Article

Hammill Institute on Disabilities

Journal of Emotional and Behavioral Disorders
1–11
© Hammill Institute on Disabilities 2014
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/1063426614557816
jebd.sagepub.com
SAGE

Capacity and Opportunity: Predicting Engagement for Middle School Students With Behavioral Disorders

Marsha Dempsey Herron, PhD[1] and Jim Martin, PhD[2]

Abstract

This study examined the capacity and opportunity scores of 36 middle school students with emotional and behavioral disorders (EBD) on the student version of the *American Institutes for Research (AIR) Self-Determination Scale* across three school engagement factors: grade point averages (GPA), school absences, and frequency of school disciplinary encounters. Poor grades, school absences, and frequency of disciplinary actions pose academic problems for middle school students with EBD. Three multiple regression models determined the predictive relationships between self-determination Capacity and Opportunity subscale scores and GPA, Absences, and Discipline. Higher capacity and opportunity scores predicted greater student GPA, fewer student absences, and fewer disciplinary encounters for students at school. Results of this study demonstrate the need for increased opportunities at school and home for students with EBD to learn and practice self-determination skills.

Keywords

middle school, self-determination, emotional and behavioral disorders, *AIR Self-Determination Scale*, school engagement factors, grade point average, absences, discipline

Inappropriate behavioral trajectories of students with emotional and behavioral disorders (EBD) occur as early as elementary school and may become progressively worse as students age (Montague, Enders, & Castro, 2005). For many of these students, classroom environments can become increasingly more complicated and problematic as they progress through school. This may be due to a number of compounding factors, such as problem behaviors, negative teacher interactions, and external threats to school engagement. For example, behavior problems such as disruptive outbursts or physical aggression can prevent instruction, resulting in minimal amounts of time spent on the delivery of academic content, which may have a significant impact on school performance. Furthermore, Skiba and Peterson (2000) found that by the time students with EBD reach middle school, they become less interested in school and begin to seek others who exhibit similar attitudes about disengagement.

Self-Determination, A Critical Component of Instruction

"Theory, research, and practice have suggested that to keep youth in school, educators must encourage students' perceived competence and self-determination" (Eisenman, 2007, p. 3). Wolman, Campeau, DuBois, Mithaug, and Stolarski (1994) defined self-determined people as those who can (a) express their own needs, interests, and abilities; (b) set appropriate goals and expectations; (c) plan and act in pursuit of those goals; (d) adjust their method of pursuit; and (e) most importantly, act independently. Thus, self-determination is about empowering people with disabilities, regardless of the severity, through the provision of skills instruction and opportunities to practice choice and decision making to obtain desired outcomes.

Research suggests that increased skills regarding self-determination concepts are particularly important for those within this population. For example, students would benefit from curricular attention on explicit self-determination components, such as goal setting, choice making, problem solving, and self-evaluation. However, many variables, such as substantial academic needs, high rates of absenteeism, and behavioral challenges of students with EBD oftentimes prohibit teachers from viewing self-determination

[1]Langston University, OK, USA
[2]University of Oklahoma, Norman, USA

Corresponding Author:
Marsha Dempsey Herron, Assistant Professor, Special Education, School of Education and Behavioral Sciences, Langston University, P.O. Box 1500, Sanford Hall, Rm 210W, Langston, OK 73050, USA.
Email: mdherron@langston.edu

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

instruction as a high priority for this group of students (Carter, Lane, Pierson, & Glaeser, 2006).

Furthermore, Carter and colleagues (2006) investigated the self-determination of adolescents with EBD in comparison with students with learning disabilities. They found that students with EBD had limited perceived capacity to engage in self-determined behavior, had less knowledge of self-determination in general, and were rated significantly lower on their capacity skills by their teachers. Furthermore, students with EBD identified having very few opportunities and supports at school or home to engage in self-determined behavior. Currently, there are no studies that explicitly examine middle school students with EBD and the impact of their perceptions of personal self-determination on academic variables.

Academic Barriers and School Performance

Wagner, Kutash, Duchnowski, and Epstein (2005) reported that students with EBD have consistently had the lowest grades of any disability category. They are also the most likely to have higher rates of absenteeism (Lane & Carter, 2006; Wagner et al., 2005) and are more likely to face multiple grade retentions (Bradley, Doolittle, & Bartolotta, 2008). As these students spend more than 80% of their school day in general education classes, they are consistently measured on their school performance using what Mattison (2004) referred to as the universal measures of school functioning (GPA, absenteeism, and disciplinary records) similarly to their general education peers. GPA, absenteeism, and discipline have emerged in the literature as some of the most critical factors to school engagement; therefore, we chose to concentrate on these variables as measures of performance.

