GENERAL OR VOCATIONAL CURRICULUM: LD PREFERENCE

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This study assessed the perceptions of high school students with learning disabilities about the suitability or preference of an academic or vocational curriculum. Students were administered the Vocational Academic Choice Survey (VACS), designed to measure students' perceptions of which curriculum is more suitable for them. Results revealed that a more academic type of curriculum was preferred if students had not repeated a grade, achieved a relatively high GPA, and planned to go to college. Post high school plans and positive attitudes toward academic subjects showed to be the strongest predictors of the suitability score. By itself, post high school plans accounted for about 35% of the variance in curriculum suitability.

In the 1980's, the publications *A Nation at Risk* (1983) and the *Curriculum and Evaluation Standards for School Mathematics* (1989) suggested that in order to raise the standards for quality education, students in American schools should have access to a challenging curriculum. This recommendation had significant impact on the development of standards-based curricula to improve education for K-12 regular students; however, special education remained unaffected by the movement for high standards and high-stakes testing in the eighties and early nineties (AYPF & CEP, 2001; Pugach & Warger, 2001). Almost two decades had elapsed before the Individuals with Disabilities Education Act Amendments of 1997 (IDEA; P. L. 105-17, 1997) and the No Child Left Behind (NCLB) Act of 2001 legislated that students with disabilities were to be taught with the same curriculum as non-disabled students, as uniform standards extended the curriculum reforms to all students. An additional component of IDEA required effective transition services regarding students' post school success. In short, students with disabilities were required to participate in state mandated testing rooted in national standards (McDonnell, McLaughlin, & Morison, 1997; NCLB, 2001; P. L. 105-17, 1997), with less than 2% estimated to require alternative assessments due to significant disabilities (Ysseldyke & Olsen, 1999; Ysseldyke, Olsen, & Thurlow, 1997). By January 2000, 48 states indicated that they had complied with the accountability mandate requiring that to the maximum extent possible all students be included in district and statewide assessments. Among these states, 44 had adopted standards in the core academic disciplines (language arts, mathematics, social studies, science), while 41 included these standards in their assessments (Jerald, 2000).

Standards-based curricula and testing are designed to link assessment to instruction, specifying knowledge and skills students must demonstrate through a common sequence of targets with the goal of improving and equalizing achievement for both general and special education students (Sandholtz, Ogawa, & Scribner, 2004). To facilitate proficiency in the standards for students with disabilities, teachers respond by adapting the state curriculum in terms of differentiating instruction, without compromising the standards, in addition to the extra support, such as state approved testing accommodations (e.g., large print, extended time) that maintain the validity of the tests (Bolt & Thurlow, 2004; Conderman & Katsiyannis, 2002).

In 2004, Congress approved the reauthorization of IDEA. The new law (Individuals with Disabilities Education Improvement Act of 2004) reaffirmed that school reform efforts to improve educational outcomes for students with disabilities entail participation in the regular curriculum. Prior regulations had already identified the regular classroom as the most appropriate placement for students with disabilities as well as concomitant access and progress in the general education curriculum (Public Law 105-17, 1997; U.S. Department of Education, 1999). Pugach and Warger (2001) remarked that much of the reform in regular education has centered around the curriculum, in direct contrast to special education with its focus on placement issues, such as reintegration of students with disabilities in the regular setting. They suggested a new reconceptualization of special education in order to recognize that the Individualized Education Program (IEP) can no longer continue as the curriculum guiding instruction, especially for students in the mild to moderate range, but rather to consider the IEP as a

document describing the types of supports needed (e.g., supplementary aids) for the child with disabilities to receive benefits from the general curriculum.

