et al., 2004), service coordinators play a central role in orchestrating the development of Individualized Family Services Plans (IFSPs). IFSPs must include, among other things, a description of the early intervention services necessary to meet child and family needs; the dates, intensity, and duration of services; and the major outcomes, criteria, procedures, and timelines for ascertaining the extent to which the outcomes have been achieved. These requirements would lead one to expect a high degree of congruence between the roles and responsibilities of service coordinators and the types and intensity of early intervention services (see e.g., Bailey, 1989; Park & Turnbull, 2003; Zipper, Weil, & Rounds, 1993). Surprisingly, there have been only a few studies examining the relationship between what service coordinators do and what early intervention services Part C program participants receive.

Jung and Baird (2003) investigated the influence of a number of service coordinator variables on the ways in which IFSPs were written and found that (a) months of service coordinator experience and (b) training in service coordinator roles and responsibilities were the two variables most related to the quality of how IFSPs were written. Studies of the content of IFSPs have consistently found that they contain mostly child-related services and outcomes (e.g., Boone, McBride, Swann, Moore, & Drew, 1998; McWilliam, Ferguson, Harbin, Porter, & Vaderviere, 1998).

Farel et al. (1997) examined the extent to which service coordinators view IFSPs and the IFSP process as useful. Surprisingly, one third of the service coordinators surveyed judged the IFSPs as not being useful documents. To the best of our knowledge, there have been no studies specifically examining the relationship between service coordinator roles and responsibilities (Bruder, 2005) and how service coordinator practices are related to the number, types, and intensity of early intervention services.

The purpose of the study reported in this paper was to determine which service coordinator practices were related to the provision of early intervention services. The study was conducted as part of the Research and Training Center (RTC) on Service Coordination (Bruder, 2005; Bruder et al., 2005). The main focus of the RTC is to study and describe current models of service coordination, identify the practices and outcomes that are associated with different service coordination models, and promote adoption and use of service coordination models that evidence indicates optimizes positive benefits to infants and toddlers and their families.

The relationship between six service coordination variables and three early intervention services measures was the focus of investigation. The service coordination variables included length of time working with a family, frequency of contact between the service coordinator and the family, frequency of service coordinator contact with early intervention providers, service coordination model (dedicated and independent, dedicated but not independent, and blended), service coordinator family-centered practices, and scope of service coordinator practices (Dunst & Bruder, 2006). We also assessed the extent to which the number of IFSP team members developing IFSPs was related to variations in early intervention services. The criterion early intervention services measures included the number of child services received, intensity of these services, and the frequency of provision of special instruction, speech therapy, occupational therapy, and physical therapy.

The study and selection of the predictor and criterion measures was guided by both previous research and contemporary beliefs about the role service coordination plays in influencing the type, frequency, and amount of early intervention. Previous research indicates, for example, that structural variables including frequency of contact between program providers and families influences the number of services provided to the families' children (Dunst, Brookfield, & Epstein, 1998). We therefore hypothesized that more frequent contact between service coordinators and both parents and providers would be associated with differences in the provision of early intervention services.

More and more states are adopting dedicated service coordination models (Hurth, 1998) which are thought to constrain the amount and frequency of early intervention services (Bruder, 2005). Based on this assumption, one would expect that dedicated service coordination models would be associated with less frequently provided early intervention services. In contrast, others (Adams, 2003; Park & Turnbull, 2003) have contended that the use of service coordination models that are blended will result in more services provided more frequently. Adams (2003) found that indeed blended models were associated with differences in early intervention. Independent service coordination was expected to be related to fewer and blended service coordination was expected to be related to greater amounts of early intervention services.

Research has also shown that differences in service coordinator models is associated with differences in service coordinator practices (Dunst & Bruder, 2006). In this previously conducted study, dedicated and independent service coordination was associated with considerably less child and family supports and resources compared to blended service coordination. Research has also consistently found that the helping practices used by early intervention practitioners are associated with differences in program participant outcomes. In a meta-analysis of more than 45 studies, the use of family-centered practices was related to a host of program benefits (Dunst, Trivette, & Hamby, 2007). We therefore expected service coordinator practices to influence the provision of early intervention services.

The particular variables we included in the analyses reported in this paper are considered some but certainly not the only service coordination variables that might influence early intervention services (see especially Bruder, 2005; Park & Turnbull, 2003). The study described in this paper is part of a line of research investigating the ecology of service coordination, and the factors influencing the characteristics and consequences of different approaches to service coordination (Bruder, 2005; Bruder et al., 2005). The goal of this research is to disentangle and unpack those aspects of service coordination that matter most in terms of influencing early intervention services. This study was considered a first step toward meeting this goal.

Method

Participants

Parents and other caregivers were recruited by early intervention providers and programs using mailing lists obtained from State Infant/Toddler Program Coordinators. Invitations were sent to randomly selected programs in those states (N = 46) where the Part C Coordinators provided mailing lists. Interested providers distributed surveys to program participants who returned the surveys to the investigators in postage paid envelopes. Surveys were returned from parents and other caregivers in all the states where surveys were sent.

The sample included 346 parents and other primary caregivers of IDEA Part C early intervention program participants. Table 1 shows the background characteristics of the study participants. The respondents were, on average, about 33 years of age, and had completed an average of about 14 years of formal schooling. The majority of the respondents were either married or living with a

partner, and about half of the survey respondents reported that they worked outside the home either full or part time.

The respondents' children were, on average, two years of age at the time the respondents completed the surveys. Based on information provided by the respondents' on the surveys, the majority (70%) of the children had identified disabilities (chromosomal aberrations, physical disabilities, brain damage, autism or PDD, health-related problems, sensory impairments, or multiple disabilities), and the other children (30%) had global developmental delays, delays in only one developmental domain or were at-risk for delays.

Survey

The participants completed an investigator-developed survey that included both closed- and open-ended questions. The survey included questions for ascertaining service coordination model, length and frequency of contact between the service coordinator and both the family and early intervention staff, and sections asking respondents' to rate the service coordinators' family-centered practices, the extent to which service coordinators used different practices with their children and family, the degree to which his or her child received different early intervention services, and who developed the IFSP. Information provided by the survey respondents in each of these areas was used to construct the independent and dependent measures described next.

Predictor Variables

Contact between service coordinators and program participants and early intervention staff.

Respondents indicated how often the service coordinator working with the respondents' child/family had contact with his or her family. This information was used to code frequency of contact on an 8-point scale ranging from *at least once a week* (7) to *less than twice a year* (0). How often the service coordinator had contact with the early intervention program staff or providers which was used to code frequency of contact on a 7-point scale ranging from *at least once a week* (6) to *a couple of times a year/don't know* (0). Parents knowing the frequency of contact between the service coordinators and early intervention staff or providers was used as a proxy measure of parent/service coordinator communication. Respondents were also asked to indicate for the practitioner currently providing service coordination how long he or she had been working with the family in years and months.

Service coordinator model. Respondents were asked the name of the agency or program for whom the service coordinator worked, the name of the agency or program providing early intervention services to the respondent's child and family, and to indicate whether any early intervention program staff or provider working with the respondents' child or family was the assigned service coordinator. The combination of program or agency, service coordinator role/responsibilities, and early intervention staff roles/responsibilities, were used to assign respondents to one of the three service coordination models (dedicated and independent, dedicated but not independent, blended). Families were assigned to the dedicated and independent model of service coordination (hereafter referred to as the *dedicated model*) if the role of the service coordinator was dedicated to service coordination only, and the agency providing service coordination was independent from service provision. Families were assigned to the dedicated but not independent model (hereafter referred to as the *intra-agency model*) if

Table 1

Background Characteristics of the Study Participants

Background Characteristics	Number	Percentage	Background Characteristics	Number	Percentage
<i>Respondent</i>			<i>Employment Status</i>		
Biological Mother	322	93	Not Working	196	57
Biological Father	8	2	Working Part Time	92	27
Foster Mother	7	2	Working Full Time	58	17
Grandmother	5	1	<i>Ethnicity</i>		
Other	4	2	Caucasian/White	301	87
<i>Respondent Age (Years)</i>			Latino/Hispanic	16	5
<20	8	2	African American	10	3
21-30	104	44	Biracial	7	2
31-40	185	53	Asian American	5	1
41-50	44	13	American Indian	3	1
50+	4	1	Other	3	1
<i>Respondent Education</i>			<i>Child Age (Months)</i>		
Elementary School	5	1	0-12	31	9
Middle School	15	9	12-24	112	32
High School	59	23	24-36	177	51
Some College	107	31	36+	26	8
College Graduate	94	27	<i>Child Diagnosis</i>		
Masters/Doctorate			Established Disability	242	70
Degree	66	19	Developmentally		
<i>Marital Status</i>			Delayed/At Risk	104	30
Married/Living with					
Partner	318	92			
Single/Separated/					
Divorced	28	8			

the service coordinator provided only service coordination but worked for the same agency or program providing early intervention services. Families were assigned to the *blended model* if the service coordinator provided both service coordination and early intervention services. Contrast coding (Cohen, Cohen, West, & Aiken, 2003) was used to determine the influence of service coordination model on early intervention services.

Family-centered helpgiving. Respondents were asked to indicate on a 5-point scale (ranging from *never* to *always*) the extent to which the service coordinators working with their families used four relational (e.g., “really listens to my concerns”) and four participatory (e.g., “provides me information I need to make good choices”) family-centered helpgiving practices (Dunst & Trivette, 1996). Relational practices include behaviors typically associated with good clinical practice (compassion, active listening, empathy, etc.) and practitioner attributions about family member’s competence, strengths, and capabilities. Participatory practices include behaviors that involve family member’s choices and decision making, use of existing abilities, and the development of new capabilities needed to obtain desired resources, and family/practitioner collaboration as the basis for enabling family competence and capacity. Principal components factor analysis of each set of ratings produced single factor solutions for both the relational ($\alpha = .92$) and participatory ($\alpha = .90$) practices. The sum of the ratings for each set of items were used as the family-centered practices measures.

Scope of service coordinator practices. The types of practices used by the service coordinators was ascertained by asking respondents to indicate the extent to which service coordinators used nine different practices (IFSP oversight, early intervention services oversight, service provision, encouraging family decision making, information provision, advice and guidance about child learning, transition planning, health care information/assistance, and child care information/assistance). Two practice items were included for each type of service coordinator activity (Bruder & Dunst, in press; Dunst & Bruder, 2006). Each item was rated on a 5-point scale ranging from *never true* to *always true* that the service coordinator engaged in the practice. A second order factor analysis (Bourque & Clark, 1992) was used to discern whether a summated practices score was justified. The second order factor analysis produced a single factor solution ($\alpha = .92$) indicating that a summated score could be legitimately be calculated.

IFSP team. The number of IFSP team members was determined by asking respondents to indicate who developed the IFSP from a list included on the survey. The IFSPs were developed by the respondents (95%), service coordinators (94%), speech therapists (65%), the respondents’ spouses or partners (57%), physical therapists (56%), occupational therapists (53%), teachers or special instructors (45%), program directors or administrators (20%), physicians (17%), other family members (13%), and nurses (8%).

Criterion Variables

Respondents were asked to indicate on a 7-point scale ranging from *does not receive* (0) to *receives almost everyday* (6) how often their child received physical therapy, occupational therapy, speech/language therapy, special education/special instruction, nursing services, and nutritional services. A number of early intervention services measures were constructed from the respondents’ ratings. Number of services was determined by summing the number of times a respondent indicated his or her child received any of the services regardless of frequency.

Intensity was determined by summing the ratings for all services received, where the summated score was used as a proxy measure for the aggregate frequency of early intervention services. The individual ratings for special education/special instruction, speech therapy, occupational therapy, and physical therapy were used as the measures of the frequency of provision of each early intervention service.

Method of Analysis

Primary and secondary analyses were conducted. First, hierarchical multiple regression analysis by sets was used to ascertain the relationship between four sets of independent variables and the early intervention services measures (Cohen et al., 2003). The sets were frequency of contact (length of service coordinator involvement with the family, frequency of service coordinator/family contact, frequency of service coordinator/early intervention practitioner contact), service coordinator model (dedicated vs. intra-agency, dedicated vs. blended), service coordinator practices (relational helpgiving, participatory helpgiving, scope of service coordinator practices), and number of IFSP team members. At each step in the analyses, the multiple R^2 , increments (I) in R^2 for the variables in each set, and the standardized regression coefficients (β) for the variables in the sets were examined to identify the relative importance of the variables constituting the focus of analysis. The order of entry of the sets of variables into the analysis was as follows: (1) service coordinator contact (length and frequency), (2) service coordination model, (3) service coordinator family-centered practices and scope of practices, and (4) number of IFSP team members. Second, we performed stepwise regression analyses with all seven service coordination measures as separate predictors to ascertain if the effects of any one variable was masked by the hierarchical ordering.

In both the primary and secondary sets of analyses, the increments (I) in the R^2 and standardized regression coefficients (β) were used as the measures of the sizes of effect of the predictor variables. I is a measure of the proportion of variance accounted for in a criterion measure by the predictors (Cohen et al., 2003). β is part of r family of effect sizes (Rosenthal, 1994), and is an index of the strength of the relationship between the predictor and criterion measures (the larger the β , the stronger the relationship).

Results

Patterns of Service Provision

Respondents indicated that their children received an average of 2.69 different services ($SD = 1.37$). Table 2 shows the percentage of children who received different early intervention services. Speech services were provided to 76% of the children followed by physical therapy (61%), occupational therapy (56%), and special instruction (51%). The respondents' children were provided few nutritional (15%) or nursing (10%) services. Among the children receiving other than nursing or nutritional services, the largest majority (72%) received early intervention services a couple of times a week (20%), once a week (40%), or every couple of weeks (12%).

Table 2

Percentage of Children Receiving Early Intervention Services

Type of Service	Number of Children	Frequency of Service Provision					
		Almost Everyday	Twice A Week	Once A Week	Every Couple of Weeks	Once A Month	Less Than Once A Month
Speech Therapy	263	5	25	42	15	7	6
Physical Therapy	211	1	23	37	18	14	8
Occupational Therapy	192	1	19	44	19	10	7
Special Instruction	175	13	25	37	17	6	3
Nutrition Services	51	8	0	10	4	28	51
Nursing Services	34	29	6	15	9	21	21

Number and Intensity of Services

The hierarchical multiple regression results are shown in Table 3. In both analyses, the length of time a service coordinator worked with the respondents' families and the number of IFSP team members were the only service coordination variables related to the dependent measures. In both analyses, the longer the service coordinator worked with the families and the larger the number of persons developing the IFSPs, the more services a child received and the more frequently the children received the services. Examination of the standardized regression coefficients indicated that the number of IFSP team members was a relatively more important variable in explaining the relationship between service coordination and early intervention. This finding is particularly robust given the fact that the influence of the IFSP measure was entered last in the analyses after the covariation between the other service coordination measures and the early intervention measures was removed.

In only one instance was any other service coordination measure related to an outcome. The more frequently the service coordinators had contact with the families, the less frequently children received early intervention services.

Both stepwise regression analyses produced identical results. The larger the IFSP team, the more services the children received ($\beta = .41$, $I = 22\%$, $p < .0001$) and the more frequently the children received the services ($\beta = .40$, $I = 20\%$, $p < .0001$). In addition, the longer the service coordinators worked with the families, the more services the children received ($\beta = .24$, $I = 6\%$, $p < .001$) and the more frequently the children received the services ($\beta = .21$, $I = 4\%$, $p < .001$).