GPA

Jessor, Den-Bos, Vanderryn, Costa, and Turbin (1995) found that low GPAs suggested a detachment from school, which may lead to school interruptions such as dropout or grade retention. Students with EBD are the most likely to experience grade retention and grade failure during their time in school (Bradley et al., 2008), thereby making them prime candidates for early school dropout.

Number of School Absences

Dropping out is most often the result of poor academic performance, grade retention, and absenteeism coupled with disengagement and apathy toward school (Carter et al., 2006; Reschly & Christenson, 2006). Students with EBD were found to have higher rates of absenteeism contributing to their school disengagement and to the inability of school staff to provide services (Pierson, Carter, Lane, & Glaeser, 2008).

Frequency of Disciplinary Encounters

Exclusionary practices, such as suspension and expulsion, tend to be the first response of school personnel to behaviors by students with a label of EBD (Kortering, Braziel, & Tompkins, 2002). Bradley et al. (2008) reported that students with EBD were subject to the same disciplinary policies as their peers without disabilities regardless of their disability status and protections under IDEA, including the right to a manifestation determination hearing before suspension or expulsion.

Purpose of This Study

Given what is currently known about students with EBD, the need to understand how their perceptions of self-determination affect their in-school performance is paramount to creating effective self-determination interventions. This study works to contribute to what is known about these students by examining how middle school students with EBDs' scores on the *AIR Self-determination Scale* were related to and predictive of students' GPA, school attendance, and school disciplinary encounters.

Method

Participants

Data for this study were collected from 10 schools in one rural, one suburban, and two urban school districts in Northeastern and Central Oklahoma.

Student participants. The participants in the study were 36 middle school students ranging in age from 11 to 15 years. The majority of the students in the sample ($n = 30$) attended schools located in two urban districts (83%), two attended school in a suburban district (6%), and four attended school in a rural district (11%). The sample consisted of 29 males (80.6%) and 7 females (19.4%) in Grades 6 (44%), 7 (25%), and 8 (31%). More than 90% of the participating students were eligible for free or reduced lunch. To participate in this study, each student had to be previously identified by his or her school as exhibiting behaviors and/or currently labeled as meeting the federal definition of Emotional Disturbance on their Individual Education Program (IEP). All student participants in the study were currently receiving special education services, either in self-contained or general education classrooms.

Teacher participants. There were 14 classroom teachers and 1 resource room teacher who provided information for their students. Teachers either taught directly or had very close working relationships with the student participants. Table 1 presents the characteristics of both student and teacher participants. Nine teachers held bachelor's degrees (64.0%), and

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

Table 1. Demographics of Participating Students and Teachers.

Participant characteristics	*n*	%
Students		
Gender		
Male	29	80.6
Female	7	19.4
Age		
M	13	
SD	1.17	
Grade		
6th	16	44.4
7th	9	25.0
8th	11	30.6
Race/ethnicity		
American Indian	3	8.3
Black/African American	7	19.4
Hispanic/Latino/Spanish	4	11.1
Mexican/Mexican American	2	5.6
White/Caucasian	13	36.1
Bi-racial	3	8.3
Tri-racial	3	8.3
Other	1	2.8
Free/reduced lunch		
Yes	31	86.1
No	3	8.3
Disability		
Emotional disturbance	36	100.0
Teachers		
Years teaching		
M	12.74	
SD	10.19	
Degree		
Bachelor's	9	64.0
Master's	5	36.0

5 held master's degrees (36%). Thirteen teachers in the study were from the urban districts (87%), 1 from the suburban district (6.5%), and 1 from the rural district (6.5%). Teaching experience for participants in the study ranged from 4 to 34 years with an average of 13 years of teaching. Teachers provided demographic information about themselves including their length of time teaching and highest degree. Their responses for the participating students included basic information, such as the length of time the student had been in their class, the total number of absences the student accumulated during the school year, the current GPA, eligibility for free and/or reduced lunch, and the total number of disciplinary encounters the student had during the school year.

School Performance Variables

To establish the context of each school performance variable, we identified patterns of behavior on three school engagement factors (GPA, absences, and disciplinary encounters) for middle school students with EBD related to these performance measures.

- Grade point average (GPA)—the average score of grades received from all courses during the most recent school year.
- School absences (Absences)—the number of days a student was absent from school during the 2010-2011 academic year.
- Disciplinary encounters (Discipline)—the number of times a student received disciplinary actions within the past academic year, such as lunch detention, after-school detention, office referral, or in-school or out-of-school suspension.