As the new trends move more and more toward the involvement and progress of students with disabilities in the general curriculum, students with high incidence disabilities may be the most directly impacted, particularly those with LD, as they have a higher rate of placement in regular classroom and participation in high-stake testing than students with other disabilities (AYPF & CEP, 2001). A challenging curriculum for regular students places additional demands on students with LD when their cognitive ability, analytical skills, and prior knowledge may be below the levels necessary to access the standards-based curriculum (Woodward & Montague, 2002). To bridge the gap between more specialized or alternative curricula for students in special education, curricula for students with LD have focused on acquiring basic skills in the core subjects (Bryan & Warger, 1998) as a response to deficits in language disorders, processing information (Raymond, 2000), organizational deficit (Kirk, Gallagher, & Anastasiow, 2003), attention problems (Olson & Platt, 2004), generalization difficulty (Troia, Graham, & Harris, 1999), poor motivation (Fulk, 1996; Olson & Platt, 2004), and immature strategies (Goldman, Pellegrino, & Metz, 1988). When compared with regular students, these deficits seem to translate into performances below grade level in reading, writing, and mathematics for students with LD (Maheady, Sacca, & Harper, 1988; Olson & Platt, 2004).

McDonnell et al. (1997) indicated that little is known about the consequences of the reform efforts on students with disabilities. Initial reports on academic achievement related to the core curriculum showed that students with LD do not perform as well as their non-disabled peers (AYPF & CEP, 2001). The current spectrum of instruction seems to emphasize the academic core content subject areas (i.e., Science, Math, Social Studies) (Warger & Pugach, 1996), but may not address the educational needs of some LD students whose academic potential may be more suited for a non-intensive academic curricular. Advocates for special education have noted that the NCLB Act failed to account for the range of abilities represented by students with LD by ignoring other areas, such as vocational training, that may increase the likelihood of students with LD completing high school (Turnbull, Turnbull, Wehmeyer, & Park, 2003). A vocational curriculum prepares students for the contemporary workplace by providing education through work (work as the context of learning), education about work (social aspects of work), and education for work (computer abilities) (Castellano, Stringfiled, & Stone, 2003). Cognitive research supports the idea that students learn better when the required skills are taught within a *real* environment (Lave, 1988; Resnick, 1987).

Research has identified the curriculum needs of secondary students with LD as perceived by parents, teachers, and administrators, while little research has addressed the perceptions of high school students with LD of an *appropriate curriculum*. A survey of parents of students with LD revealed their preference for a curriculum designed to prepare all students to be independent and contributing members of society, although little consensus emerged as to how to define this issue (Halpern & Bernz, 1987). In that survey, parents agreed with teachers and administrators on the availability and utilization of the traditional curriculum, while reporting that life-skills curricula were infrequently utilized. In other studies, special education teachers indicated that one of the most needed academic improvements to provide better outcomes for students with LD is a curriculum that includes remediation of basic skills and life-skills (Conderman & Katsiyannis, 2002; Halpern & Bernz, 1987). Additionally, the more recent programmatic evaluations showed that teachers rarely make use of a vocational curriculum (Bouck, 2004; Conderman & Katsiyannis, 2002), a significant shift from previous reports (Benz & Halpern , 1987; Halpern & Bernz, 1987). Overall, states with minimum competency tests for graduation, such as Florida, seemed to have reduced the number of vocational courses which impact students' selection of a vocational concentration (Bishop & Mane, 2005).

Given the importance of the curriculum as a means to improve outcomes and mandated transition services within the standards-based movement, and the different instructional models which keep vocational and academic tracks apart, research addressing the perceptions of high school students with LD of a more appropriate curriculum may inform policy and/or instructional agenda, as the national preoccupation on academic excellence has a direct impact on this population.

Conceptual Framework

Gottfredson's theory (1981) of circumscription and compromise posits that individuals age 14 and older (e.g., high school students) seek occupations that best match their interests and abilities as vocational needs influence their occupational aspirations. Circumscription is a judgment that some

occupations are inappropriate due to gender differentiation and others are unacceptable because of their low status or high difficulty. Within these perceived boundaries, a final choice is made, which is a compromise between what is desired and what is available.