Table 3

Multiple Correlations (R^2), Increments (I) in R^2 and Standardized Regression Coefficients (β) for the Relationship Between the Service Coordinator Measures and Number and Intensity of Early Intervention Services

Service Coordination Measures	Number of Services			Intensity of Services		
	β	R^2	I	β	R^2	I
<i>Frequency of Contact</i>		.12**	.12**		.11**	.11**
Length of Family Involvement	.34***			.30***		
Service Coordinator/Family	-.05			-.12*		
Service Coordinator/EI Providers	.07			.06		
<i>Service Coordination Model</i>		.13**	.01		.11**	.00
Dedicated vs. IntraAgency	.02			.02		
Dedicated vs. Blended	.09			-.06		
<i>Service Coordinator Practices</i>		.14**	.01		.12**	.01
Participatory Helpgiving	.00			.07		
Relational Helpgiving	-.11			-.14		
Scope of SC Practices	.11			.03		
<i>IFSP Team</i>						
Number of Team Members	.42***	.28***	.14***	.41***	.26***	.14***

* $p < .05$. ** $p < .001$. *** $p < .0001$.

Types of Early Intervention Services

These analyses were restricted to frequency of special instruction and speech, occupational, and physical therapy because so few children received nursing or nutrition services (see Table 2). Table 4 shows the results of the hierarchical multiple regression analyses. The longer a service coordinator worked with the respondents' families, the more frequently the children received all four types of services. Similarly, the larger the number of persons developing the IFSP, the more often the children received all four types of services. The relative importance of the IFSP team measure was once again found in these analyses. For three of the four early intervention services, the standardized regression coefficients for the IFSP measure were larger than for any other predictor variable. Additionally, this variable accounted for significant amounts of variance in the early intervention services measures after the effects of the other measures were removed from the analyses.

Provision of special instruction and speech therapy were the only practices related to more than two types of service coordination measures. The more frequently the service coordinators had contact with service providers, the more frequently the children received special instruction. In contrast, the more frequently the service coordinators had contact with the respondents' families, the less often children received speech therapy.

In the stepwise regression analyses, the number of persons developing the IFSPs was the one variable most associated with the frequency of physical therapy ($\beta = .25$, $I = 8\%$, $p < .001$), occupational therapy ($\beta = .32$, $I = 14\%$, $p < .0001$), speech therapy ($\beta = .19$, $I = 6\%$, $p < .001$), and special instruction ($\beta = .24$, $I = 6\%$, $p < .001$). The longer the service coordinators worked with the families, the more frequently the children received physical therapy ($\beta = .11$, $I = 2\%$, $p < .05$), occupational therapy ($\beta = .19$, $I = 4\%$, $p < .001$), and special instruction ($\beta = .12$, $I = 2\%$, $p < .05$). For speech therapy, the more frequently the service coordinators had contact with the respondents' families, the less frequently children received this service ($\beta = -.14$, $I = 2\%$, $p < .01$).

The frequency of provision of special instruction was the only early intervention service influenced by another service coordination measure. Provision of service coordination using a dedicated service coordination model was related to less frequent provision of special instruction ($\beta = -.16$, $I = 3\%$, $p < .05$).

Table 4

Multiple Correlations (R^2), Increments (I) in R^2 , and the Standardized Regression Coefficients (β) for the Relationship Between the Service Coordination Measures and Types of Early Intervention Services

Service Coordination Measures	Early Intervention Service											
	Physical Therapy			Occupational Therapy			Speech Language Pathology			Special Instruction		
	β	R^2	I	β	R^2	I	β	R^2	I	β	R^2	I
Frequency of Contact		.03*	.03*		.07**	.07**		.05	.05**		.04**	.04**
Length of Family Involvement	.17**			.27***			.14**			.16**		
Service Coordinator/Family	-.06			-.03			-.16**			-.05		
Service Coordinator/EI Providers	.00			.00			.00			.16**		
Service Coordination Model		.04	.01		.08	.01		.06	.01		.06	.02*
Dedicated vs. IntraAgency	.09			.09			.03			-.13**		
Dedicated vs. Blended	-.03			.00			-.11			.00		
Service Coordinator Practices		.05	.01		.09	.01		.06	.00		.07	.01
Participatory Helpgiving	.14			-.03			.07			-.02		
Relational Helpgiving	-.05			-.06			-.16			-.08		
Scope of SC Practices	-.03			.11			.03			-.04		
IFSP Team												
Number of Team Members	.25***	.10	.05***	.33***	.18	.09***	.17**	.09	.03**	.24***	.12	.05***

* $p < .05$. ** $p < .01$. *** $p < .000$

Discussion

In all six primary and secondary analyses, just two predictor variables were consistently related to the number, intensity, and types of early intervention. The larger the number of persons developing the IFSP, the more likely the children received more services more frequently, and the longer the service coordinators worked with the respondent families, the more services the children received, and the more frequently they received the services. Perhaps more important is the finding that there was very little shared variance between the three primary sets of service coordination measures (service coordinator contact, service coordination model, and service coordinator practices) and the early intervention measures. In almost every case, the different service coordination variables included in the analyses accounted for a very small amount of variance in the early intervention measures. In contrast, the IFSP team variable accounted for the majority of variance in the dependent measures, even after the shared variance between the service coordination and early intervention variables was partialled from the total amount of shared variance.

The findings reported in this paper showed that what service coordinators do and which early intervention services children receive is not related in a manner that one would expect based on either IDEA Part C rules and regulations or claims by service coordination enthusiasts (see Ooms & Owen, 1991a; Ooms & Owen, 1991b). The findings from this study are consistent with those reported in a previous paper (Dunst & Bruder, 2002). In that study, both parents and practitioners viewed the processes and outcomes of service coordination and early intervention (as well as natural environments) as more different than alike. Taken together, the findings from this study together with our previous study “paint a picture” of a disassociation between service coordination and early intervention.

The disassociation between service coordination and early intervention seems especially problematic given the fact that states devote so much time, energy, and money to the service coordination side of the Part C program equation (e.g., Goldhammer & Mackey-Andrews, 2004). Perhaps we did not measure those service coordination variables that would explain the consequences of the practice. This isn’t likely the case. In two other studies, we found that the very same service coordination measures used in the present study were related to both the scope and intensity of service coordinator practices (Dunst & Bruder, 2006). The results from our studies, taken together, indicate that the influences of what service coordinators do and how service coordination is practiced is limited in terms of its effects on the number, intensity and types of child-level early intervention services (see Leventhal, Brooks-Gunn, McCormick, & McCarton, 2000). This is supported by the fact that a single variable--the number of persons developing the IFSP--proved to be the most important determinant of the number, intensity, and types of early intervention services.

The findings from this study are perhaps best understood by considering three possible results that could have been obtained: (1) service coordination would be related to fewer

and less intense amounts of early intervention services, (2) service coordination would be related to more intense and a greater variety of early intervention services, and (3) service coordination would be unrelated to early intervention. The first scenario is the basis of a dedicated and independent service coordination model (Marrone, n.d.). According to the logic of this model, service coordination, among other things, is used to contain the frequency and amount of early intervention services by providing oversight and monitoring of early intervention. Findings from our study do not support this assumption.

The second scenario is the basis for an assumption that service coordinators can insure that children receive the services they are rightfully entitled to, and that by ensuring that these services are included on an IFSP, children will receive the number, frequency, and intensity of prescribed services. Findings from this study provide limited support for this assumption. The reality is that children receive early intervention services as the result of the proclivities of others (namely, the membership of the IFSP team) rather than being influenced by the practices of service coordinators.

The third scenario is the basis of the assumption that service coordination and early intervention are complementary but distinct types of practices. Findings from this study provide support for this contention. Perhaps the best service coordinators can do, at least as they currently practice their crafts, is help families gain access to services (Marks, 1994). The amount, frequency, types and intensity of services appears to be at the discretion of others. This may be the case, at least in part, because service coordinators are not well prepared or qualified to decide the specifics or quality of service provision (Austin, 1990; Bruder, 2005).

There is most certainly a need for further study of the relationship between service coordination and the provision of early intervention. Notwithstanding the need for additional study, the question must be asked whether the time and money being spent on service coordination as it is currently conceptualized and practiced is worth the investment? Findings from this investigation as well as results from other studies (see Berson, Vargo, Dailey, Zheng, & Powell, 2003; Dunst & Bruder, 2006; Smull & Smith, 1994) suggest that the cost/benefit ratio may not warrant the kinds of resources being expanded on service coordination. Monies may be better spent on more qualified professionals providing state-of-the-art, evidence-based early childhood intervention and family support (e.g., Dunst, 2000; Guralnick, 1997; Odom & Wolery, 2003).

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Individualized Interventions: When Teachers Resist

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Abstract

One of the most frustrating situations encountered by special needs professionals is when teachers are unwilling to carry out individualized reinforcement plans for children. Though they are clearly required by law to comply, some individuals still resist our most determined efforts at advocacy. The purpose of this paper is to examine some possible causes of such resistance, and to offer some suggestions for working with these troublesome individuals.

Individualized Interventions: When Teachers Resist

Administrators, consultants, and other service personnel in the schools often encounter resistance to the use of idea of using a reinforcement program to intervene with inappropriate behaviors or poor academic performance. This attitude becomes a problem when the offenders undermine a potentially successful intervention, or even refuse outright to participate. As child advocates, we are then placed in a very frustrating position: how do we combat this brick wall of resistance? And do we even have the right to interfere, when it appears, as it sometimes does, to be a cultural phenomenon? The purpose of this article, then, is to discuss some of the causes of resistance to reinforcement programs, and to propose some means of coping with those who present this attitude.

Reasons for Resistance

“They should do it because they are supposed to do it!”

Most people who assert this really mean, “They should be afraid NOT to do it!” In the United States, this belief has its roots deep in the traditions of its earliest European settlers. Many were religious zealots whose God was a wrathful and punishing being; the imminent danger of hell figured prominently in their daily life. The residue of this philosophy can be seen in much of our modern-day society; the basis for our criminal justice system, for example, is that a fear of punishment ought to be a deterrent. Our educational system also has a punitive focus. Many schools still employ corporal punishment, and it was not so long ago that children were humiliated with dunce caps and similar abuses.

Today the culprits are often teachers trained in a more directive, authoritarian model of teaching, or whose own upbringing was very punitive. These resisters are motivated by a

fear of change and a need to cling to tradition; they also have a secret conviction that altering their style would be equivalent to condemning their own parents.

Sometimes it may be helpful to have a sympathetic conversation with them. Reflective listening, when we restate in our own words what the other person just said, is a good method for letting them know that they were heard. This helps them to be less antagonistic and more open to other ideas. Agree with them: *Yes, they should do this, but they aren't, are they? We have to get them there, and this is how we do it.* These resisters may be willing to try your ideas if you can show them that as the appropriate behavior is established, the reinforcer would be faded so that eventually, the behavior would be sustained through naturally occurring events in the environment.

Some have interpreted the Bible as supporting their philosophy. They may vary the theme somewhat, to, "It's not fair to the other kids!" Those who are sincere in their religious beliefs can be given food for thought by a reference to the parable of the Prodigal Son; this dissolute runaway was welcomed home with a huge party, but his well-behaved brother was reprimanded for his lack of understanding.

In another variation on the previous theme, some will declare that, "*I never got rewarded!*" Here, loyalty to parents is the overriding factor. Their mantra is, *What my parents did was right*, and the subtext of this is, *otherwise, I wouldn't be so perfect!* Tradition and respect for parents, plus sometimes a bit of anger all play into the picture. It may be helpful to point out that their parents did the best they knew how, and would certainly have employed this "new research" if they had known about it.

"They should just want to do it!"

Some educators have been attracted to a philosophy that condemns any reinforcement as ultimately destructive. This attitude was fueled by a book entitled *Punished by Rewards: The Trouble With Gold Stars, Incentive Plans, A's, Praise, and Other Bribes* (Kohn, 1999). The theory behind this movement is that children should be rewarded by an internal satisfaction, or intrinsic motivation. Kohn frequently uses the word *bribe* as a synonym for reinforcement, and states that such extrinsic motivators destroy a child's naturally occurring intrinsic motivation.

In the first place, a bribe is actually quite different from a reinforcer. A bribe is given in advance of a desired behavior, in an attempt to influence someone to act in a particular way. Implied in this definition is that the requested behavior is in *the briber's* interest.

Reinforcers, on the other hand, always come *after* the behavior. Reinforcing wire makes the concrete sidewalk stronger; the big steel girder holding up the overpass may come to mind as well. In addition, the purpose of a reinforcer is to increase the probability of the behavior recurring in the future, which is not usually the scenario with a bribe. Finally, reinforcers are always designed to only follow behaviors occurring under explicit conditions.

In addition, Kohn (1999) describes reinforcement as "...to provide a reward for people when they act the way we want them to." (p. 4), implying that the behavior change is for our own benefit. Unless we are extremely unethical, the reinforced behavior is something that will be of direct positive benefit to the student, not to the person administering the reinforcement. It is not likely that those of us in the school setting would be successful in modifying a behavior that was only to our own benefit; it would certainly be noticed and reported by peers and other teachers. Of course, people inadvertently condition children to inappropriate behaviors all the time, but that kind of conditioning is why we need behavior modification in the first place!

Does an external reward destroy a person's internal motivation? We must first understand the nature of intrinsic motivation. There may be some people who are born with a lust for knowledge, but most of us who are academically accomplished learned that *knowledge is good*, through being reinforced early on by our parents. Each time our parents praised us for singing the alphabet song, or holding up the correct number of fingers for our age, we were learning that *knowledge is a good thing!* We learned that our parents were pleased when we displayed more knowledge. They smiled, laughed, hugged us, bought us ice cream, gave us attention, urged us to display it to grandma. As we grew older, and this happened more and more frequently, we became *conditioned to respond internally to learning events*. This is an example of classical conditioning a la Ivan Pavlov, who inadvertently trained his laboratory dogs to salivate when a bell rang. Dr. Pavlov had a bell on the lab door which rang whenever he entered (usually to feed them); after a few weeks, they had associated the bell ringing with eating, to the degree that they had an automatic internal response whenever they heard it.

Those people who are "intrinsically motivated," have actually been well trained to this response. Whenever they accomplish something for which they were frequently reinforced in the past, they re-experience the pleasure they got from that reinforcement. Thus, students who are *intrinsically motivated* to achieve are basically hearing their parents' cheering in their head every time they earn a good grade.

So if a child is not already intrinsically motivated, what do we do? If you ask this of the teacher or parent who espouses this belief, they are usually stymied. Most will just repeat themselves. Once, when I was working with some particularly obstinate teachers, I said in exasperation, "So, we just tie concrete blocks to their feet and dump them in the lake?" This of course did little to advance my case, but it did relieve my feelings at the time.

Again, if we can put it in terms of their own belief system, we will have a better chance of getting them to do what we want – which is to *help the child*. We must listen to their position, which does have merit, and agree that it is best if the child is internally motivated. Then we must explain how we create that internal motivation: by implementing a reinforcement program! When we provide reinforcement for the desired behaviors on a consistent basis, over time, the behavior becomes paired with the good feelings associated with the external reinforcement. Once the behavior is established, we can fade the reinforcers, leaving the child, in the teacher's terminology, *intrinsically motivated*.

It is also important to explain to them that, due to the length of time the child has behaved incorrectly, she will probably need some strong reinforcement to dislodge her from her habits. Thus, a gruff “good job!” from the teacher will not likely be sufficient at first.

Hidden Agenda

This is the person who actually desires the failure of the intervention. It is important to tread carefully until you can determine what the person really wants. They may be attempting to have the child removed from their responsibility. There could be two reasons for this. One may be that they truly believe the child needs more intensive (special) services, which they do not feel competent to provide. They may be defensive that they have not been able to help the child; these people want everyone to reassure them that the child is indeed so faulty that they can’t be blamed for giving up.