Power analysis. Prior to participant recruitment, we conducted an a priori power analysis to determine the minimum number of participants needed for this study. The results indicated the need to have at least 30 or more overall participants to have a power at .80 and a medium effect size, while using an alpha level of .05 for statistical significance (Lenth, 2009).

Procedures

IRB information. Before any research could take place, we obtained clearance from the Institutional Review Board to work with special populations. All participants in the study were provided the necessary informed consent or assent forms prior to participation.

Data Collection

Prior to beginning the study, we contacted school districts across the state of Oklahoma to obtain information about the availability of students meeting the selection criteria and to obtain permission for research from the school districts. End-of-Instruction testing schedules and end-of-school year events for each of the districts dictated how the data collection process would run at each school. Data were collected from the participating students and teachers using three methods (a) collection by school liaison, (b) collection by special education coordinator, and (c) direct collection from students by the research team. Some of the schools preferred to collect the data themselves to ensure the comfort and confidentiality of the students involved, while others preferred the research team to distribute research materials and collect the data directly from students. School years in the districts concluded at various times over a 2-week period in May and June; therefore, collection of the research materials was staggered. Due to the end-of-year schedule, we made arrangements in advance with each school to collect all final research materials 1 week prior to summer dismissal.

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

After distributing the data collection materials (i.e., instruments and demographic questionnaires), the research team made an equal number of visits to the school sites to ensure the integrity of the instrument administration. Due to the volatile nature of students with EBD, some of the students became unavailable to complete the instrument because of behavior and resulting disciplinary action, such as being suspended from school, which removed them from the eligible pool of participants. Of the possible 98 students with EBD available at the start of the study, recruitment procedures yielded 36 completed student research packets, and 15 completed teacher demographic forms from 10 participating schools.

Data Analysis

We conducted three multiple regression analyses to evaluate how measures of capacity and opportunity predicted student GPAs, school absences, and number of school disciplinary encounters (GPA, Absences, and Discipline; Tabachnick & Fidell, 2007). The three regression equations were

$$\text{GPA} = \text{A} + \text{B}_1(\text{Capacity}) + \text{B}_2(\text{Opportunity}), \quad (1)$$

$$\text{Attendance} = \text{A} + \text{B}_1(\text{Capacity}) + \text{B}_2(\text{Opportunity}), \quad (2)$$

$$\text{Discipline} = \text{A} + \text{B}_1(\text{Capacity}) + \text{B}_2(\text{Opportunity}), \quad (3)$$

where A equals the intercept of all independent values equaled to zero and B equals the regression coefficients assigned to the independent variables of capacity and opportunity.

To assess the linear relationship of the in-school variables and the subscales of capacity and opportunity, we used the Pearson product–moment correlation coefficient *r*.

Instrumentation

The *American Institutes for Research Self-Determination Scale–Student Version* (AIR-S) (Wolman et al., 1994) served as the independent variable. The AIR-S provides an assessment of students' levels of self-determination, identifies areas of strengths and those needing improvement, assists in identifying educational goals and objectives, and provides information for developing strategies to increase students' capacity and opportunities to acquire self-determination skills at school and at home. The scale was designed for use with all school-aged students (K-12) with and without disabilities. The AIR-S has three self-determination components: thinking (identifying and expressing needs, setting expectations and goals to meet needs), doing (making choices and plans to meet goals and expectations, taking actions), and adjusting (evaluation, altering plans to meet goals more effectively). Each of these components relates to the AIR-S constructs of capacity and opportunity.

There are 24 items on the AIR-S answered using a 5-point Likert-type scale (Never, Almost Never, Sometimes, Almost Always, Always). Each section has 6 items producing two subscale scores, one for capacity and the other for opportunity. The capacity subscale relates to questions pertaining to what the student does to promote their self-determination (Things I Do) and how they feel when they perform these skills (How I Feel). The opportunity subscale examines the perceptions of the student in relation to performance of self-determined behaviors at school and home (What Happens in School, What Happens at Home). The subscale scores are combined to form an overall score, which indicates the level of students' self-determination.