Rationale and Purpose of the Study

Lewis (2000) contends that society addresses the dilemma of maximizing educational opportunity for all students while tracking students who are academically able in the more desirable occupations through the establishment of vocational education for less academically able students. He proposes that society's response is consistent with the self-perceptions of students who choose vocational education. He argues that low performing students do not choose vocational education in order to prepare for a specific occupation; rather, they have internalized self-perceptions that remove college degree as an option based on poor educational experiences. The purpose of this study was to identify the factors that predict whether high school students with LD who did not pass the state minimum competency examination would indicate a preference for a vocational curriculum instead of a regular curriculum or academic preparation leading to college. In other words, this study intended to measure students' perceptions of which type of curriculum would have been more suitable for them.

Method

Participants

High school students with LD who participated in this study have received a general education curriculum. The sample was attending summer school at the time of data collection; only students who failed the 10th grade Florida Comprehensive Assessment Test (FCAT) were attending these summer sessions, which was a requirement of the local school district. Participants were from three high schools in Southeastern Florida. All students who met eligibility for participation in the study were previously identified with LD according to state and local guidelines (see Appendix A). Overall, 71% of the students with LD enrolled in the summer program in these three high schools participated in this study. Of the 104 participants, the majority were males (n = 79, 76.0%) which is representative of the population of students in special education. Over 96% of the students were ethnic minorities, either Hispanic (n = 51, 49.5%) or Black (n = 48, 46.6%). The sample was fairly balanced across grade level with freshmen (n = 18, 17.5%), sophomores (n = 39, 37.9%), juniors (n = 23, 22.3%) or seniors (n = 23, 22.3%). Almost all the students were first placed in special education in elementary or middle school (n = 79, 90.8% of those who reported when they were first placed). Reflecting the population of special education students, the majority reported a GPA of 2.0 or less (n = 63, 63.6%) while almost no students reported a GPA above 3.0 (n = 2, 2.0%). Nearly half the students have repeated a grade at least once (n = 40, 39.6%). Very few of the fathers (n = 11, 12.2%) or mothers (n = 14, 14.4%) did not graduate from high school, while more than one third graduated from college. The majority of the students planned to attend college (n = 63, 61.2%).

Instrument Development

The Vocational Academic Choice Survey (VACS) was designed to measure high school students with LD's perceptions of the suitability of the academic curriculum compared to the suitability of the vocational curriculum. The purpose of the survey instrument was to provide a means to measure to what degree is the academic curriculum viewed as more suitable than the vocational curriculum.

Collaborating special education teachers identified high school students with LD in inclusive classrooms to participate at various stages of the development of the survey. Permission forms for participation were distributed to students assisting in the development of the survey and taking part in the present study. An initial pool of 47 items was generated based on interviews with high school students with LD (n = 14) and the published literature on vocational education (Benz & Halpern , 1987; Castellano, Stringfield, Stone, 2003; Conderman & Katsiyannis, 2002; Foreman-Peck & Thompson, 1998; Halpern & Bernz, 1987; Lewis, 2000; Lindstrom & Benz, 2002; Prentice, 2001; Rojewski & Kim, 2003). The interviews consisted of open-ended questions that explored personal feelings, attitudes, and challenges in coping with the general curriculum. Information derived from these interviews helped the first author in the formulation, elimination, and editing of some of the items for the pilot study. A pilot study with an additional group of high school students with LD (n = 19) was conducted to identify needed revisions and to explore the reliability of the scale. In addition, a focus group including high school students with LD (n =11) evaluated the clarity of the questions, the response format, and the overall appearance of the survey layout. Students indicated that, overall, the questions and procedures to complete the survey instrument were clear and unambiguous. To complete this process, students in the focus group were prompted to discuss the number of words in the

statements which helped the rewording of one item in the questionnaire (*initial*: I am frustrated because I know that academic classes are not going to help me get a job in the future; *revised*: Regular classes don't help me prepare for my future.). After implementing the revisions suggested by the students, a panel of six high school teachers (two each, vocational, regular, and special education) rated individual items of the VACS for content validity using a 2-point scale (agree or disagree). The panel reported that no revisions were necessary. To establish the reliability of the scale, the final questionnaire was field-tested with 62 high school students with LD. Cronbach's alpha for the original 30 questions was 0.66. To maximize the scale's internal reliability, ten items were eliminated (e.g., People I know who are good at reading, writing, and math make good money.) one at a time and reliability recalculated. The Cronbach's alpha for the remaining 20 items was 0.71, indicating sufficient reliability. The final version was administered to the full sample of high school LD students. Students with LD who contributed to the development of the VACS did not participate in the final study.