For this teacher, the best route is to re-focus the consultation on the one thing everyone can agree upon: *this child needs help!* Keep re-focusing as needed. The teacher will probably respond to sympathetic listening. Ask him to describe in detail all the things he has tried. Agree that he has tried many things, and reassure him that he has reason to feel frustrated. Then, move on to *how do we help this child?*

It is important to empower this teacher. Remind him how important he is to this child; he knows the child better than anyone else, he has the child’s trust, and *he* is the child’s *best chance of help*. Have a very structured plan ready, with every possibility accounted for. Then discuss how it could be incorporated into his classroom routine. Be willing to make reasonable changes so it will work better for him, but that won’t materially affect the intervention. Assure him that you will help him get it started, and will be available to assist at any time along the way – then make sure that you follow through.

The second possibility is that the teacher has developed an animosity to the child. This is probably the hardest resistance to deal with. She may want the child punished in some way, or out of her room altogether. Either will make this teacher feel vindicated.

In this case, the child may remind her of someone else or some negative event. He may have an “attitude” that she finds particularly provoking. If so, get her to define “attitude.” Try to ascertain specifically what it is about the child that is so offensive to her. Oftentimes the child has some oppositional behavior that the teacher finds particularly disrespectful, which she has countered with unenforceable demands, resulting in a standoff. If you can discover the specifics, you have leverage; this behavior should be the first target. If the teacher can be convinced that this behavior can be brought under control, she may perceive that she could “win” this battle. If this behavior can be modified, then you have opened the door to other interventions in her class.

Conclusions: Reinforcement for the Implementers

The best method to ensure cooperation is to provide plenty of reinforcement for your implementers. Find ways to praise their participation, but make sure you do not come

across as condescending. Send a note to their supervisor, mentioning their cooperation, and cc it to them. Reinforce small moves in the right direction.

Try to see things from their viewpoint, and work from there. We cannot move people into a different philosophical place by berating, demanding, or threatening; we can meet them where they are and walk along with them to better understanding.

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***No Child Left Behind's Implementation in Urban School Settings:
Implications for Serving Students with Emotional and Behavior Disorders***

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Abstract

The No Child Left Behind Act (NCLB, 2002) has generated controversy and support since its inception. Parents, teachers, researchers, authors, advocates, protesters, and politicians have shared views and opinions based on “political” beliefs, biases, and anecdotal and research based evidence that supports their stance. In attempt to sidestep political attacks or endorsements of NCLB, we reviewed the literature regarding NCLB’s basic principles, its issues in urban school settings, and its impact on students identified as emotionally and behaviorally disturbed who receive special education services in urban school settings. We also discussed relevant recommendations, methods, and strategies to increase a schools capacity and student outcomes.

***No Child Left Behind's Implementation in Urban School Settings:
Implications for Serving Students with Emotional and Behavior Disorders***

On January 8, 2002, *The No Child Left Behind Act* (NCLB; P.L. 107-110) was enacted, holding all schools and school districts accountable for their students’ educational outcomes (Abedi, 2004) by requiring them to adhere to rigorous standards (Beaver, 2004; Cohen, 2002), and compelling them to achieve adequate yearly progress on behalf of all of their students (Abedi; Berry, 2004; Linn, 2003; Rose, 2004). However, as with any federal law which “seldom escape[s] professional criticism” (Algozzine, 2003, p. 156), this mandate has been criticized by many – both inside and outside of the educational community (Lewis, 2002; Mathis, 2003; Rose, 2003a). For example, Mathis (2004) observed that NCLB allows politicians to offer their constituents simple solutions for complex problems. Since voters seem to be seen by some public servants as incapable of understanding, let alone supporting, multiple methods for solving highly complex, entrenched social problems, the need to keep it simple is often embraced. Moreover, NCLB “reflects significant impatience in Washington with the pace of state-led improvement and, in particular, with the slow pace at which states have instituted tough accountability systems” (Cohen, 2002, ¶1). As such, NCLB is “clearly the most dramatic change in national school legislation since ESEA’s (Elementary and Secondary Education Act of 1965 – parenthesis ours) inception” (Boomfield and Cooper (2003) ¶ 1).

Although the prospect of schools being held to higher achievement standards, and thus producing better student outcomes, is universally appealing, to date very little is known about NCLB's actual impact on student outcomes. Further, despite the enormous number of books, book chapters, and articles describing its legal and conceptual underpinnings, little is known about the NCLB's practical implications for how we educate groups of students targeted in the Act (Rose & Gallup, 2003), and particularly one of its target groups: students with disabilities. For example, there appears to be little if anything in the extant literature, some five years after its enactment, regarding the implications the Act has for students identified as having emotional and or behavioral disorders (EBD), particularly those students served in urban school settings. Thus, our intent in this paper is to briefly review the major principles of NCLB and then to provide a context and discuss implications for NCLB's role in improving educational and social outcomes for students identified as emotionally and behaviorally disturbed (EBD) who are being served in urban school environments.

Principles of NCLB

The primary purpose of NCLB "is to ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education, and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments" (NCLB, 2002). Additionally, NCLB requires accountability for all children (Abedi, 2004; Spooner & Browder, 2003). Toward these ends, NCLB incorporates six key principles to achieve this goal (a) accountability, (b) highly qualified teachers, (c) scientifically based research practices, (d) local flexibility, (e) school safety, and (f) parental choice (NCLB, 2002; Turnbull, Turnbull, Erwin, & Soodak, 2006). Following are brief synopses of each principle.

Principle 1: Accountability for Results

Building- and district-accountability as documented with records of students' adequate yearly progress (AYP) is the primary focal point of NCLB (2002). AYP is defined and measured solely on the basis of standardized test scores (Bracey, 2003; Linn, 2003; Rose, 2004). Turnbull et al. (2006), observed that "...it is good public policy to reward states, school districts and schools that improve student academic achievement in reading, mathematics, and other core academic subjects" (p. 41-42). Schools and districts are honored with achievement awards for meeting or exceeding state proficiency standards, and NCLB funds can support teachers in schools cited for achievement gains (Turnbull et al.).

NCLB requires annual testing, using state-selected tests, in reading and mathematics for students in the third through eighth grade. Additionally, students are required to take a state-selected science test by the 2007-2008 academic school year (Egnor, 2003). Each state defines the "amount of adequate yearly progress toward proficiency in the core subjects that ... each school district must achieve" (Turnbull et al., 2006, p. 45). NCLB also requires schools to demonstrate AYP in terms of 100% proficiency in reading, math, and science for all students within 12 years (i.e. by 2014). Egnor (2003) noted "individual

schools must demonstrate linear incremental improvement in student performance towards 100% proficiency in reading and math for all students by 2014” (§ 3). In addition, states and schools must include at least 95% of all students in the assessment process including the following target groups of students: (a) economically disadvantaged students, (b) students from major racial and ethnic groups, (c) students with disabilities, and (d) students with limited English proficiency (Abedi; NCLB, 2002; Spooner & Browder, 2003). Assessment results must be disaggregated so that AYP data for each group are apparent.

Whereas NCLB can produce the “carrot” of rewards and possible funds for high achieving schools, it also can wield the “stick” of labeling schools as underperformers. If and when their child’s school is deemed less than satisfactory in terms of facilitating students’ AYP, the Act requires that parents be afforded the opportunity to transfer their son or daughter to an adequately performing school (Egnor, 2003).

Turnbull et al. (2006) outlined the timelines districts are required to adhere to in order to meet NCLB guidelines and consequences for failing to achieve the standards. This information is in Table 1. Table 2 shows the consequences to Title I schools who fail to meet NCLB guidelines.

Table 1 *Consequences for Schools Not Meeting NCLB Requirements*

After 2 consecutive years	Consequence to District or School
	• Designated “needing improvement” • State takes specific action to improve the district or school using scientifically-based instructional strategies
Subsequent years	• Subject to further state oversight

Table 2
Consequences to Title I Schools Not Meeting NCLB Requirements

Failure to Meet Requirements: Title I Schools	Consequence to District or School
After 2 consecutive years	• School district identifies itself as needing improvement • District receives technical assistance to develop and carry out an improvement plan • Students have right to transfer to another public school in same district that has not been identified as needing improvement
3 years	• Remains in “improvement” status • District continues transfer option • Title I students may receive supplemental educational service such as tutoring or remedial education from state-approved providers
4 years	• School district must take corrective actions to improve including these options: • Replacing staff • Implementing new curriculum • District continues transfer option

Failure to Meet Requirements: Title I Schools	Consequence to District or School
5 years	• District must take action to restructure the school including these options: • Converting to charter school • Replacing some or all of the faculty and administrators • Turning the school's operation over to the state or private agency that has demonstrated success in school improvement

Principle 2: School Safety

Safety is another focus of NCLB. The majority of schools in the U.S. are safe; most crimes against persons or property occur in only 7% of the schools (Turnbull et al., 2006). However, the authors contend this fact shows a “critical mass of unsafe schools” (p. 51). The principle “is that schools must be safe and drug- and alcohol-free in order to provide an effective context for teaching and learning” (Turnbull et al., p. 51). In order to accomplish this goal, NCLB includes two major strategies. First, the Act provides funds to State Educational Agencies (SEAs) and Local Educational Agencies (LEAs) to: (a) prevent school-based violence and use of drugs, alcohol, and tobacco and (b) foster safe and drug-free teaching and learning environments. Second, NCLB allows parents to transfer their children from a “persistently dangerous” school (as determined by the SEA) to a safe school setting.

As discussed above, the Federal Government provides funding to meet the Safe School principle. In order to qualify for the monies, schools are required to establish: (a) objective data used to address local needs; (b) research-based prevention activities; (c) consultation sessions with parents, students, and community organizations; (d) systems to measure and evaluate progress; and (e) a uniform system for reporting data to parents and other citizens, including allowing parents full access to reports on the status of school safety and drug use among students.

Principle 3: Parental Choice

NCLB appears to rely on “the same strategy that IDEA had proposed 25 years earlier, parent participation, to enable parents to hold schools more accountable for providing an appropriate education” (Turnbull et al., 2006, p. 53). As discussed in regards to Principle 1 (Accountability) and Principle 2 (School Safety), schools that do not meet the academic and safety requirements, must offer parents the option to transfer their children to another school unless state law prohibits school choice (Egnor, 2003). If a parent does not choose to transfer their children from a school which is failing, the student will receive supplemental services. Theoretically, these provisions provide parents leverage for compelling failing or unsafe schools to improve (Turnbull et al.).

Principle 4: Highly Qualified Teachers

Accountability through highly qualified teachers is the fourth principle of NCLB (2002). Highly qualified teachers are related to student outcomes (Berry, 2004; Darling-Hammond, 2000; Darling-Hammond & Youngs, 2002; NCLB; Rebell & Hunter, 2004; Turnbull et al., 2006) and perhaps are the most important way schools can enhance student performance (Beaver, 2004; Darling-Hammond, 2000). States are required to have plans to ensure that highly qualified teachers are in all schools--including teachers in special education (Turnbull et al.).

A highly qualified teacher is defined as having (a) at least a bachelor's degree from a four-year institution, (b) full state certification, and (c) competence in the subject areas taught as assessed on state administered test on core academic subject knowledge. All teachers must meet these criteria by the 2005-2006 academic school year (Berry, Hoke, & Hirsch, 2004; Bracey, 2003; Darling-Hammond & Youngs, 2002; Mathis, 2003; Turnbull et al., 2006).

Two opinions exist on how NCLB's highly qualified requirement applies to special education teachers. Mooney, Denny, and Gunter (2004) cite the Council of Exceptional Children as interpreting the Act to mean that if a special education teacher is teaching in one or more of the core areas, he or she must be certified in core area(s) in addition to holding special education certification. On the other hand, Turnbull et al. (2006) noted that NCLB has conditions which apply to special education teachers. These teachers "may participate in instructional activities that do not require them to be highly qualified in core academic subjects" (p. 59). These activities included (a) implementing positive behavior support, (b) consulting with highly qualified teachers in core academic instruction, (c) selecting appropriate instructional accommodations and curriculum, (d) teaching study skills to students, and (e) re-enforcing instruction students received from a highly qualified general education teacher.

Finally, NCLB (2002) requires districts to issue reports on how the district is progressing toward the goal of having highly qualified teachers on an annual basis. The public must have access to this report (Turnbull et al., 2006).

Principle 5: Scientifically-based Research

The fifth principle of NCLB (2002) established accountability through scientifically-based research which Smith (2003) defined as "reliable evidence that the program or practice works" (p. 126). Shavelson, Phillips, Towne, and Feuer (2003) suggested scientifically-based research appeared first in federal law during the mid-1990s, and NCLB further supports this trend which should improve educational practices and student outcomes.

NCLB includes 111 references to scientifically-based research and the law requires schools receiving federal funds to use their resources to implement evidence-based strategies and procedures (Algozzine, 2003; Feuer, Towne, & Shavelson, 2002; Smith, 2003; Spooner & Browder, 2003). Turnbull et al. (2006) stated "instruction is most

effective when it proceeds from scientifically based research” (p. 61). Scientifically-based research includes experimental or quasi-experimental studies, with a strong preference for randomized controlled trials (NCLB, 2002; Spooner & Browder, 2003).

Principle 6: Local Flexibility

NCLB answered critics who believe that school reform was hampered by a top-down, one size fits all approach administered by a bureaucracy. Under NCLB, federal programs “should encourage local solutions for local problems” (Turnbull et al., 2006, p. 63). SEAs and LEAs should have more discretion on how to spend federal funds, less paperwork, and more responsibility in the design and implementation of programs (NCLB, 2002; Turnbull et al.).

Local flexibility also allows states and schools to enter a five year performance agreement with the U.S. Department of Education as charter states or charter districts. This agreement permits these states and districts to be “relieved of the requirements under many federal categorical programs” (Turnbull et al., 2006, p. 64) but also subject them to rigorous standards of accountability and sanctions if terms of the agreement are not met (Turnbull et al.).

The six principles of NCLB apply to all public schools; however, low-achieving urban schools face greater challenges in attaining the outcomes required by NCLB. The following section contains a brief review of the literature related to challenges faced by low-achieving urban schools followed by a comparison of NCLB’s six principles, discussed in the section above, interfaced with issues in the urban schools.

NCLB and Urban Schools

Arguably the primary goal of public education is to teach every student to read, write, and problem solve in order to produce active members of society (Crosby, 1999). Few would dispute the ideal that, in the United States, all students should receive an excellent education (Mathis, 2003; Lewis, 2002). Unfortunately, this ideal can be lost in the challenges endemic to the urban school setting because teachers and students must contend with a multitude of unfavorable conditions, often precluding effective teaching and learning (Crosby, 1999; Lopes, Cruz, & Rutherford, 2002).

Arroyo, Rhoad, and Drew (1999) stated that an extensive amount of knowledge and information has been accumulated in professional literature about possible causes and solutions for the underachievement of students in urban school environments. Identified causal factors include: (a) instability of parental (De Haan & MacDermid, 1998; Siefert & Hoffnung, 1991) and peer relationships (Lopes et al., 2002), (b) cultural background and experiences (Bowers, 2000; Hayes, Nelson, Tabin, Pearson, & Worthy, 2002), (c) poverty (Conniff, 1998; De Haan & MacDermid; Ferrandino, 2001), and (d) inappropriate student behavior (Bowers; Laffey, Espinosa, Moore, & Lodree, 2003; Lopes et al.). In light of NCLB’s goals, it may be even more difficult for professionals to

become informed and implement recommended research based practices and strategies in urban school settings.