Instrument and subscale statistics. Cronbach's alpha reliability coefficients were calculated for the subscales of Capacity and Opportunity and for the entire *AIR-S Self-Determination Scale* (Wolman et al., 1994) as a measure of internal consistency. Alpha coefficients for the subscales of Capacity and Opportunity were .828 and .894, respectively. Each subscale consists of two sections that produce an overall subscale score. Alpha coefficients for the sections Things I Do and How I Feel, which make up the Capacity subscale, were .824 and .584, respectively. Coefficients for the What Happens at School and What Happens at Home sections, which make up the Opportunity subscale, were .817 and .897, respectively. The overall alpha reliability coefficient for the AIR-S was .923, which was consistent with the findings of Shogren et al. (2008).

Agreement

We calculated two measures of agreement for this study: agreement in scoring the student version of the *AIR Self-Determination Scale*, and data entry agreement.

Scoring agreement. The primary researcher scored each AIR-S by hand and then entered the domains and total scores into a spreadsheet. An independent rater familiar with the scale independently scored each AIR-S to check the accuracy of the original scores. This method of scoring permits the calculation of the percentage of scoring agreement to obtain the estimate of the reliability in scoring procedures. Both scorers independently checked all of the subscale scores for the capacity and opportunity domains as well as the overall self-determination score and found 100% agreement in scoring.

Data entry agreement. The same individual who checked the AIR-S scoring independently checked the accuracy of the data entered into the SPSS spreadsheet. The independent

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

Table 2. Pearson's Product–Moment Correlations Among Variables.

Variables	GPA	Absences	Discipline	Capacity	Opportunity	WHASScore	WHAHScore
GPA	—						
Absences	−.422*	—					
Discipline	−.175	.239	—				
Capacity	.364*	−.281	−.290	—			
Opportunity	.485**	−.404*	−.426*	.797**	—		
WHASScore	.512**	−.452*	−.300	.652**	.874*	—	
WHAHScore	.348	−2.63	−.452**	.756**	.898*	.571	—

Note. GPA = grade point average; WHASScore = What Happens at School Score; WHAHScore = What Happens at Home Score; r = .10 (small), r = .30 (medium), and r = .50 (large; Cohen, 1988).
*p < .05. **p < .01.

scorer checked each of the 36 cases and 45 variables entered. After comparing the original data for the measures entered into the spreadsheet, the independent rater found 100% agreement in the accuracy of all the data entered.

Results

Intercorrelations Between Variables

We used the Pearson product–moment correlation coefficient r to assess the linear relationship of the in-school variables and the subscales of capacity and opportunity. Results revealed eight statistically significant correlations ($p < .05$) between the variables of Capacity, Opportunity, GPA, Absences, and Discipline with moderate to large effect sizes from .364 to .512 (Cohen, 1988). The correlation matrix and effect size scale are shown in Table 2.

GPA. A negative correlation was present between Absences and GPA, $r(34) = -.422$, $p < .05$, meaning that as absences decrease for students, GPA would likely increase. However, GPA was also positively correlated with Capacity, $r(34) = .364$, $p < .05$, meaning that as scores on Capacity (the ability to learn and acquire self-determined behaviors) increases, student GPAs will also likely increase. There was also a positive relationship between GPA and Opportunity, $r(34) = .485$, $p < .01$, meaning that as overall opportunities to learn and practice self-determined behaviors at school and home increase student GPAs will also increase. The largest correlation occurred between GPA and What Happens at School Score (WHASScore), $r(34) = .512$, $p < .01$, meaning that as opportunities at school to acquire self-determined behaviors increase, student GPAs will also increase.

Absences. Absences were negatively correlated with Opportunity, $r(34) = -.404$, $p < .05$, meaning that as opportunities to learn and practice self-determined behaviors at school and home increase the number of student absences will decrease. There was also a negative relationship between What Happens at School Score (WHASScore) and Absences, $r(34) = -.452$, $p < .05$, meaning that when there are opportunities at school for students to acquire self-determined behaviors, their absences will decrease.

Discipline. There was a negative relationship present between Opportunity and Discipline, $r(34) = -.426$, $p < .05$, meaning that as opportunities to learn and practice self-determined behaviors at school and home increase, the number of disciplinary encounters will decrease. There was also a negative relationship between What Happens at Home Scores (WHAHScore) and Discipline, $r(34) = -.452$, $p < .01$, meaning that as opportunities to acquire self-determined behaviors at home increase, the number of disciplinary encounters in the school environment will decrease.