The final version of the VACS (see Appendix B), a self-report survey instrument, consists of 20 items evaluated on a six point scale from agree very much to disagree very much, assessing curriculum suitability. In addition to the suitability of curriculum scale, the instrument contains a short independent section asking for background information (e.g., gender, ethnic group, age, grade repetition).

The items in the curriculum suitability scale are *forced choice* in the sense that no neutral choice is available. The items were worded so that a high score (agreement) means that the student viewed the academic curriculum as less suitable for himself/herself. The items involve such statements as *My interest are different from the focus of the class I am currently taking* and *My goal is to work right after high school and not to attend college*. The internal consistency of the instrument for the total sample (n = 104) was satisfactory with a Cronbach's coefficient alpha of 0.71.

Procedures

Prior to the study, parental support was requested in a letter describing the study and a consent form giving permission for their children to participate. The consent form stated that participants can withdraw from the study at any time, and parents were assured that their children's responses will be held in confidence. Consistent with the letter sent to the parents, teachers explained to the students the purpose of the study, assured students that their participation was voluntary, emphasized that the instrument was designed to maintain students' anonymity, asked them to sign an assent form if they wanted to participate, and gave instructions for completion of the instrument. Only students with parental approval were administered the VACS, which took approximately 20 minutes to complete.

Results

For each student, the median response to the 20 items in the instrument was calculated. The table below shows the distribution of median responses. Almost 70% of the students were in the middle of the distribution (disagree a little or agree a little)

Table 1

Median response to items inquiring about suitability of academic curriculum

Median Response	Frequency	Percent
Disagree very much	7	6.7
Disagree pretty much	13	12.5
Disagree a little	25	24.0
Agree a little better	45	43.3
Agree pretty much	11	10.6
Agree very much	3	2.9
Total	104	100.0

Three independent-samples t-tests were conducted to compare students' scores on the VACS**.** The first t-test was conducted to evaluate the hypothesis that students view the academic curriculum as less suitable if they have repeated one or more grades as opposed to students who never repeated a grade. The test was significant, $t(99) = 3.73$, $p < .001$. Students who repeated a grade ($M = 69.18$, $SD = 11.42$) viewed the academic curriculum as less suitable than students who never repeated a grade ($M = 60.07$, $SD = 12.34$).

The second independent-samples t-test was conducted to evaluate the hypothesis that students view the academic curriculum as less suitable if they plan to work or go to vocational school as opposed to

students who intend to go to college. The test was significant, $t(101) = 7.14$, $p < .001$. Students who did not intend to go to college ($M = 72.88$, $SD = 11.51$) viewed the academic curriculum as less suitable than students who planned to attend college ($M = 57.95$, $SD = 9.50$).

The third independent-samples *t*-test was conducted to evaluate the hypothesis that students view the academic curriculum as less suitable if their GPA is below the level needed for graduation (2.0) as opposed to students with GPA high enough for graduation. The test was significant, $t(97) = 5.19$, $p < .001$. Students who do not have GPAs high enough for graduation ($M = 68.24$, $SD = 12.61$) viewed the academic curriculum as less suitable than students who have GPAs high enough for graduation ($M = 55.86$, $SD = 8.89$).