Urban school personnel face an increased challenge to serve the greater community because of the sometimes extreme social and economic needs of the population (Crosby, 1999). In essence urban schools can be seen as similar to the government of a small city providing several of the following services: (a) recreation, (b) cultural growth, (c) emotional development, (d) basic health care, (e) food service, (f) voter registration, (g) draft registration, (h) driver's education, (i) sex education, (j) employment service, (k) immunization, and (l) collection of census data (Crosby). The availability and accessibility of community-based resources such as: (a) after school tutoring (Zhou, 2003), (b) parent organizations (Arroyo et al., 1999), (c) clubs and athletic teams (Knight-Abowitz, Rousmaniere, Gaston, Kelley, & Solomon, 2000), and (d) teen outreach programs (Somers & Piliawsky, 2004) play a vital role in student success. Further, learning difficulties are caused because students come to school ill-prepared to learn because they (a) are hungry, (b) experience substandard living conditions, (c) have poor access to health care, and (d) live in unstable family units.

Urban Schools: Accountability and Safety

Without highly qualified teachers, urban schools may find it impossible to succeed in meeting AYP (Berry, 2004). Every year educators implement a variety of interventions to increase the academic outcomes of students in urban school settings (Bowers, 2000). However, in several schools across the country student gains are typically short-lived. As previously discussed, the majority of urban school teachers are faced with a vast array of interconnected social problems (Burnett, 1994). Further, urban schools typically lack appropriate supplies and equipment including such basics as (a) up-to-date textbooks, (b) children's literature books, (c) desks, and (d) chalkboards (Bowers; Kozol, 2005). Schools without these essential resources are less likely to have access to more advanced teaching materials such as (a) graphing calculators, (b) science and laboratory materials, and (c) technology all of which have a direct impact on meeting AYP.

Some urban schools report student turnover ranging from 40 to 80% annually and it is not uncommon for a student to attend multiple schools in a single academic school year (Stover, 2000). Frequently, the revolving door effect has students arriving with no academic records to guide school officials on proper grade placement which in many cases force teachers to devote attention to remedial lessons rather than teaching new skills (Stover). Bouncing from school to school has significant negative implications for students living in poverty (Conniff, 1998). According to Sanderson (2003), hundreds of students leave their schools and re-enroll in new schools. Hodgkinson (2000) asserted constant turnover is disruptive to (a) the overall school environment, (b) teacher's instruction, (c) student learning, and (d) significantly lowers the mobile student's level of engagement. Additionally, moving from school to school does not allow students to receive an appropriate education (Conniff) or the attention he or she needs to undergo evaluations, meet state and national standards, or successfully contribute to meeting AYP.

Behavior problems can be devastating for urban schools. Bowers (2000) observed that disruptive behaviors and absenteeism are typically high and achievement rates tend to be low. For example, in several urban high schools, delinquent behavior can be characterized as anarchy or civil war, which is more serious than those external to the urban school culture may realize. Many students are angry, question every rule, and commit astonishing acts of defiance directly impacting the overall school setting (Crosby, 1999).

Although the results of school overcrowding is inconclusive, limited research suggested overcrowded schools in poverty stricken areas have an adverse influence on student learning and outcomes (Burnett, 1995). Research indicated overcrowding conditions impede (a) student learning and classroom activities, (b) instructional techniques, (c) student concentration, (d) classroom order, and (e) scheduling (Bowers, 2000), especially for students living in poverty (Burnett). Teachers and students have voiced concerns that overcrowding negatively affected both classroom activities and instructional techniques such as (a) student's inability to concentrate, (b) limited teacher student interaction, (c) limited cooperative learning or group activities, and (d) teaching only a minimum part of the required material (Burnett). These factors will likely lead teachers to burnout earlier when compared to other educational settings.

These factors also appear to play a significant role in individual learning outcomes and affect their performance on educational assessments which affects a schools progress toward meeting AYP (Ferrandino, 2001).

Urban Schools: Parental Choice

Fowler (2003) reported school choice has greatly expanded since 1984 at which time most students attended the public school within their zone as designated by their school board. During the 1990s the quality of public education was scrutinized and criticized, which led to an influx of experimental and alternative school choice programs including (a) magnet schools, (b) charter schools, (c) voucher programs, (d) home schooling, and (e) religious based schools (Carper, 2001; Ferraiolo, Hess, Maranto, & Milliman, 2004).

According to Ferraiolo et al. (2004) school choice is based on the fundamental belief that parents and students should be provided the freedom to select and attend the school which best satisfies their (a) educational priorities, (b) embraces principles such as responsiveness to the clients statistics' demands, (c) accountability for student performance, and (d) innovation in instructional techniques. Supporters view school choice as the "silver bullet" which can dramatically improve the U.S. educational system "by subjecting public education to much needed market pressures, thereby raising student achievement, increasing parent involvement, providing for diverse educational needs, and building more cohesive school communities" (Fowler, 2003, p. 33). Focusing school choice on underprivileged urban families may "save" students from failing public schools and could level the playing field by offering educational opportunities currently benefiting middle class students (Viteritti, 2003).

Currently, “seventeen states have interdistrict open enrollment programs; 37 states and the District of Columbia have passed charter school legislation; public voucher programs exist in three states; and numerous private voucher programs are operating, mostly in urban areas” (Fowler, 2003, p. 33). However, the evidence to date has been insufficient and inconclusive as to whether school choice will close the achievement gap (Viteritti, 2003).

According to Viteritti (2003), the market’s failure to respond to the crisis in urban school settings is based on individuals who do not have adequate resources to “explore” the market. Essentially, these parents cannot afford the tuition to send their children to nonpublic schools. Educational alternatives typically are not readily available to disadvantaged families. However, vouchers may improve student access to nonpublic schools where traditionally tuition rates are prohibitive (Viteritti).

Vouchers are increasingly popular among families in underprivileged African-American and Hispanic communities who are eager to remove their children from appalling school conditions (Thomas & Clemetson, 1999). However, the National Association for the Advancement of Colored People president Kweisi Mfume warned “Vouchers don’t educate, they segregate” (Thomas & Clemetson). Further, NCLB is widely regarded in the education community as a master scheme to privatize public education (Rose, 2003b). Opponents argue that vouchers will take the brightest students and drain desperately needed resources from public schools, which means that poor students with uninvolved parents will be left behind (Thomas & Clemetson). In essence, vouchers may only benefit a small percentage of students.

Urban Schools: Highly Qualified Teachers

Currently, urban schools confront huge teacher shortages. In many cases “low performing” urban schools are poorly staffed because more than one-half of the teachers hold only emergency certification (Berry, 2004). Duvall (2001) reported teacher shortages have reached critical proportions in urban schools primarily in the areas of special education, mathematics, and science forcing urban districts to find creative ways to recruit and retain teachers and administrators.

Urban schools strive to compete with surrounding suburban school districts. However, many urban districts continue to face several challenges including: (a) significant salary gap; (b) serious disciplinary and behavioral issues; (c) lack of parental, administrator, and community support; and (d) a growing discrepancy between teachers--largely white females--and the increase of minority students all of which contribute to the teacher shortage crisis (Duarte, 2000). Over the next six years it is estimated two million additional teachers will be required to fill the retirement gap and projected increases of enrollments (Beaver, 2004), which will only exacerbate the teacher shortage problem in urban school settings.

Unfortunately, business leaders and policy makers have just recently realized that teachers have the most significant impact on student achievement (Berry et al., 2004). Research indicates that exceptional teachers are perhaps the most important resources

schools can provide to enhance student performance and outcomes, especially for “at-risk” and low achieving students (Berry, 2004; Darling-Hammond, 2000; Darling-Hammond & Youngs, 2002; Rebell & Hunter, 2004). However, limited empirical agreement exists about what is meant by “teacher quality” or the necessary steps to ensure every student has access to highly-qualified teachers (Berry; Berry et al.).

As discussed above, NCLB requires all public schools to have highly qualified teachers in every classroom by the 2005 academic school year (Beaver, 2004, NCLB, 2002). This is a worthy goal and in theory improved instruction increases the chances schools will meet AYP (Beaver). However, disadvantaged schools will potentially fail under NCLB requirements because they have higher percentages of unqualified faculty and lack adequate funding to provide training or education that might increase teachers’ chances of achieving local and state standards (Beaver).

As outlined above, urban school students’ face several different challenges compared to their middle-class peers (Cuban, 2004). For example, nearly three times as many students in urban schools come from homes where English is the second language (Duvall, 2001), and minority students in these school environments are increasingly being taught primarily by Caucasian novice teachers and will unlikely ever be taught by minority teachers (Duarte, 2000). These facts pose several difficulties and should raise concerns for administrators forced to include standardized test scores of students from various racial, ethnic, and language backgrounds.

Another factor is that the total number of professional staff working in urban school settings is often inadequate to perform the duties required (Crosby, 1999). Additionally, teacher turnover in urban settings is much higher than suburban school settings. Berry (2004) argued that retaining highly qualified teachers is a larger problem than preparing new ones.

Urban Schools: Scientifically Based Research and Local Flexibility

A thorough and systematic review of the literature revealed a dearth of empirical research, anecdotal reports, or opinion pieces specifically related to NCLB and scientifically based research in urban school settings. However, several research based articles have been published concerning urban schools, which are frequently associated with low achieving students (Arroyo et al., 1999; Lopes et al., 2002; Katz, 2000). Therefore, parallels from this body of literature were drawn for this manuscript.

NCLB (2002) declared scientifically-based research methods must be used within every classroom and all students must meet standards. Ironically, however, NCLB mandates are not based on scientific research but on a theory that increased standards will increase student outcomes. Allbritten, Mainzer, and Ziegler (2004) argued NCLB placed policy before knowledge.

According to Schwein and Young (2003) NCLB increases local flexibility by allowing communities the freedom to find solutions for there unique educational needs. In addition, NCLB allows local education agencies greater opportunities to decide when and

how to spend federal monies. However, as discussed above, this freedom has stipulations which hold school districts accountable for increasing student outcomes (NCLB, 2002). NCLB primarily defines flexibility in terms of funding with an emphasis of how Title I funds are spent. NCLB allows Title I funds to be used in a variety of ways including promoting teacher quality, safe schools, and educational technology. The ideal of this shift in how Title I funds are allocated is based on increasing student outcomes in the classroom setting.

NCLB and Students with EBD in Urban School Settings

With the exception of one article, the literature is silent regarding direct implications of NCLB for students who have emotional or behavioral disorders. Mooney et al. (2004) discussed the impact on academic instruction that NCLB and the Louisiana Senate Bill 1248 (S. 1248), which mostly mirrors NCLB, have on this student population. The authors focused on three of the Act's six principles: (a) accountability, (b) highly qualified teachers, and (c) scientifically-based research with particular emphasis on students' access to the general curriculum.

Mooney et al. (2004) suggested that NCLB and S. 1248 only indirectly influence the academic instruction for students with EBD. The authors also concluded that the legislation "can serve as a prime opportunity for teacher educators and researchers in the field of EBD to directly--and positively--impact the academic instruction of our students" (p. 237). Mooney et al. warned that the two bills have the potential to demand "quick-fixes," which they do not believe are available. Finally, they suggested that the influence of the highly qualified teacher requirement will significantly increase the number of teachers who are not fully qualified to teach students identified as EBD.

Osher and Hanley (2001) summed up the plight of children and youth with emotional and behavioral problems. They stated, "Generally [these students] receive inadequate services and achieve poor educational and community outcomes, which school and community factors play a key role in producing" (§ 1). Based on the findings in the literature concerning the outcomes for students with EBD, and Mooney et al.'s (2004) suggestions that NCLB will further exacerbate the shortage of highly qualified teachers in the field, one can infer that NCLB may negatively affect students in this population.

Unlike affluent school districts where additional resources can be used to assist students with disabilities, resources in urban school settings are typically unavailable (Sorrentino & Zirkel, 2004). Given the current realities of (a) NCLB (2002), (b) urban schools, and (c) academic and social outcomes for students with EBD there appears to be a growing discrepancy between legal mandates and means to achieve rigorous demands. Additionally there appears to be growing concern about the efficacy of special education services across America (President's Commission, 2002).

An Agenda for Meeting the Instructional Needs of Students with EBD in Urban Settings

The focus of the following recommendations centers on urban schools. It should be noted that the recommendations do not include justifications or interpretations of how the Office of Special Education Programs (OSEP), SEAs, or LEAs should implement theses

suggestions. The following three recommendations are presented to bring about better outcomes for students with EBD within urban school settings through (a) teacher preparation in higher education, (b) matching extraordinary teachers with low-achieving students, and (c) reduction in classroom size.

Recommendation 1: Highly Qualified is not Enough: Reports by the President's Commission (2002) stated that there is a critical shortage of qualified staff in special education and argued that states should require all teachers to have specific training related to meeting the needs of students with disabilities.

The current state of public education within urban school settings can be viewed as an academic, social, emotional, and behavioral battleground. Teachers can no longer afford the luxury of collecting a paycheck without the responsibilities of fine-tuning their craft. It was reported that in 1998 only forty-one percent of public school teachers felt moderately well prepared to meet the needs of students with disabilities while only twenty-one percent of public school teachers felt very well equipped to provide appropriate services to students with disabilities (President's Commission, 2002).

Currently, the vast majority of universities across the nation require students in teacher education programs to take one course in the area of special education. Typically these courses provide a cursory overview of disability characteristics, behavior interventions, strategies to modify curriculum, and lessons to meet the unique needs of students with disabilities. We advocate that core competencies should be included in teacher preparation programs. These competencies include knowledge of the law (including NCLB), introduction to special education, and a supervised practicum.

Although this would require a major systems change, it is vital that a two-to-three credit hour course related to an in-depth review of *The Individuals With Disabilities Education Improvement Act* (2004) be added to the teacher training programs for both regular and special education teachers. This would ensure teachers are knowledgeable about the law and how it will influence their upcoming teaching career. This course would be in addition to the three credit hours of instruction in children with exceptionalities.

In addition, we recommend teacher training programs require all students in the field of education be required to take a minimum of six credit hours of field experience. Three credit hours should be within a pull-out or self contained settings and three credit hours within an inclusive classroom. The purpose of having these experiences is to better prepare students for the world of teaching and bridge the gap between theory and practice.

Recommendation 2: Matching Extraordinary Teachers with Low-Achieving Crisis Potential Students: A critical feature of extraordinary teachers is an extraordinary level of commitment to and caring for marginalized populations of schools (Goldstein & Lake, 2003). Arroyo et al. (1999) recommended that experienced and caring teachers who have realistic and high expectations should be matched with low-achieving students, particularly those on the verge of failure. Additional findings suggested low-achieving

students connect with encouraging and respectful teachers (Arroyo et al.; Haberman, 1995).

Outstanding teachers can be identified and do exist in urban school settings and they make a difference in the life of urban school students (Gordon, 1999). However, this author asserted that school districts are unfocused, unorganized, and unsystematic when identifying teachers who should be hired. Qualities of excellent teachers in urban school settings included intelligence, knowledge of their subject matter, and ability to understand and implement learning theories (Gordon). Other qualities included (a) commitment, (b) dedication, (c) individualized perception, (d) caring, (e) involver, (f) empathic, (g) positive, (g) initiator, (h) stimulator, (i) input seeker, and (j) conceptualization skills (Gordon).