Missing Data

Prior to the analysis, we inspected data for any inaccuracies in entry, outliers, and missing values. We chose to drop two of the cases due to missing demographic information for length of time in class, absences, GPA, eligibility for free/reduced lunch, and discipline due to parental choice not to respond. Two additional cases, not dropped from analysis, did not contain entries for GPA, but all other data were available. There were three outliers in the absences variable. The range of absences was 0 to 54 days with the last 3 data points representing extreme cases of 35 to 54 missed school days. In the two districts where the absences occurred, the school year ranged from 173 to 180 days. For students exhibiting extreme or excessive absences, missing 25% or more of the school year, it would be difficult to ensure that they were exposed to the same conditions at school as the other participants and they were therefore removed from this variable set (Gall, Gall, & Borg, 2003).

Multiple Regression Analyses

The subscales of Capacity and Opportunity each had a maximum score of 60, and for this reason, unstandardized regression coefficients were used to report the raw score

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

Table 3. Predictors of GPA, Absences, and Discipline.

	GPA		Absences		Discipline	
Predictors	*B*	Sig.	*B*	Sig.	*B*	Sig.
(Constant)	0.536		15.645		21.441	
Capacity	−0.001	.969	0.046	.253	0.097	.728
Opportunity	0.049	.063	−0.241	.106	−0.432	.063

Note. GPA = grade point average; B = Unstandardized Regression Coefficient.
Sig. = significance level $p < .05$.

influences on GPA, Absences, and Discipline. Effect size for each multiple regression was calculated using Cohen's f^2 formula, $f^2 = R^2/(1 - P^2)$, yielding a scale of .02 (small), .15 (medium), and .35 (large). The relative influence of the individual predictors is represented in Table 3.

The first multiple regression analysis was conducted to evaluate how well measures of Capacity and Opportunity predicted student GPA. The linear combination of Capacity and Opportunity were related to student GPA, $F(2, 28) = 4.304$, $p = .023$. The sample multiple correlation coefficient was .485, indicating that approximately 24% of the variance of GPA for the sample could be accounted for by students' perceptions of capacity and opportunity. The corrected *R* statistic for the model indicated 18% of the variance within the population was accounted for by the set of predictors. The relative strength of this regression produced a moderate effect size ($f^2 = .307$) with an observed power of .753. The regression equation for predicting GPA from student scores on the subscales of Capacity and Opportunity from the AIR-S was GPA = .536 + −.001 (Capacity) + .049 (Opportunity).

The second multiple regression analysis was conducted to evaluate how well measures of Capacity and Opportunity predicted Absences. The linear combination of Capacity and Opportunity were related to student Absences, $F(2, 27) = 2.673$, $p = .044$. The sample multiple correlation coefficient was .407, indicating that approximately 17% of the variance of Absences for the sample could be accounted for by students' perceptions of capacity and opportunity. The corrected *R* statistic for the model indicated 10% of the variance within the population was accounted for by the set of predictors. The relative strength of this regression produced a medium effect size ($f^2 = .198$) with an observed power of .540. The regression equation for predicting Absences from student scores on the subscales of Capacity and Opportunity from the AIR-S was Absences = 15.645 + .046 (Capacity) + −.241 (Opportunity).

The linear combination of Capacity and Opportunity were related to student Discipline, $F(2, 30) = 3.408$, $p = .046$. The sample multiple correlation coefficient was .430, indicating that approximately 19% of the variance of Discipline occurring for the sample could be accounted for by students' perceptions of capacity and opportunity. The corrected *R* statistic for the model indicated 13% of the variance within the population was accounted for by the set of predictors. The relative strength of this regression produced a moderately large effect size ($f^2 = .227$) with an observed power of .650. The regression equation for predicting Discipline from student scores on the subscales of Capacity and Opportunity from the AIR-S was Discipline = 21.441 + .097 (Capacity) + −.432 (Opportunity).

Further Exploration of Regression Models

GPA, Absences, and Discipline were recoded into three groups, low, medium, and high, by dividing the standard deviations in half and adding and subtracting the halves from the overall mean to establish cut points. The overall school performance including GPA, absences, and number of school disciplinary encounters of the students in the current study were consistent with the findings of Mattison (2004) in that the mean GPA of 2.6 averaged in the middle "C" letter grade range, the mean rate of absences for the year was 10, and disciplinary encounters ranged from 0 to 35. Descriptive information for each group is provided in Table 4.