In addition, a multiple regression analysis was conducted to explain the students' curriculum suitability, as reflected in the VACS total scores. The independent variables in this regression were: repeating a grade, attitudes toward reading, writing and math (based on their response to *Just the thought of courses not requiring extensive reading, writing and math makes school enjoyable.*), and post high school plans. The three predictors together accounted for approximately 40% ($R^2 = .403$) of the variance in curriculum suitability, $F(3, 94) = 21.178$, $p < .001$**.** Next, a stepwise regression analysis was conducted with these three predictors at the predetermined level of significance of .05. Results showed that the best predictors of curriculum suitability were post high school plans and attitudes toward reading, writing and math. Both variables together accounted for approximately 38% of the variance ($R^2 = .383$) in curriculum suitability, $F(2, 95) = 29.507$, $p < .001$**.** However, it should be noted that post high school plans accounted for about 35% of the variance by itself.

Discussion

The results of this study revealed that not all students with LD perceive uniformly the suitability of having either an academic or a vocational curriculum. As expected**,** independent *t*-test indicated that among this population of students, the academic curriculum was preferred significantly more by students who had never repeated a grade compared with students who had repeated a grade, by students who planned to go to college compared with students who did not intend to go to college, and by students with relatively higher GPAs compared with those with relatively lower GPAs. Although at face value the sample seemed to represent a homogeneous population of high school students with LD, the statistically significant differences found among these subgroups support the contentions about the heterogeneous nature of the learning disabilities category (Aaron, Joshi, & Williams, 1999**;** Weller, Strawser, & Buchanan, 1985; Ysseldyke, Algozzine, & Thurlow, 1992). Among this group of students with LD, even though all the students failed the state exams, those who were a little more successful (did not repeat a grade, planned to go to college, had relatively higher scores), preferred a more academic type of program than those who were less successful. It should be noted that most of the participants in this study were minorities. Results should be interpreted with caution given the ethnic composition of this sample.

A pleasantly surprising finding in this study was the relatively high proportion (59.7%) of students with LD who planned to go to college. In addition, in a multiple regression analyses, two variables showed to be the strongest predictors of the suitability curriculum scores: post high school plans (i.e., going to college vs. vocational/work), and attitudes toward academic subjects. More specifically, having plans to go to college after high school as well as enjoying reading, writing and math, were positively correlated with having an academic curriculum preference. The strongest predictor was post high school plans, which by itself explained 35% of the variance in curriculum preference. This indicates that high school students with LD who have a clear idea of their future plans are aware of their requirement for success, since the academic curriculum is the best preparation for students who are planning to go to college. These results support the idea of consulting students about their perceptions and considering their perspectives in efforts to improve curriculum and program delivery (Cowell, 2002; Mitra, 2003). Moreover, we should not underestimate the opinions and ability of high school students with disabilities to discern the effectiveness of different curricular approaches.

Overall, this study supports Gottfredson's theory (1981) of circumscription and compromise, which posits that individuals age 14 and older seek occupations that best match their interests and abilities, but that final choices are made within perceived boundaries. The multiple regression results indicated that students who did not plan to go to college preferred the vocational curriculum; however, we should not assume that this result reflects a true preference. Lewis (2000) explains that low performing students do not choose vocational education to prepare for a specific occupation, but because they have

internalized self-perceptions that remove college degree as an option for them. This internalization could affect negatively these students, given the vertical differentiation (Taylor, 2006) between academic and vocational curricula emphasized through high-stakes testing. Students with LD are influenced by the school reform or standards movement and they may perceive a vocational curriculum tract as diminishing (Lewis, 2004). One of the consequences of pursuing a vocational tract, including career and technical education, is the association of this tract with low performing and/or special education students. Furthermore, traditional vocational courses may no longer meet the workplace skills required in today's job market (mechanics vs. computer technology), limiting opportunities for a successful transition to work.

This study reinforces the current trend to continue to impart the academic curriculum to a number of students with disabilities, particularly those with LD. However, this trend can succeed only if special education teachers acquire strong knowledge in the content areas, in addition to their traditional preparation and focus on strategies for teaching and managing students with disabilities. This will be hopefully achieved by the *highly qualified* mandate (NCLB, 2001 and IDEA, 2004) that requires that all teachers, including special education teachers, must be fully certified and licensed in the content courses.