Another approach to ensuring urban school districts having extraordinary teachers is to hire teachers with knowledge, skills, and professional dispositions aligned with those required of Star Teachers (Haberman, 2004). Similar to Gordon's (1999) assertions, Star Teachers are effective and see gains in their students despite working in failing schools (Haberman). Unfortunately only about 8% of teachers who work with students from low-income or urban school districts are considered to be Start Teachers (Haberman). Characteristics of Star Teachers have been well document in the literature. Common characteristics included (a) persistence, (b) physical and emotional stamina, (c) building and maintaining caring relationships with students, (d) commitment to supporting student effort, (e) willingness to admit mistakes, (f) focus on deep learning, (g) commitment to inclusion, and (h) organization skills (Haberman, 1995/2004).

Recommendation 3: Innovative ways to Reduce Teacher Student Ratios: As discussed above, overcrowding severely hinders the functioning of the school day which often forces administrators to devote their time and energy to maintaining order rather than engaging in efforts to improve their schools (Burnett, 1995). For example, a typical classroom in the U.S. has approximately 25 students (Cooter & Cooter 2004) and Arroyo et al. (1999) advocated classroom sizes be reduced to between 15 and 20 students.

Unfortunately administrators and teachers are not always in the position to reduce class size (Arroyo et al., 1999). The following five suggestions are alternatives which can be implemented--or explored--within the school district, school, or classroom setting (a) year round schooling (Heaberlin, 2002; Lowe, 2002), (b) looping (Little, & Little, 2001; Nichols & Nichols, 2002), (c) cooperative learning groups (Slavin, 1995), (d) utilization of paraprofessional (Kotkin, 1998), and (e) alternative block scheduling (Marchant & Paulson, 2001; Veldman, 2002). It is beyond the scope of this paper to provide a detailed description of each of these suggestions. However, in order to clarify these recommendations each of these options is briefly discussed below.

Year round schooling falls into two major categories (a) multitrack and (b) single-track (Mcglynn, 2002). As of 2002 approximately 3,000 individual schools adopted a year-round calendar (Mcglynn). Typically multitrack calendars break students into four groups--three of which attend school at any one time. This allows schools to

accommodate more students (Mcglynn). Whereas single-track calendars require all students to attend school at one time. Traditionally single-track schools offer three-to-four breaks throughout the academic school year (Mcglynn).

According to Little and Little (2001) looping is a placement which allows teachers to stay with the same group of students for more than one academic school year. For example, a teacher may loop with his or her students from kindergarten to first grade. The purpose of looping is to meet individual needs of students and increase their learning outcomes. Proponents of looping have cited the following benefits for students and teachers (a) increases productivity during the second year, (b) provides a safe and secure environment, and (c) allows teachers and students extended opportunities to grow academically (Vann, 1997).

The basic principle of cooperative learning is accountability. For example, each group member is not only responsible for their own learning but the learning outcomes of their teammates (Lindauer & Petrie, 1997). Teachers can introduce a variety of different styles of cooperative learning (Lindauer & Petrie) however, Slavin (1990) identified the following characteristics of effective implementation team rewards, accountability, and equal opportunities to succeed.

Unlike 10-to-20 years ago, paraprofessional's duties have increased from being an aid to taking an active role in the teaching process. Keller, Bucholz, and Brady (2007) reported that paraprofessionals now assist the teacher, provide instruction, and oftentimes actually teach small groups of students. In addition, these authors suggested that paraprofessional provide supportive instruction in the general education classroom setting. Teachers who know how to effectively utilize their paraprofessional increase the likelihood of assisting multiple student populations including (a) students with disabilities, (b) students who are low-achievers, (c) English language learners, and (d) students who need remedial assistant.

Traditional block scheduling in high schools are seven 50-to-55 minute periods. However, according to Marchant and Paulson (2001) alternative block scheduling typically breaks the school day into 90 minute blocks. Different block scheduling models exist. Marchant and Paulson reported on 4 x 4 and A/B designs. Four by four allows students to attend four courses everyday for one semester and a different set of four courses during the second semester (Marchant & Paulson). Schools which have adopted A/B scheduling usually have students take seven course and one study hall. Marchant and Paulson reported that classes alternate every other day. This allows teachers to use a variety of different instructional approaches depending on the class and students.

Summary & Conclusions

The purpose of this paper was to provide the reader with a synthesis of literature relevant to *The No Child Left Behind Act* (2002). It outlined and defined the six major principles of NCLB, the literature that provided a context for urban school settings, and

implications NCLB has for students identified as EBD in urban educational settings. Finally, three recommendations were provided to facilitate greater educational and social outcomes for students identified as EBD in urban school environments.

Comprehensive, focused urban school reform efforts such as Philadelphia's Research for Action (RFA) funded by no fewer than 10 private foundations, typically are brought to bear when crisis--proportioned failure occurs--in this case state take-over of the local district (RFA, 2007). Among RFA's ongoing work is the creation of "small" high schools (500 or fewer students), data driven practices, and civic engagement and professionalism. Interestingly, these reforms are neither new nor innovative, they are sensible and seem only to be embraced when all else fails. NCLB's spirit will only be realized when similar urban-based reforms occur before rather than during times of crisis. Children and youth with EBD by definition experience too many personal crises; we should work to ensure that the schools serving them are not similarly in crisis mode.

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**The Impact of High-Stakes Testing for Individuals with Disabilities:
A Review Synthesis**

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Abstract

The purpose of this paper is to provide a review of the literature evaluating the impact of high-stakes testing for students with learning disabilities. In this review, 30 studies were obtained, reviewed, and synthesized. Findings discuss the definition and description of high-stakes testing, origins of high-stakes testing for students with disabilities, educational outcomes, effects on curriculum, and impact of high-stakes testing for students with learning disabilities. Results and limitations are discussed in relation to instructional practice and future research issues to extend the current literature findings.

**The Impact of High-Stakes Testing for Individuals with Disabilities:
A Review Synthesis**

America has a long tradition of weaving assessment into school improvement equations. Predictably, for several years accountability for test scores has been viewed as key to productive educational improvement (Stiggins, 1999). Landau, Vohs, & Romano, (1998) and McGrew, Spiegel, Thurlow, Shriner, & Ysseldyke, (1994) found school accountability reform has raised major issues concerning the educational treatment of students with disabilities and their academic achievement. The National Council on Disability (1993) in its report to the President and Congress noted that for the years 1986 through 1989 the proportion of students with disabilities who dropped out or left school for undetermined reason increased from 25% to 27% and 12% to 18%, respectively.

McGrew, Thurlow, and Spiegel (1993) noted that across the country, 40% to 50% of students with disabilities of all school age are excluded from various large-scale

assessments. More recently, Thurlow (2001) reported that 31%, 20.7%, and 15.1% of students with disabilities in 4th, 8th, and 10th grade, respectively, were not tested in Nevada. In other states, inclusion in the assessment system does not always mean that students' scores are included in the average used to determine rewards or sanctions. For instance, in 2001 Louisiana reported that the scores of 94.3% of third graders, 94.2% of fifth graders, 93.9% of sixth graders, 92.3% of seventh graders, and 88.8% of ninth graders were excluded from the school averages. Encouraging such practices implies that the learning achievement and progress of students with disabilities do not count.

Landau et al (1998) and Ysseldyke, Thurlow, Kozleski, & Reschly (1998) have documented the need for a more inclusive outcome assessment system. McGrew et al (1994) reported the results of a survey of state assessment data that, while most states affirmed that they include some students with disabilities in their accountability system, only six out of 50 states were able to provide data about their large-scale assessment. McGrew et al (1993) suggests that many students with disabilities have been excluded from large-scale achievement data in many states across the nation. Considering that school reform activities use measurable indicators from large-scale high stakes assessment as index of progress, McGrew et al (1994) concluded that it is imperative that states implement uniform strategies for increasing and documenting the inclusion of these students in state data collection programs. They have advocated the need for a more holistic school reform and standard-based accountability system that promotes systematic efforts to include all students with disabilities in school outcome measures. The aforementioned authors also suggested that the use of high-stakes assessment in educational decisions would lead to better outcomes for all students, including students with disabilities.

In the late 1980s testing was promoted as a way of ensuring that educational standards were met and state and district-wide large-scale assessment was viewed as a way to hold schools accountable for all students' learning outcomes. Popham (1987) postulated that only if the stakes are high, meaning if there is something valuable to gain or lose, will teachers and students take education and tests seriously and work hard to do their best. Landau, et al. (1998) have noted that including students with disabilities in assessment sends the message that schools are accountable for all students teaching higher levels of learning. Conversely, Allington & McGill-Franzen (1992) reported that, in some instances, high-stakes testing rewards harmful instructional practices rather than school improvement. Langenfeld, Thurlow, and Scott (1997) examined the effects of high stakes testing for students and concluded that administering tests that have important consequences for students, teachers, and the school could adversely impact instruction. Despite the apparent interest, very few investigations have been conducted in the area of high stakes-testing on students with disabilities in general. A review of the literature in the area of high-stakes assessment revealed very few research studies that examine high stakes assessment in relation to their potential impacts on students with mild disabilities on one hand, and students with severe and profound disabilities on the other hand.

In spite of the noticeable lack of research supporting the effectiveness of inclusive assessment, an increasing number of states across the nation are implementing high

stakes assessment with students with disabilities (Heubert, 2000; Thurlow, 2001). As more inclusive large-scale assessment is becoming the standard practice, there is an urgent need for more research that focuses on the specific impact of high stakes tests on students with mild disabilities (Langenfeld, Thurlow, & Scott, 1997). Investigating the effects of high stakes testing on students with learning disabilities has never been so important, especially as educators and legislators are trying to better interpret and use assessment results.

High-Stakes Testing: Definitions and Descriptions

High stakes tests are also called “exit exams, certification exams, or competency exams” (O’Neill, 2000). High stakes testing means that a test is given to students and the test score is the sole measure used to make crucial decisions about students, teachers, and schools regardless of previous and future performance (Tingley, 1999). Students’ scores on a test can “bring public praise or financial rewards” or “public embarrassment and heavy sanctions” to the school during high-stakes testing (AERA, 1999). Individual students could be placed in honors classes or programs for the gifted. Similarly, if students score low or do not meet the standards they might not be promoted to the next grade or will not graduate from high school. In some instances, three-fourths of the school staff could be replaced (Langenfeld, et al., 1997). Orfield and Wald (2000) reported that high-stakes testing policy might link the score on one test to teachers’ and principals’ salaries and tenure decisions. Obtaining a low score on the test also increases the likelihood that students might be rejected by a particular college (Ransom et al., 1999) or for a particular employment opportunity. Elsewhere, high-stakes tests imply that an individual student’s score is used to determine student’s needs, and whether he or she will be allowed to enroll in a certain academic program. However, many individuals and institutional viewpoints consider such a practice unacceptable. Ducharme and Ducharme (1998, p.83) noted that the “current trend and emphasis being promoted across the nation and several states is potentially dangerous and tragic.” The American Educational Research Association declares that “decisions that affect individual students’ life chances or educational opportunities should not be made on the basis of test scores alone” (AERA, 2000).

Origin of High-Stakes Testing for the Students with Disabilities

Before the passage of public law 94-142 (Education of All Handicapped Children Act [EHCA]) in 1975, the education of students with disabilities was not mandatory in the United States. The public school system was neither required to accept them in the classroom nor to provide an “appropriate” education that maximizes their potential. As a result of such discriminatory policies, many students with disabilities were institutionalized and others were simply secluded indoors (Ysseldyke et al. 1998). Many advocacy groups struggled to provide students with disabilities equal access to public school buildings and appropriate education in the 1970s. Furthermore, with the passage of P.L. 94-142 in 1975, the education of all students with disabilities became mandatory, free and appropriate (Yell, 1997). Unexpectedly, twenty years after the 1975 landmark act, special education programs in general have been far from meeting their intended

expectations (Danforth & Rhodes, 1997). Not long ago, research on school reform noted the pervasive and systematic exclusion of students with disabilities from the national data analysis used to report educational improvement. McGrew, et al (1993) state that the systematic exclusion of students with disabilities in data analysis characterizing the period between the 70s and early 90s adversely affected the educational outcomes and the general attitude toward the employability and placement of such students.

Current Research on High Stakes Tests and Students with Learning Disabilities

Until recently, studies on the effects of high stakes assessment on students with disabilities were practically not available in the literature. The scarcity in the research base could be due to the fact that very few states in the nation included students with disabilities in their assessment data collection (McGrew et al., 1994). It was not until 1997 that the amendments of IDEA required that students with disabilities be included in accountability programs. In high stakes assessments, all students with learning disabilities are not subjected to the same rules and regulations.

Students with learning disabilities represent the sub-group of students with special needs ages 6-21 that perform below their cognitive abilities in one or more academic areas. These students are referred to as having mild disabilities because most of their needs and characteristics go undetected until they reach school age (Henley, Ramsey, & Algozzine, 1996; Thurlow, Elliot, & Ysseldyke, 1998). The prevalence of students with learning disabilities is difficult to estimate due to the different eligibility criteria requirements used in different states. Henley et al (1996) noted that in most cases these students are enrolled full time within regular classrooms with accommodations or receive special services in the resource room one or more periods a day. Consequently, schools use different methods of assessment to obtain a comprehensive picture of their achievement. These methods include traditional assessment with or without accommodation in most of the cases, supplemented by alternate assessment in very few cases.

The use of statewide and nationwide standardized test scores to measure educational outcomes for students with disabilities have increased over the last two decades. This increase is a result of major legislative reforms including *Goals 2000*, *School-to-Work*, *Improving America's School Act*, and the *Individual with Disabilities Education Act* (IDEA) (National Center on Education Outcomes [NCEO], 1996). As early as 1980, high stakes tests for high school exit were mandated for students with disabilities in Maryland, Kentucky, North Carolina, and Texas. For instance, the Maryland School Performance Program (MSPP) accountability system was established in 1989 by the State Board of Education as a "vehicle to move toward a high quality educational system for all of Maryland's students in the 21st century (NCEO, 1996). The MSPP requires that students with disabilities be included in state and district accountability systems. For any student to be excluded from this large-scale testing he/she must be a second semester senior transferred from out-of-state, a first time Limited English Proficient student, or not pursuing the Maryland Learning Outcomes which included scores in reading, writing, language usage, mathematics, science, and social studies. Similarly, the Accountability Based Curriculum (ABC) system in North Carolina (Jones, 1999), the Texas Assessment

of Academic Skills (TAAS) (Natrelo & Pallas, 1999), the Accountability testing in Kentucky (Stecher & Barron, 1999) and other systems share a common feature: they are totally inclusive. The accountability systems of ABC, TAAS, and Kentucky include students with and without disabilities who are subjected to the same, or slightly different, academic standards.

The 1990s have witnessed a significant impulse in the history of inclusive assessment. President Clinton's 1997 State of the Union address to the nation proposed that all students take a national test of reading in fourth grade and mathematics in eighth grade. An even more important impetus for increased focus on inclusive assessment occurred on June 1997 when Public Law 94-142 was reauthorized. Public Law 105-17 (IDEA 1997) included the requirement that students with disabilities have access to the same high standards and general education curriculum as their non-disabled peers (Yell, 1998). Public Law 105-17 also requires that students with disabilities be included in a large-scale assessment with accommodations and adaptations provided when and as needed.

In most states and districts, traditional assessment relies on criterion-referenced tests (Thurlow et al., 1998). The reason for this is that this type of test creates fewer challenges for accommodations and also allows teachers to measure students' performance against a specific criterion. It is a requirement of the law to provide students included in district and state accountability system, and eligible for traditional assessment, with the needed accommodation to "level the playing field" (Thurlow et al. 1998, p 29). Accommodations are changes in testing materials or procedures that enable students with disabilities to participate in an assessment in a way that allow abilities, rather than disabilities, to be assessed (Thurlow et al., 1998). Thurlow et al identified five main types of possible accommodations used in high stakes assessment settings. They include time accommodation, setting accommodation, scheduling accommodation, presentation accommodation, and response accommodation. Examples of accommodations are presented in Table 1.