Capacity and opportunity by GPA level. After the recoding process was complete, a total of 5 students had GPAs of 1.85 or below, 12 students had GPA's of 1.86 to 2.94, and 14 students had GPAs of 2.95 or above. Student scores within the low group ranged from 25 to 56 ($M = 41$, $SD = 6.52$, $M = 38$, $SD = 11.2$) for Capacity and Opportunity. In the medium group, scores ranged from 25 to 56 ($M = 42.08$, $SD = 7.7$, $M = 40.3$, $SD = 9.6$) for Capacity and Opportunity, respectively. The high groups' scores ranged from 24 to 59 ($M = 46.3$, $SD = 7.9$, $M = 46$, $SD = 8.17$) for Capacity and Opportunity. The overall means between the three groups and Capacity ranged from 29 to 58 ($M = 43.8$, $SD = 7.71$). There was a larger variation in the scores between the three groups and Opportunity, ranging from 19 to 59 ($M = 42.4$, $SD = 9.5$).

Capacity and opportunity by absence level. After the recoding process was complete, 9 students had missed 4.65 days or less, 4 students had missed between 4.66 and 6.04 days, and 17 students had absences totaling 6.05 or more days. Student scores within the low absence group ranged from 37 to 59 ($M = 47.1$, $SD = 5.6$, $M = 48$, $SD = 5.7$) for Capacity and Opportunity, respectively. In the medium group, students' scores ranged from 41 to 52 ($M = 46$, $SD = 4.7$, $M = 50$, $SD = 2$) for Capacity and Opportunity, respectively. The high group scores ranged from 19 to 58 ($M = 43.3$, $SD = 9.1$, $M = 39.24$, $SD = 10.7$) for Capacity and Opportunity, respectively. The overall means between the three groups and Capacity ranged from 29 to 58 ($M = 45$, $SD = 7.7$). There

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

Table 4. Capacity and Opportunity by GPA, Absences, and Discipline.

	Low		Medium		High	
	CAP	OPP	CAP	OPP	CAP	OPP
Performance variables	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
GPA	41.0 (6.52)	38.0 (11.2)	42.1 (7.7)	40.3 (9.6)	46.3 (7.9)	46.0 (8.2)
Absences	47.1 (5.6)	48.0 (5.7)	46.0 (4.7)	50.0 (2.0)	43.3 (9.1)	39.2 (11)
Discipline	46.1 (7.2)	48.0 (6.7)	44.0 (7.7)	42.0 (8.5)	41.0 (9.0)	34.3 (11)

Note. GPA, Absences, and Discipline: Low GPA = <1.85, Medium GPA = 1.86–2.94, High GPA = >2.95; Low Absences = <4.65, Medium Absences = 4.66–6.04, High Absences = >6.05; Low Discipline = <3, Medium Discipline = 4–11.3, High Discipline = >11.4. GPA = grade point average; CAP = capacity; OPP = opportunity.

was a larger variation in the scores between the three groups and Opportunity, ranging from 19 to 59 (M = 43.2, SD = 9.7).

Capacity and opportunity by discipline level. After the recoding process was complete, 14 students had a total of 3 or less disciplinary encounters, 13 students had between 4 and 11.3 school disciplinary encounters, and 6 students had 11.4 or more school disciplinary encounters. Student scores within the low discipline group ranged from 32 to 59 (M = 46.1, SD = 7.2, M = 48, SD = 6.7) for Capacity and Opportunity, respectively. Scores for students in the medium group ranged from 25 to 58 (M = 44, SD = 7.7, M = 42, SD = 8.5) for Capacity and Opportunity, respectively. The high group scores ranged from 19 to 54 (M = 41, SD = 9, M = 34.3, SD = 11.2) for Capacity and Opportunity, respectively. The overall means between the three groups and Capacity ranged from 29 to 58 (M = 44.2, SD = 7.7). There was more variation in the scores between the three groups and Opportunity, ranging from 19 to 59 (M = 42.9, SD = 9.5).

Relationship Between Self-Determination at School and Home

Subsequently, we explored the Opportunity variable to determine whether there was a relationship between what happens at school and/or home and GPA, school absences, and number of school disciplinary encounters. The relative influence of the individual predictors is represented in Table 5.

What happens at school (WHASScore) and home scores (WHAHScore) and GPA. A multiple regression analysis was conducted to explore how the opportunities provided at school (WHASScore) or at home (WHAHScore) predicted student GPAs. The linear combination of opportunities at home and school was significantly related to GPA, $F(2, 28)$ = 5.121, p = .013. The sample multiple correlation coefficient was .517, indicating that approximately 27% of the variance of GPA for the students in the sample can be accounted for by the linear combination of what happens at school and home to provide opportunities to acquire self-determined behaviors. The corrected R statistic for the model indicated 22% of the variance within the population was accounted for by the set of predictors. The relative strength of this regression produced a large effect size (f^2 = .366) with an observed power of .830. The regression coefficient revealed that WHASScore and WHAHScore were positively correlated to student GPA, but only WHASScore was statistically significant (p = .025). Interpretation of the unstandardized regression coefficients revealed that for every increase in opportunities at school, student GPAs would increase by .083. WHASScore accounted for 15% of the unique proportion of variance in the model, while WHAHScore accounted for less than 1%.