Finally, the findings underscore the importance of not categorizing students with disabilities in predetermined tracks (e.g., vocational, academic) in middle school and the early high school years, locking them in a path that may be difficult to change and that may prevent them to flourish and achieve their real life plans. To that end, the Individual Transition Plans, and particularly their goals and benchmarks, should be flexible plans that can be continuously modified, representing truly a process oriented rather than an outcome oriented document. Combining academics and technical education in secondary schools can improve the probability of completing a diploma. For students with LD who do not plan to go to college, a curriculum which does not overemphasize academic skills by reducing vocational courses may decrease the dropout rates in this population (U.S. Department of Education, 2002) while increasing their earnings after high school graduation (Bishop & Mane, 2005). Since the high school years may provide the best opportunity to develop occupational skills, having such a comprehensive and complementary curriculum would support post high school readiness (college and/or work) by emphasizing how the vocational aspects of academic subjects add value to the core curriculum (Bishop & Mane, 2005; Young, 1998).

Conclusion

In an era of accountability, high schools have not organized themselves in ways that would enhance or predict successful transition to postsecondary education or labor market for students with disabilities. Institutional practices that recognize the value of vocational learning would provide coherence to programmatic goals while supporting student preference. In addition, future research should investigate whether universal design curriculum can bridge the gap between the general and vocational curriculum in a way that supports student preference and still meets the requirements of the standards-based education reform.

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Appendix A
Eligibility Criteria for Placement in the Learning Disabilities Program

(a) a disorder in one or more of the basic psychological processes including visual, auditory, or language processes,
(b) academic achievement significantly below the student's level of intellectual functioning--- discrepancy must be 1½ standard deviations or more for students 11 years of age and above,
(c) learning problems that are not due primarily to other disabling conditions, and
(d) the ineffectiveness of general educational alternatives in meeting the student's educational needs.

Appendix B
Vocational Academic Choice Survey

General Directions: Read each item and circle the number that best describes your agreement or disagreement with the statement. Record your first response and move on to the next item. To change an answer, place an X through the incorrect response and circle the desired response. There are no **right or wrong** answers: the best answers are those that honestly reflect your feelings.

	I disagree very much	I disagree pretty much	I disagree a little	I agree a little	I agree pretty much	I agree very much
1. My interests are in college preparation courses.	1	2	3	4	5	6
2. I feel more rewarded when the school program allows me to work with my hands.	1	2	3	4	5	6
3. I think classes that focus on reading, writing, and math skills are useful to my future plan.	1	2	3	4	5	6
4. My goal is to work right after high school and not attend college.	1	2	3	4	5	6
5. I know I can master the skills taught in vocational classes.	1	2	3	4	5	6
6. Regular classes don't help me prepare for my future.	1	2	3	4	5	6
7. Because of the FCAT, I would choose the academic program instead of the vocational program.	1	2	3	4	5	6
8. Since I might not graduate on time, a vocational program is my best choice.	1	2	3	4	5	6
9. My parents prefer that I take classes that train me for college.	1	2	3	4	5	6
10. Vocational class is an environment where I can learn.	1	2	3	4	5	6
11. Most of what I have learned in regular classes will not be useful to me in the future.	1	2	3	4	5	6
12. Schoolwork is interesting when I can connect it to going to college.	1	2	3	4	5	6
13. Without vocational skills, I will not be able to get a good paying job.	1	2	3	4	5	6
14. What I learn in my regular classes is very important for my future.	1	2	3	4	5	6
15. I am concerned about my future, because I have been failing my current classes.	1	2	3	4	5	6
16. I do not have the skills to pass the state exam.	1	2	3	4	5	6
17. I tend to give up with the regular subjects because I have not been able to learn them well.	1	2	3	4	5	6
18. I can learn the skills for a job and also take college preparation classes in high school.	1	2	3	4	5	6
19. I can learn the skills for a job and also take college preparation classes in high school.	1	2	3	4	5	6
20. Learning in vocational class is fun.	1	2	3	4	5	6