Table 1

Examples of modifications and interventions that can be used as accommodations on high-stakes testing.

Academically Related

Study sheets	Waive time constraints	Peer assistance
Scheduled breaks	Lower/higher level material	Task/assignment sheet
Test read to student	Note taking aids	Reduce task (number)
Reduce task (length)	Small groups	Equipment
Alternative test	Multiple choice vs. essay	Highlight skills

Behaviorally Related

Adult proximity	Preferential seating	Isolated area
Contract	Reinforcement	Management system

The importance of the test accommodation is not always clear to everyone in cases of cognitive disabilities affecting learning. Controversy arises when it is believed that accommodations used with norm-reference test may change the nature of the test and in some cases significantly affects the meaning and interpretation of the students' scores (Phillips, 1994). It is still debated which accommodations preserve the meaningfulness of students' score. Advocates of test accommodation argue that providing students with disabilities with needed accommodations is fair. For them testing conditions should be altered for students with disabilities to compensate for neurological problems (Phillips, 1994). That is why some states using norm reference standardized tests (e.g. Kentucky, and Louisiana) provide students with various accommodations (Thurlow, 2001). Opponents of test accommodations often believe that some accommodations might be beneficial to students who receive them and invalidate the inference that can be made from students' performances. Not all students with mild disabilities are accommodated. Before accommodation is implemented for a student during testing it has to have been used previously during classroom instruction. When students with disabilities receive accommodations, information should be provided as far as when, what, and how it is done in the report of the test final.

In some instances, students with mild disabilities might be eligible for alternate assessment. Indeed, the 1997 Amendments of IDEA mandates that, no later than July 1, 2000, alternate assessment be an option for students who, due to the severity of their disabilities, cannot participate in the general large-scale assessment used by states and districts (IDEA Regulations, 34 C.R.F. s 300.138 (b) (1) (2) (3)).

Students who are eligible for alternate assessment might be tested on the basis of the state's content standards for all students. The content of the assessment and the strategies used to collect information on how well students are progressing toward the standards vary tremendously from one student to another and from one district to another. Thompson, Quenemoen, Thurlow, and Ysseldyke (2001) identified several forms of alternate assessment. They include performance-based assessment, authentic assessment, and "alternative" or portfolio assessment, the latter being defined as "a purposeful and systematic collection of students' performance assessment relative to standard" (p91). In either case teachers use observation, recollection, and record review to collect information on students' learning outcomes. When students take alternate assessment or the regular test with accommodations, performance should be included in state report and "flagged" showing that a particular student, even though included in the accountability system, has taken a particular assessment (Kleinert, Kennedy, & Kearn, 1999; Thompson et al., 2001).

The purpose of this paper is to provide a thorough analysis of the research literature from 1990-2004 on the effects and impact of high-stakes testing on the special education curriculum, students, and teachers and the educational outcomes of students with disabilities and the school reform movement. Finally, through such a review researchers can gain greater insights into future efforts to, not only include more students with learning disabilities in participating in high-stakes testing, but to increase the probabilities of success on these tests.

Literature Search Procedures

The following literature search procedures were employed to retrieve relevant articles. First, a computer-assisted search of four major databases was conducted including ERIC, PsycInfo, ArticleFirst, and Dissertation Abstracts. The descriptors used in the search were “testing, assessment, disabilities, mildly handicapped, and learning problems”. Second, after an extensive evaluation of the relevant electronic and paper journal articles was completed the references of these articles were examined to determine if any other articles were available that had not come up in our initial search. Finally, a hand search of reference lists and table of contents of relevant journals was conducted. This search revealed 30 studies which met the criteria for inclusion in this review.

Criteria for Inclusion

The three main criteria for inclusion in this review include: (a) articles published from 1990 to 2004; (b) studies that examined the impact of high-stakes testing; and (c) individuals included in the study are classified as having a learning disability by the authors. Due to the numerous changes to major special education laws that have taken place since 1990 our search did not include articles published prior to this date. For the purposes of this review, studies were excluded when subjects were not classified as having a learning disability in the article.

Overall Study Characteristics

There were 30 studies that ranged in publication date from 1990-2004, and appeared in referred journals such as the *Journal of Special Education*, *Journal of Learning Disabilities*, *Exceptional Children*, *Journal of Adolescent and Adult Literacy*, *The Reading Teacher*, *Education and Training of the Mentally Retarded*, *Remedial and Special Education*, *Journal of Teacher Education*, *Educational Researcher*, *School Psychology Review*, *Educational Evaluation and Policy Analysis*, *Applied Measurement in Education*, *Schools in the Middle*, *The Nation*, *Phi Delta Kappan*, and *Canadian Journal of Education*.

Gronna, Jenkins, and Chin-Chance (1998) investigated the longitudinal performance of students with disabilities in a norm-referenced statewide standardized testing program during the years 1992 to 1996. The statewide study conducted in Hawaii, included 24,595 students without disabilities and 21,411 students with disabilities in high-incidence categories (mild mental retardation [MMR], emotional impairment [EI], speech and language impairment [SLI], and specific learning disabilities [SLD]) who took the Stanford 8 without accommodation. Gronna, Jenkins, and Chin-Chance (1998) used a one-way analysis of variance with multiple-range post hoc Bonferroni tests to compare students with disabilities in Stanford 8 norm group with the population of students with disabilities in Hawaii. They reported that all students with disabilities scored lower means than the national normative group. The mean scores for students with MMR, SLD, and EI is significantly different from that of the non-disabled students in all grades tested in

reading and mathematics, from that of the non-disabled students in all grades tested in reading and mathematics, from that of the non-disabled students in all grades tested in reading and mathematics, whereas students with SLI were similar in performance to non-disabled population.

Hollenbeck, Tindal, and Almond (1998) conducted a pilot study for Oregon Department of Education to determine teachers' knowledge about allowed accommodations on statewide assessment and whether those accommodations were uniformly implemented across the state. One hundred and sixty six teachers randomly selected responded to the survey. Teachers' knowledge of accommodation was organized in four groups (strong, average, moderate, and weak high stakes decision power) and analyzed. The authors found that most teachers fell into the *weak* knowledge group (96.4%) and none (0%) in the *strong* knowledge group. The authors concluded that teacher's knowledge of accommodation was "limited enough to jeopardize the validity of score interpretation across the states for various subgroups for lack of test administration reliability" (p181). In addition, they reported that general education teachers reported use accommodations more often than special education teachers. The study also reveals that very few of the accommodations used in high stakes testing reflect universal agreement among respondents.

Kleinert, Kennedy, and Kern (1999) conducted a statewide survey of teachers involved in Kentucky's first alternate assessment and accountability system for students with moderate to severe disabilities. Two main research questions were investigated: 1) To what extent do teachers perceive benefits of including students in state and district alternate assessment accountability measures? 2) What are teachers' perceptions of the instructional impact of assessment on students' outcomes? Three hundred and thirty one teachers were surveyed. The authors found that overall teachers mentioned frustration at the increased work involved in alternate assessment process. However, they believe that it is important to include all students in the state and district accountability system. When asked whether they perceive their students benefiting from being included, 52.9% of the teachers agree or strongly agree. In contrast, teachers were less positive about the impact of alternate portfolio on helping them leverage access to general education classes.

Fuchs et al. (2000) studied the effects of test accommodations. One hundred and eighty one fourth and fifth graders with LD and 184 fourth graders without LD participated in the study, which examined whether students with LD benefit from accommodations more than students without learning disabilities. The students were to complete four brief reading assignments under four conditions: standard, extended time, large print, student reading aloud. After analysis of student's outcomes the authors found that, for extended time and large print, students with LD did not benefit more than their counterparts without disabilities. Effect size for these accommodations was almost similar with the highest effect size for students with LD (.36 and .38 for extended time; .03 and .08 for large print). In contrast to this result, they found a statistically significant interaction for students reading aloud, showing that this particular accommodation may increase scores of students with LD and depress scores for students without disabilities.

Fuchs, Fuchs, Eaton, Hamlett, and Karns (2000) compared the effects of accommodations in three mathematics domains of curriculum based measurement (CBM); computation, concepts and applications, and problem solving for students with and without LD. The primary purpose of the study was to determine if students with LD benefit from specific accommodation. Participants in the study include 181 fourth graders without LD and 192 fourth and fifth graders with LD, all tested at third grade level because the study began in the Fall, and it was believed that in the Fall students' knowledge of fourth grade curriculum is still not mastered. Furthermore, each teacher of students participating in the study was instructed to determine for each student whether accommodation should be provided and which accommodation should be implemented. After running a mixed model of two-way analysis of variance (between-subject and within subject ANOVA), the authors found a significant difference indicating that students with LD do benefit from extended time in mathematics areas that require reading extended text and producing extended verbal, written answers. Fuchs et al used McNemar post-hoc test for dependent sample to measure teachers' decision-making skills regarding awarding accommodations and found that teachers over-awarded accommodations to students.

Kampfer, Horvath, Kleinert, and Kearns (2001) examined the amount of time and effort required on states' alternate assessment. The authors surveyed 206 special education teachers who had a student participating in the Alternate Portfolio assessment in Kentucky during the 1998-1999 school years. They reported that 66% of teachers stated that they spend an enormous amount of time preparing this type of assessment, on average between 25 and 35 hours outside of instruction per portfolio. Further, the authors asserted that teachers perceived "some" benefit for the students in participating in the Alternate Portfolio assessment.

Effects of High Stakes Testing on Curriculum, Teachers, and Students

Very few empirical studies have been conducted in the area on high stakes testing effects on students with disabilities. Studies conducted in regard to this issue, prior to the 90s, were predominantly position papers. In the frame of this paper, and due to the rarity of statistics in the area, both research articles and position papers are examined in the following review.

Lacina-Gifford and Kher-Durlabhji (1993) have identified three basic problems resulting from the use of high stakes tests with students. 1) They emphasized that the methods teachers use to insure good performance by students in high stakes tests do not secure learning. 2) At all grades the curriculum is narrowed and reduced to the content of the test. 3) The authors noted that the use of a single measure to determine students' future raises some ethical questions.

Wideen, O'Shea, Pye, and Ivany (1997) conducted a two-year case study to explore the relationship between high stakes testing and the teaching of science in two school districts randomly selected from the ten districts in British Columbia. The authors interviewed a total of 80 teachers in Grades 8, 10 and 12 recorded their classroom

observations over a two-year period. During the observations, the researchers were to report the most prevailing activities students were engaged in on a five-minute period. They found that high stakes examination had a great impact on teaching especially in Grade 12. High-stakes examination creates pressure on both students and teachers, and erodes the teachers' ability to creative teaching. Most teachers in Grade 12 reported using the time allotted to teaching science to teach how to write high stakes test.

Oreffield and Wald (2000) discussed the unfairness of the system in high stakes test. They reported on minorities and students of low social economic status. They argued that high stakes testing is a way to hold schools accountable for poor and minority students' performance while punishing the students. They noted that the use of high stakes tests as widespread today contradicts the recommendations of institutions such as the National Academy of Science and the Department of Education's Office of Civil Rights regarding the use of the single test on important decisions related to students' achievement. Without rejecting the importance of assessment as "a powerful lever for shaping instruction" (Firestone, Mayrowetz, & Fairman, 1998, .95), as means to measure academic growth, the authors stated that high stakes tests are educationally unsound and appear to discriminate against minorities and students living in poverty. The authors concluded that educators need to find means for holding schools and students accountable for achievement while avoiding penalizing the disadvantaged.

Hoffman, Assaf, and Paris (2001) surveyed a group of teachers in Texas. Participants in the survey were 200 subjects who returned their responses among 500 initially randomly selected. This sample included classroom teachers, reading specialists, curriculum supervisors, and educators in leadership positions, all members of the Texas State Reading Association (TSRA). It is reported that teachers spent 8 to 10 hours of valuable instructions a week for test preparation activities. These include strategies how to do well on the test, motivation to school attendance, teaching or reviewing topics that will appear in the test, test-taking strategies, and having students practice with test forms from previous years. According to respondents, many students experienced headache, stomachache, and other disturbances that might undermine performance on the test, which might in turn adversely impact low-scoring students as well. The authors concluded that, as implemented, the Texas Assessment of Academic Skills (TAAS) is not only affecting instruction in negative ways, but also is leading teachers and students to drop out.

Educational Outcomes for Students with Disabilities and the School Reform Movement

A number of studies have evaluated special education program outcomes across the states. The main purpose of the investigations was to look at the overall educational and behavioral outcomes of students enrolled in the programs across the nation. The studies have also highlighted the partial failure of the special education program to achieve its intended role. Some of these studies are reviewed below.

Karpinski, Neubert, and Graham (1992) conducted a study of 86 students with mild disabilities (52 had graduated and 34 dropped out of high school) in a predominantly rural school district in a mid-Atlantic State. The students were interviewed at two points in time about their employment, residential status, and participation in postsecondary education and training programs. Information collected was then disaggregated to allow for comparison between the two groups on employment outcomes, participation in postsecondary education and training programs, and residential status. Karpinski, Neubert, and Graham (1992) reported that even though participants in both groups had relatively high rate of employment, the picture concerning participation in postsecondary education was not encouraging. Less than one fourth of the students in the study had participated in a postsecondary program.

The 21st Annual report to Congress on the Implementation of IDEA in 1999 noted that students with disabilities are overrepresented in correctional facilities. The statistics contained in the report are pretty alarming in revealing the negative outcomes of education of youth with disabilities in the nation. The report mentioned that in 1996-1997, 45% of students with LD, 42% of students with Emotional Disturbance, 7% of students with Mental Retardation, 3% of students with Speech or Language impairment, and 3% of Other Disabilities were held in correctional facilities. The students incarcerated might be confined in “jails, detention facilities, group homes for young offenders, adults or juvenile prisons, camps, ranches, private programs or treatment facilities” (p. II-2).

McGrew et al (1994) investigated the achievement outcome information of students across the country. The ultimate goal of the research conducted by the national Center on Educational Outcomes (NCEO) was to gather information that will help produce a policy-relevant report on the educational status of students with and without disabilities. The center has conducted a survey including all the state directors of special education and their designees. Information was gathered on state efforts in areas such as: (a) federally reported data; (b) assessment of outcomes; (c) inclusion of students with disabilities in state assessment; (d) state assessments needs and highlights; (e) activities in selected outcomes areas and practices, programs and plans related to outcomes. The initial survey included 49 of the 50 states of the nation. Of states that reported that some students with disabilities were part of their general education large-scale achievement assessment, 27 or 54% indicated that students with disabilities could be identified in their data sets. Among them, the NCEO was able to secure copies from only six states that represented 22% of the 27 from the previous group and 12% of the 50 states in the country. Large-scale assessment mainly covers reading and mathematics in most states. In other states students are assessed in writing or language. Very seldom is information in subject areas such as social studies and sciences collected. McGrew et al. also reported that aggregation across states is not always feasible.