Table 5. Predictors of Opportunities at School and Home.

	GPA		Absences		Discipline	
Predictors	*B*	Sig.	*B*	Sig.	*B*	Sig.
(Constant)	.598		15.767		23.873	
WHASScore	.083	.025	−.415	.041	−.104	.735
WHAHScore	.015	.659	−.014	.944	−.631	.043

Note. GPA = grade point average; B = Unstandardized regression coefficient; WHASScore = What Happens at School Score; WHAHScore = What Happens at Home Score.
Sig. = significance level p < .05.

What happens at school and home scores and absences. A second multiple regression analysis was conducted to explore how well the opportunities provided at school (WHASScore) or at home (WHAHScore) predicted students' school attendance. The linear combination of opportunities at home and school was significantly related to Absences, $F(2, 27)$ = 3.464, p = .046. The sample multiple correlation coefficient was .452, indicating that approximately 20.4% of the variance of Absences for the students in the sample can be accounted for by the linear combination of what happens at school and home to provide opportunities to acquire self-determined behaviors. The corrected

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

R statistic for the model indicated 15% of the variance within the population was accounted for by the set of predictors. The relative strength of this regression produced a large effect size ($f^2 = .256$) with an observed power of .654. The regression coefficient revealed that WHASScore and WHAHScore were negatively correlated to students' school attendance, but only WHASScore was statistically significant ($p = .041$). Interpretation of the unstandardized regression coefficients revealed that for every increase in opportunities at school, student Absences would likely decrease by −.415. WHASScore accounted for 14% of the unique proportion of variance in the model, while WHAHScore accounted for less than 1%.

What happens at school and home scores and discipline. A third multiple regression analysis was conducted to explore how well the opportunities provided at school (WHASScore) or at home (WHAHScore) predicted students' disciplinary encounters at school. The linear combination of opportunities at school and home was significantly related to Discipline, $F(2, 30) = 3.927$, $p = .031$. The sample multiple correlation coefficient was .456, indicating that approximately 21% of the variance of Discipline for the students in the sample can be accounted for by the linear combination of what happens at school and home to provide opportunities to acquire self-determined behaviors. The corrected *R* statistic for the model indicated 16% of the variance within the population was accounted for by the set of predictors. The relative strength of this regression produced a large effect size ($f^2 = .261$) with an observed power of .711. The regression coefficient revealed that WHASScore and WHAHScore were negatively correlated to students' disciplinary encounters at school, but only WHAHScore was statistically significant ($p = .043$). Interpretation of the unstandardized regression coefficients revealed that for every increase in opportunities at home, Discipline would likely decrease by −.631. WHAHScore accounted for 12% of the unique proportion of variance in the model, while WHASScore accounted for less than 1%.

Discussion

Self-determination is a well-researched construct that is critical to the development of students with disabilities throughout their educational career. In theory, it promotes the learning and acquisition of necessary skills that will lead to more positive in-school and post-school outcomes (Pierson et al., 2008). Recent studies demonstrate that general and special educators not only believe that self-determination is important, but that they are also including aspects such as problem solving, self-management, and goal setting in their classroom curricula (Carter, Lane, Pierson, & Stang, 2008; Cho, Wehmeyer, & Kingston, 2010; Stang, Carter, Lane, & Pierson, 2008). Many educators find incorporating these skills easy to do as some self-determination components are relative to standards-based skills adopted within most states (Wehmeyer, Field, Doren, Jones, & Mason, 2004). Infusing self-determination instruction into the general curriculum will not come without challenges, especially for students with EBD. Much of the self-determination ideology promotes learning new skills that will eventually manifest into generalized behaviors for students. This study emphasizes the necessity of not only providing self-determination instruction but also providing multiple opportunities for students to practice the skills taught.

In this study, higher levels of self-determination capacity and opportunities to learn and practice self-determined behaviors predicted positive in-school outcomes for middle school students with EBD. Increased opportunities at school and home to learn and practice self-determination skills predicted higher GPAs, fewer absences, and fewer disciplinary encounters. Specifically, higher levels of opportunity at school predicted higher GPAs and fewer absences. Higher levels of opportunity at home predicted fewer disciplinary encounters at school.