Conclusion

The overall purpose of this review was to examine the evidence of the effects of large-scale high stakes assessment on students classified as having mild disabilities. It can be

concluded that (a) despite the mandates from IDEA 1997, students with disabilities are still excluded from state and districts accountability system. When they are tested as it appears in most of states, they might be excluded from the accountability system. The estimated prevalence of states with full inclusive accountability system is not always clear to determine. The national data reported by the NCEO on the issue do not always cover the nation, making obtained statistics less reliable. (b) Several conception papers have discussed the negatives impacts that might be associated with full inclusive assessment. Some of the drawbacks are supported by sound research data. For instance, most authors have highlighted narrowing the curriculum and reducing instructional time devoted for subject areas not tested. Wideen, O'Shea, Pye, and Ivany (1997) have used randomly selected group of stakeholders to confirm this assumption even though this particular paper bears a non-negligible limitation. The authors did not specify the demographic characteristics of the population included in the research. For instance we don't know how many students with special needs participate in the study. (c) It appears that participating in high stakes testing does not necessary mean being included in state or district accountability system. When they can be assessed, students with mild disabilities can take the regular test with accommodation, without accommodation, or alternate assessment. Controversies arise when students with disabilities participate in high stakes testing with accommodations, and when they take alternate assessment. Another important finding in this area is that most studies on testing with accommodation focus on students with LD. Again any generalization to the group of students entitled to test accommodation is almost impossible. In addition most papers used intact groups of various stakeholders. Seldom are random samples used. For example statewide reports and surveys provided valuable information. It also can be noted that some of the studies are really explicit in reporting their findings. Fuchs et al. (2000) reported the presence of "boost" but failed to make the reader comprehend this result. High stakes policies have some unintended consequences that might in a long term affect students receiving test accommodations or alternate assessment. For instance it is reported that upon publication of test scores, teachers of low-ranked schools leave the field for better employment, and students whose scores are "flagged" may get low-paid employment. (d) This review of literature on high stakes assessment and students with learning disabilities is enriching. It is philosophically sound to include students with disabilities in states and district accountability system. School officials will take students' educational outcomes more serious. The main lack in the present literature on high stakes assessment is the noticeable absence of parents and students' input. Knowing parents and students perceptions of high stakes assessment and its consequences appears to be very interesting areas to explore. In some states when students pass the test with accommodations, or when they take the alternate assessment, in place of a diploma they receive a certificate. It also is important to examine the meaning of the certificate on the job market and how it might impact the students; social, financial, and emotional well-being.

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Special Education Professionals and Assistive Technology: Requirements for Preparation in a Digital Age

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Abstract

This article presents contextual background for the preparation of teachers to effectively use assistive technology (AT) with students with disabilities. A brief description of student uses of technology is presented, noting how students have changed in their understanding and use of information technologies. The role of AT is then presented, linking the role of special education professionals in today's schools with current teacher preparation practices. Discrepancies are noted between what is needed to best serve Digital Age students in the schools, and the manner and extent to which teachers are prepared. Using existing standards and addressing emerging AT training needs, the authors propose three distinct levels of preparation: an AT (a) practitioner, (b) specialist, and (c) leader. Specific roles of each of these personnel are delineated. The instructional potential use of hybrid models of professional development classroom instruction combined with computer-based learning) is recommended as particularly promising approach.

Special Education Professionals and Assistive Technology: Requirements for Preparation in a Digital Age

Cultural, educational, and legal changes have dramatically increased the diversity of students served in the nation's schools (Rose & Myer, 2002). Today's classrooms welcome students from a wide variety of cultural, economic, and linguistic backgrounds, and with diverse levels of academic aptitude. While many students are experiencing success, others, especially those whose first language is not English, those with behavioral, attentional, and motivational challenges, and/or especially those with sensory, communication, cognitive, emotional or learning disabilities, are struggling (Rose & Meyer, 2002). Among the attempts to address these challenges has been Universal Design for Learning (UDL) which builds upon individual differences with inclusive, differentiated, and technology-supported instruction (Council for Exceptional Children, 2005). The recent Individuals with Disabilities Educational Improvement Act of 2004 (IDEIA, P.L. 108-446) defines and supports the use of universal design as a means to maximize access to the general education curriculum by students with disabilities.

Along with this changing school landscape, student outcomes have become a clear focus of national debate and action. Both the IDEIA and the No Child Left Behind Act of 2001 (NCLB, P.L. 107-110) have set academic success for *all* students, including those with disabilities, as the fundamental goal for the nation's schools (e.g., Turnbull, Huerta, & Stone, 2006).

Growing Expectations for Students with Disabilities

A primary goal of the NCLB is to have *all* students achieving at grade level by 2014 (Learning First Alliance, 2003). To achieve this, states set specific scores, known as proficiency levels, on their reading and math tests to indicate grade-level performance. States next set student performance goals based on test results from previous years. Student performance goals will be raised on a regular schedule until 2014 so that at that point all students, and all subgroups of students, will be performing at grade level (Learning First Alliance, 2003).

Perhaps most significantly for special education, test scores must be reported not just for overall student performance in a school, but also for specific groups within the schools. These subgroups include low-income students, those belonging to racial or ethnic minorities, students with limited English proficiency, and significantly for special educators, most students with disabilities. Schools and districts are required to demonstrate annually that all groups of students are meeting state goals for grade-level work. If this is reached, the school or district is confirmed as making Adequate Yearly Progress (AYP).

Schools and districts will not be counted as making AYP if any one (or more) of the specific student groups or subgroups fails to achieve the performance goal. Schools not making AYP for two years in row are considered "schools in need of improvement." If schools continue to fall short of AYP, they face more extensive changes, including possible restructuring, state takeover, or management by private firms (Learning First Alliance, 2003).

Certainly most school professionals would agree that setting high expectations for students, including those with disabilities, is associated with higher levels of student achievement. However, emerging data suggest that students with disabilities, especially those with learning and academic disabilities, to date may not be performing at grade level on state-wide tests of achievement.

For example, in 2005 the state of Ohio reported that 85.3% of eight graders without disabilities were proficient in reading, and 66.3% were proficient in math. For students with disabilities, the comparable figures were 39.8% and 27.7%, respectively (Ohio Department of Education, 2005).

Growth in Technology

Parallel with these increases in academic expectations for all students is the growth in the role of educational technology in the schools. Costs of these technologies are falling while greater potential educational benefits are emerging. Technology in general is increasingly woven into the fabrics of everyday life, in both home and school.

For example, by 2001, 90% of children and adolescents were using computers, with almost 60% regularly accessing the internet. This usage is beginning at younger and younger ages, as 75% of five year olds are presently using computers. In contrast to previous reports from the 1990s, there are no longer significant differences in usage by boys and girls. More computer usage is occurring at school (81%) than at home (65%), especially for children from low income homes (National Center for Education Statistics, 2003). In 2002, the number of students per computer with internet access in public schools had declined from an average of 12:1 in 1998 to less than 5:1, a ratio that likely has dropped still more since (Mark, 2003).

More recent reports suggest that student access to all technologies continues to grow. In a 2005 study of middle school students, Peterson-Karlan, Wojcik and Parette reported that (a) 50% lived in homes with more than one computer; (b) 100% of these computers were connected to the Internet, with 58% equipped with high-speed Internet access; and (c) 31% had computers with Internet access in their bedrooms. Other related technologies also widely embraced by students include video games (79%), telephones (76%), Internet (59%), e-mail (43%), cell phones (32%), and electronic organizers (11%) (Friedman, 2004).

This explosion in technology use by students is clearly evident in schools as well. In the area of writing and literacy development, use of word processors incorporating such features such as spelling and grammar checkers are both accepted and promoted as tools for successful writing (Jankowski, 1998; Leibowitz, 1999). In math, the use of calculators increasingly is accepted as a standard tool permitting students to focus on problem-solving rather than computational issues (e.g., Gilliland, 2002). These and related technologies hold special promise for students with academic disabilities (e.g., Hetzroni & Shrieber, 2004), as they directly addresses challenges typically encountered by such students.

Changes in Students, Teachers, and Society

Parallel with the technology revolution are substantial cognitive and behavioral changes in today's students and youngest teachers. These children, adolescents, and young adults have greater comfort with technology, greater skills in technology use, and greater expectations for digital technologies than previous generations (Peterson-Karlan et al., 2005). A linguistic analogy may be useful here.

For example, it is common for immigrants to this country to develop only rudimentary skills in spoken English. However, their children, raised while surrounded and bombarded by spoken English, usually become very fluent at early ages. Similarly, contemporary young people might be conceptualized as "digital natives," while their parents (and often teachers) are "digital immigrants" (Grandgenett & Topp, 2005). As with their linguistic counterparts, while digital immigrants may master rudimentary skills, they are unlikely to achieve the overall levels of fluency that are typical of digital natives.

Unlike their predecessors 15 years ago, students beginning their studies at universities today usually arrive with a well-established foundation of technology skills. These changes have caused a shift in university technology course content, from an emphasis on personal or

professional productivity to the use of technology to support curriculum implementation (i.e., technology integration; Smith, 2001).

The cumulative effects of the changes in the growth of technologies, as well as in the skill sets of the users of those technologies, are impacting legal mandates regarding the incorporation of technology in education. The NCLB, with its emphasis on student achievement, is forcing educators to more carefully consider the potential contributions of educational technology as they seek to reach the AYP goals for all students (Trotter, 2003). For example, some school districts are exploring the distribution of laptop computers to all students in a district (e.g., Renwick, 2006). Since almost all students with disabilities are being held to the same academic achievement standards as are their nondisabled counterparts, the use of technology by these students may be especially critical.

Assistive Technology

Over the past two decades, many types of *assistive technology* (AT) have been developed for people with disabilities. These devices are designed to assist individuals in learning, make their environments more accessible, enable them to compete in the workplace, enhance their independence, and in short, improve their quality of life (Blackhurst, 2005). Typical examples designed to enhance learning and academic success include software that “reads” on-screen text out loud, and writing software that “predicts” the next word in student compositions. There are now more than 25,000 AT items, equipment and product services (Abledata, as cited in Edyburn, 2000) available for use with over 6 million students ages 6-21 with disabilities.

Recognition of the potential for AT to impact the educational and life success of students with disabilities led to specific AT requirements in the Individuals with Disabilities Education Act Amendments of 1997 (IDEA, P. L. 105-17), and the more recent IDEIA. These legislative acts required that AT *must* be considered in the development of any student’s IEP (Turnbull, Huerta, & Stowe, 2006).

Early conceptualizations of the potential contributions that AT might offer individuals with disabilities focused on physical, sensory, and communication impairments. Examples of this sort of assistive technology include communication wallets (containing pictures so that non-verbal individuals might communicate with others), electronic communication devices, wheelchairs, prone standers, adapted eating utensils, large print or books-on tape, Braille watches, closed captioning televisions, hearing aids, sound field amplification systems, and alternatives to the typical computer interfaces of a mouse or keyboard. Since that time, professional thinking about the life enhancement possibilities of AT have dramatically expanded the horizons.

One practical organizational framework for AT proposed by Blackhurst (2005, as supplemented by Behrmann & Jerome, 2002) suggested that AT can enhance, improve, or maintain an individual’s performance capabilities in the following seven areas:

- existence (activities of daily living)
- communication
- body support, protection, and positioning
- travel and mobility
- environmental interaction

- sports, fitness and recreation
- academics

These are further explained.

Existence, or activities of daily living, includes those basic responses needed to maintain everyday life, such as eating, dressing, bathing, grooming, and sleeping (Blackhurst, 2005). AT that can assist in these areas includes such nonmedical equipment as adapted eating utensils, dressing aids, specialized clothing or fasteners, personal hygiene and grooming aids.

Communication includes the abilities to receive and express communication in both oral and written or visual form or to engage in social interactions (Blackhurst, 2005). AT designed to assist with communication includes augmentative and alternative communication devices, hearing aids and assisted listening devices, telephone amplifiers, captioned video, and writing and drawing aids.

Body support, protection, and positioning refers to the needs for assistance that some students with disabilities have when they attempt to sit, stand, align or stabilize their bodies, or protect themselves when falling (Blackhurst, 2005). Technologies here that can help include braces, chair inserts, prone standers, furniture adaptations, or protective headgear.

Travel and mobility includes the ability of the person to navigate the environment by walking, driving, climbing stairs, or transferring position, e.g., from a sitting to a standing position, from lying prone to standing (Blackhurst, 2005). AT that can help with travel and mobility includes wheelchairs, walkers, crutches, canes for the visually impaired, adapted tricycles, scooters, car or bus lifts or adaptations to automobile steering, acceleration and braking controls.

Environmental interaction refers to the indoor and outdoor settings associated with daily living (e.g., food preparation, use of appliances, alterations to living spaces; operation of lighting controls) or access to community, school and workplace environments. AT here includes modified door or drawer handles, adjustable desks, or grabbers to reach items on high shelves (Blackhurst, 2005).

Sports, fitness and recreation includes those abilities and functions associated with individual participation in sports, physical fitness, hobbies or crafts and any other productive use of leisure time (Blackhurst, 2005). AT that can help here includes such things as balls that beep audibly for visually impaired ball players, skis for individuals with single leg amputations, adapted aquatics, Braille playing cards, and specialized wheelchairs for such activities as basketball or “off-road” travel.

Academics refers to the set of knowledge and skills required for success in such typical school activities as reading, writing, math, information acquisition, organization, and cognitive processing (Thompson, Bakken, Fulk, & Peterson-Karlan, 2005). Such devices as calculators or spell checkers in word processing programs are found in most contemporary classrooms.

So when does a commonly found device such as a calculator become AT? Most students without disabilities are able to master fundamental arithmetic calculations without a calculator, or basic

spelling skills without a spell checker. For these students, these technologies are simply supplementary tools. However, students with learning disabilities or cognitive impairments may not be able to do these skills at minimum competency levels without these devices, and thus in their absence would not be able to gain meaningful access to the general education curriculum. For these students, then, these devices would and should be considered AT.

Thus, some AT used with students who have disabilities is the same technology that might be used by anyone (e.g., a calculator or a book on CD). Other versions of AT use technology not typically used by nondisabled individuals (e.g., a voice output screen reader) to enhance the performance of individual students with disabilities (Blackhurst, 1997).

Special Educators and Assistive Technology

Increasingly, then, special education professionals must be knowledgeable about and proficient in, the use of AT to improve performance of students with disabilities. The ability of contemporary special educators to utilize appropriate AT directly and powerfully impacts the probability that their students will achieve meaningful educational outcomes. Unfortunately, there are indicators that the AT preparation of educational professionals to date may be less than adequate.

For example, as of 2002, less than half of teacher preparation programs had stringent technology requirements. Few preservice training programs included coursework or experiences specific to applications and issues in assistive technology (Lahm, 2003). Further evidence of this inadequate attention to AT was identified in a 2003 survey of university coordinators for graduate level special education programs. In that report, Michaels and McDermott found significant discrepancies between (a) the importance placed on understanding, using, and making decisions about AT; and (b) the degree to which AT knowledge, skills and dispositions were included in their curriculum. Overwhelmingly, the importance of AT was rated as greater than the rating of their curricular attainment.

Back in 1998, projections at the time suggested that AT might be used with up to 35% of students with learning or cognitive disabilities or health impairments; with up to 75% of students with autism or traumatic brain injuries; and with up to 100% of students with physical or multiple disabilities, students who are deaf or hearing impaired, or students who are blind or visually impaired (Golden, 1998). The projections for students with learning disabilities were relatively modest and probably low, since they were made prior to the widespread market availability of a variety of software tools to support writing and reading (e.g., portable keyboarding devices, scan-and-read text programs, e-text voice output reading programs, voice output word processors, and word prediction writing support programs).

However, in practice these projected levels of AT utilization (35% to 100%) have yet to emerge. For example, in a random sample of 1000 special education teachers in Kentucky, Hasselbring and Bausch (2004) found that only 22% of their students had AT documented in their IEPs. For 34% of their students, AT apparently had not even been considered, a clear violation of IDEA.

A reasonable conclusion is that to date teachers in general, and special educators in particular, have been inadequately prepared to consider, select, and implement assistive technology in their classrooms. The remainder of this article will address (a) the knowledge and skills necessary for special educators to competently assume appropriate professional responsibilities in the area of assistive technology, and (b) a proposed model for a comprehensive approach to preparing educational professionals to successfully incorporate assistive technology in their work with students with disabilities.

The Emerging Role of Technology Standards: Knowledge and Skills

Despite the obvious importance of technology skills for special educators in the 21st century, relatively few preservice training programs include substantial coursework or experiences on AT applications and issues for students with developmental disabilities (Wojcik, Peterson-Karlan, Watts, & Parette, 2004). As a result, special education professionals often are ill-prepared to effectively use and integrate AT (Ashton, 2004; Hasselbring & Bausch, 2004). The capacity of school systems to fully implement the IDEA mandate of AT consideration is significantly compromised (Hasselbring & Bottge, 2000), along with compromising the ability of schools to have their subgroups of students with disabilities meeting AYP goals.

To assist teacher preparation programs in preparing special educators with needed skills in assistive technology, the Council for Exceptional Children (CEC) is proposing a set of beginning *Special Education Technology Specialist Standards* (Council for Exceptional Children, in press). These technology standards, including both knowledge and skills competencies, are structured around the ten basic CEC standards as follows:

- Standard 1: Foundations
- Standard 2: Development and Characteristics of Learners
- Standard 3: Individual Learning Differences
- Standard 4: Instructional Strategies
- Standard 5: Learning Environments and Social Interactions
- Standard 6: Communication
- Standard 7: Instructional Planning
- Standard 8: Assessment
- Standard 9: Professional and Ethical Practice
- Standard 10: Collaboration

As used in the *Special Education Technology Specialist Standards*, each of these ten standards contains from one to twelve assistive technology-specific knowledge or skills competencies in that area. Table 1 presents the complete list of these 48 competencies as broken out by CEC standards. Although these standards are referred to as the “*Special Education Technology Specialist Standards*,” many would hold that these are basic AT skills needed by *all* special educators, given the IDEA mandate that AT must be considered in developing all IEPs for students with developmental disabilities (Peterson-Karlan & Parette, in press).

Table 1

CEC Knowledge and Skill Base for All Beginning Special Education Technology Specialists

Standard 1:	Foundations
Knowledge:	Concepts and issues related to the use of technology in education and other aspects of our society.
Skills:	Articulate a personal philosophy and goals for using technology in special education. Use technology-related terminology in written and oral communication. Describe legislative mandates and governmental regulations and their implications for technology in special education.
Standard 2:	Development and Characteristics of Learners
Knowledge:	Impact of technology at all stages of development on individuals with exceptional learning needs.
Skills:	None
Standard 3:	Individual Learning Differences
Knowledge:	Issues in diversity and in the use of technology.
Skills:	None
Standard 4:	Instructional Strategies
Knowledge:	None
Skills:	Identify and operate instructional and assistive hardware, software and peripherals. Provide technology support to individuals with exceptional learning needs who are receiving instruction in general education settings. Arrange for demonstrations and trial periods with potential assistive or instructional technologies prior to making purchase decisions.
Standard 5:	Learning Environments and Social Interactions
Knowledge:	Procedures for the organization, management, and security of technology. Ergonomic principles to facilitate the use of technology.
Skills:	Evaluate features of technology systems. Use technology to foster social acceptance in inclusive settings. Identify the demands of technology on the individual with exceptional learning needs.
Standard 6:	Communication
Knowledge:	None
Skills:	Use communication technologies to access information and resources electronically.
Standard 7:	Instructional Planning
Knowledge:	Procedures for evaluation of computer software and other technology materials for their potential application in special education. Funding sources and processes of acquisition of assistive technology devices and services. National, state, or provincial PK-12 technology standards.
Skills:	Assist the individual with exceptional learning needs in clarifying and prioritizing functional intervention goals regarding technology-based evaluation results.

Identify elements of the curriculum for which technology applications are appropriate and ways they can be implemented.

Identify and operate software that meets educational objectives for individuals with exceptional learning needs in a variety of educational environments.

Design, fabricate, and install assistive technology materials and devices to meet the needs of individuals with exceptional learning needs.

Provide consistent, structured training to individuals with exceptional learning needs to operate instructional and adaptive equipment and software until they have achieved mastery.

Verify proper implementation of mechanical and electrical safety practices in the assembly and integration of the technology to meet the needs of individuals with exceptional learning needs.

Develop and implement contingency plans in the event that assistive or instructional technology devices fail.

Develop specifications and/or drawings necessary for technology acquisitions.

Write proposals to obtain technology funds.

Standard 8:	Assessment
Knowledge:	Use of technology in the assessment, diagnosis, and evaluation of individuals with exceptional learning needs.
Skills:	Match characteristics of individuals with exceptional learning needs with technology product or software features. Use technology to collect, analyze, summarize, and report student performance data to aid instructional decision-making. Identify functional needs, screen for functional limitations and identify if the need for a comprehensive assistive or instructional technology evaluation exists. Monitor outcomes of technology-based interventions and reevaluate and adjust the system as needed. Assist the individual with exceptional learning needs in clarifying and prioritizing functional intervention goals regarding technology-based evaluation results. Work with team members to identify assistive and instructional technologies that can help individuals meet the demands placed upon them in their environments. Identify placement of devices and positioning of the individual to optimize the use of assistive or instructional technology. Examine alternative solutions prior to making assistive or instructional technology decisions. Make technology decisions based on a continuum of options ranging from no technology to high technology.

Standard 9:	Professional and Ethical Practice
Knowledge:	Equity, ethical, legal, and human issues related to technology use in special education. Organizations and publications relevant to the field of technology.

Skills:	<i>Maintain ongoing professional development to acquire knowledge and skills about new developments in technology.</i> <i>Adhere to copyright laws about duplication and distribution of software and other copyrighted technology materials.</i> <i>Advocate for assistive or instructional technology on individual and system change levels.</i> <i>Participate in activities of professional organizations relevant to the field of technology.</i>
Standard 10:	Collaboration
Knowledge:	<i>Roles that related services personnel fulfill in providing technology services.</i> <i>Guidelines for referring individuals with exceptional learning needs to another professional.</i>
Skills:	<i>Conduct in-service training in applications of technology in special education.</i> <i>Refer team members and families to assistive and instructional technology resources.</i> <i>Collaborate with other team members in planning and implementing the use of assistive and adaptive devices.</i> <i>Instruct others in the operation of technology, maintenance, warranties, and trouble-shooting techniques.</i>

One criticism of the current state of AT service delivery in the U.S. is based on its reliance on an “expert” model, wherein school systems rely on a few highly trained AT specialists. This results in a “funneling effect,” since only small portions of the expert’s knowledge base can be passed on to others in the system (SEAT Center, 2004). As a result of this ongoing reliance on “experts,” front line special educators may not develop needed levels of AT knowledge and skills.

One promising way to approach the development of an initial set of basic but critical AT knowledge and skills in beginning special educators is to first review the seven life areas to which AT can make substantive contributions (Behrmann & Jerome, 2002; Blackhurst, 2005) (existence, communication, body support, travel and mobility, environmental interaction, sports, and academics), with perhaps special attention to the area of academics. Then the CEC *Special Education Technology Specialists* standards of knowledge and skills might be overlaid onto those seven life areas, generating AT knowledge and skills requirements specific to each area that special educators need to enhance student function and independence.

A Proposed Model for Professional Development in AT

Such established teacher accreditation agencies as the National Council for the Accreditation of Teacher Education (NCATE) have long acknowledged the usefulness of offering multiple levels of recognition of teacher competence. In the NCATE accreditation system, these two levels include (a) Initial Teacher Preparation programs, and (b) Advanced Teacher Preparation programs.

Initial Teacher Preparation programs are programs at the baccalaureate or post-baccalaureate levels that prepare candidates for the first license to teach. They include five-year programs, master's programs, and other post-baccalaureate and alternate route programs that prepare individuals for their first license in teaching. Standards established for this level reflect the basic skills that all education professionals should possess prior to entering a classroom and assuming responsibility for the education of children (NCATE, 2006).

Advanced Preparation Programs are typically programs at post-baccalaureate levels for the continuing education of teachers who have already completed initial preparation programs. These advanced programs commonly award graduate credit and include master's, specialist, and doctoral degree programs as well as non-degree licensure programs offered at the post baccalaureate levels (NCATE, 2006). These higher advanced standards assume a comprehensive foundation of basic education knowledge and skills, and seek to recognize advanced levels of professional mastery.

In the area of assistive technology, similar proposals have emerged in which differing levels of knowledge of and skills might be recognized (SEAT Center, National Center for Technology Innovation, and the University of Kansas, 2006). One recent plan (Peterson-Karlan, Wojcik, & Parette, 2005) outlined three levels of professional competence in AT. At the basic level, all special educators would have the basic knowledge and skills to serve as *AT Practitioners* within school systems, working directly with children in classrooms. As special educators, these individuals would have fundamental knowledge and skills in AT over and above the basic technology skills required of all teachers, including general educators. *AT Practitioners* would be able to function independently in most situations involving the identification, implementation, and evaluation of common AT for students with disabilities whom they serve in their classrooms.

At the next level, *AT Specialists* would support special educators and IEP teams in schools and districts, a structure earlier proposed by Lahm (2003). *AT Specialists* would possess specific expertise in an array of AT devices and services, and would be able to provide guidance and leadership to IEP teams and families in unusual or particularly challenging AT circumstances. They would also assist in the on-going education and professional development needed to assist families to use technology and teachers to keep current with technology updates and advances.

Lastly, *AT Leaders* would have skill sets enabling them to work within and across school systems, functioning at the district, state, regional, or national levels, to further policy and procedures and to lead systems to develop effective implementation of AT services within schools settings. These experienced individuals should possess truly cutting edge sets of knowledge and skills in AT and be knowledgeable about technologies appropriate for both students with high incidence and students with low incidence disabilities while understanding principles of program evaluation, development, and implementation

Perhaps needless to say, these *AT Practitioners*, *AT Specialists*, and *AT Leaders* must additionally possess the skills necessary to collaborate with both families and with general education professionals, who themselves may possess critical technology skills as well as basic knowledge of AT (Peterson-Karlan et al., 2005). Given the increasingly shared responsibilities inherent in the contemporary delivery of special education services, including AT, these skills in collaboration are indispensable in contemporary schools (Hourcade & Bauwens, 2003).

Implementing Professional Development

The convergence of technology development and widespread familiarity with the technology has transformed the ways in which both teachers and students prepare and learn. This same convergence can transform the ways in which special educators are prepared and supported to use AT.

Hybrid models of teacher preparation and professional development refer to programs that combine face-to-face classroom instruction with computer-based learning. A number of hybrid models of assistive technology education have been developed, often using web-based multimedia learning and knowledge assessment activities combined with direct experiential, performance-based learning with AT tools and strategies (Puckett, 2004; Wojcik et al., 2004). This hybrid approach offers the potential to extend the reach of professional development from a few large, well-equipped teacher education programs and a hodge-podge of local and state professional development efforts to a comprehensive and sustainable system of professional preparation. As such programs are developed and implemented, they should be accompanied by research targeting the identification and validation of maximally effective e-learning constructs and service delivery models (Meyen et al., 2004).

Conclusions

Special educators today are facing unique challenges and opportunities caused by the convergence of two powerful societal forces: (a) the demands for accountability for learning by all students, including those with disabilities; and (b) the exponential growth in the potential of assistive technology to facilitate that learning. One might even argue that the former demand would be impossible without the latter resource.

AT-based solutions for the challenges experienced by students with disabilities hold great promise. However, this promise can only be realized when thoughtfully integrated into educational practices. Challenges to realizing this promise include continuing needs for (a) well-articulated models of standards and performance in technology and assistive technology that build from those needed by all teachers to those needed by the AT practitioners, specialists and leaders (b) development of curriculum models and materials for AT curriculum implementation which are scalable to the needs of those who provide teacher preparation and professional development (c) integration of technology into the teaching of the use of technology (d) evidence of effectiveness of the efforts of technologically well-prepared teachers upon student outcomes.

As special educators gain more sophisticated theoretical and practical mastery of the tremendous potentials inherent in assistive technology, the success of their students with disabilities in academic programs, and the levels of post-school success in homes, jobs and communities, will be significantly enhanced.

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BOOK REVIEW

The Short Bus: A Journey Beyond Normal

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Abstract

The Short Bus: A Journey Beyond Normal is a colorful and revealing series of case studies with individuals generally considered "different" by society. Author, Jonathan Mooney traveled cross-country to seek out people who celebrate what others consider disabilities and to tell their tales. The stories they share are funny, enlightening and just as unique as the people who tell them.

The Short Bus: A Journey Beyond Normal

It is often true that, "you can't judge a book by its cover". However, in *The Short Bus: A Journey Beyond Normal*, the reader can get a feel of the book's unconventional tone merely from its title. *The Short Bus* is a humorous, honest and unsentimental story of a road-trip across America. Author, Jonathan Mooney drove a run-down shortened school bus or "short bus" across country to meet people who live their lives outside of what society considers "normal".

Mooney explains that he chose to drive a short bus because it is one of the most popular and enduring symbols of special education in America. He observes that being a "short bus rider" has evolved into slang used to ridicule someone for their perceived differences. Growing up with a severe learning disability himself, the author felt some of the pressure, anger and frustration associated with trying to be "normal". However, rather than be ashamed of his perceived differences, Mooney learned to embrace them. During the course of the book, he hits the road to seek out like-minded individuals and to tell their stories.

One of the first people that Mooney interviewed is Kent Roberts. Roberts is a comedian and author with attention deficit hyperactivity disorder (ADHD). Roberts was often teased by other children for not fitting in. He decided early on in life that the best way for him to fit in was to be "the freak". This included behaviors that gathered the attention and disapproval of his teachers such as eating his phonics textbook. Roberts feels that he got the last laugh since he now gets paid to engage in similar "anti-social" behavior.

Among the other non-conformists that Mooney spends time with include Cookie, a small town transvestite with a developmental disability and Miles Davis, a potty-mouthed

fifteen year old boy with both a genius-level I.Q. and a severe learning disability. Mooney's encounters are always interesting, sometimes controversial, but never disrespectful. The author has a true gift for finding the humor and absurdity in a person's situation, yet respecting their dignity. On many occasions, the reader laughs *with* these folks, but never *at* them.

In addition to the colorful interviews, Mooney treats the readers to a few choice American history lessons. He points out instances of how our country has mostly ignored or abused those citizens considered different in years past. In one of the most poignant sections, Mooney travels through Charlottesville, Virginia in an attempt to visit a roadside memorial dedicated to Carrie Buck.

In 1927, the United States Supreme Court upheld the authorization of the involuntary sterilization of Buck. Previously, the commonwealth of Virginia deemed her, her mother and her one-year old daughter as "feeble-minded". Supreme Court Justice, Oliver Wendell Holmes voiced majority opinion on the case by stating "three generations of imbeciles are enough".

Mooney is distraught when he is unable to locate the memorial. He becomes more saddened and upset when not one person from the town, including a woman working at the tourism bureau, has ever heard of such a thing. However, the tragic irony of a forgotten memorial is not lost on the author.

The Short Bus is a powerful story about an odyssey in search of something different. Readers who are not put off by frequent profanity or black humor will be rewarded by a fascinating story that will allow them to better understand how similar we all are. Without the saccharine-sweetness of similar inspirational books about people with disabilities, *The Short Bus* gives its readers a more honest account of the joys and sorrows associated with being labeled "different" by society.

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