Higher scores for Capacity and Opportunity predict higher student GPAs, lower student absences, and lower disciplinary encounters for students at school. Capacity and Opportunity together were significantly related to GPA, Absences, and Discipline. When Capacity and Opportunity were examined separately, neither was strong enough by itself to make a statistically significant impact on GPA, Absences, or Discipline. As a result, this study represents the first attempt to examine how students' perceptions of self-determination, as evidenced by their scores on the AIR-S, influenced their performance on three school engagement: GPA, Absences, and Discipline. Opportunity assessed the extent students had to learn and practice self-determined behaviors at school and home. Opportunities to learn and practice self-determination skills had a noticeable impact on students achieving higher GPAs, having fewer absences, and experiencing fewer school disciplinary encounters.

Opportunities at School

Increased opportunities at school to learn and practice self-determined behaviors predicted higher GPAs and fewer absences. For students with EBD, acquiring and practicing self-determined behaviors such as goal setting, goal attainment, and self-advocacy skills are especially critical given the nature of the EBD disability. However, factors may impede the utilization of skills such as self-advocacy. Educators may perceive this behavior as talking back or aggression, which may lead to disciplinary encounters (Carter et al., 2006). Consequently, it is important for educators to teach self-determination skills to reduce students' inappropriate behaviors (Eisenman, 2007), and increase GPAs and attendance. Without knowledge of appropriate

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

ways to express self-determination, it is likely these students may continue to endure increases in their school disciplinary encounters.

Opportunities at Home

Increased opportunities to learn and practice self-determined behaviors at home predicted fewer disciplinary actions at school. This finding demonstrates how important home life can be to facilitate appropriate behavior at school and supports Grigal, Neubert, Moon, and Graham's (2003) conclusion that family members who teach and promote self-determination at home may be more likely to demand their children demonstrate appropriate behaviors at school. These findings regarding the impact of opportunity at school and home to learn and practice self-determination skills are particularly important for two reasons; this is the first examination of how opportunities at school and home correlate with GPA, absences, and frequency of school disciplinary events of students with EBD. These findings also demonstrate the importance of educators and parents teaching students with EBD self-determination skills.

Contribution to the Literature

This study makes four important contributions to the literature addressing transition and self-determination for middle school students with EBD. First, the extant transition and self-determination literature has few studies of students with EBD (Algozzine, Browder, Karvonen, Test, & Wood, 2001; Test, Fowler, Brewer, & Wood, 2005), and fewer studies set in middle schools (Benitez, Lattimore, & Wehmeyer, 2005). This work is unique in that it was done using only middle school students with EBD enrolled in sixth, seventh, and eighth grades. We sought to provide an initial profile of the self-determination skills of middle school students with EBD and their perceived opportunities at school and home to learn and practice these skills, and how their perceptions of those opportunities are related to and predictive of critical school engagement factors, including GPA, absences, and disciplinary encounters.

Second, previous studies used personal, engagement, or academic variables to predict scores on the student version of the *AIR Self-Determination Scale* (Lee et al., 2010). In contrast, we examined the correlational predictive qualities of the AIR-S on the performance of in-school success factors, including GPA, number of absences, and number of school disciplinary encounters. GPA, Absences, and Discipline were selected as variables because of their relationship to students with disabilities, especially those with EBD, dropping out of school. While we understand that student self-reported data are known to be inconsistent with reports from parents and teachers or are oftentimes highly inflated, we thought it was important to solely examine the perspectives of students who are directly affected by the variables in this study. This study represents an initial attempt to use self-determination assessments to identify middle school students with EBD who may benefit from self-determination interventions to increase their performance on student school engagement factors, such as GPAs, decreased absences, and decreased frequency of school disciplinary encounters. Consequently, educators may find themselves better equipped to provide students opportunities to learn specific and relevant self-determination skills, such as self-advocacy, decision making, and goal setting and attainment.

Third, this study found the reliability analysis of the AIR-S matched results found from previous research (Shogren et al., 2008). The AIR-S indeed measured the students' perceptions of their capacity and opportunity to learn and practice self-determined behaviors both at home and school. These findings can be particularly useful to teachers of students with disabilities, especially those with EBD, as it can provide them with valuable information on how students perceive their capacity and opportunities within their classrooms, and how those perceptions may affect their GPAs, absences, and school disciplinary encounters.

Finally, perceived opportunities to learn and practice self-determined behaviors at school and home individually affected and could predict students' performance on GPA, school absences, and school disciplinary encounters. There has not been another study that has examined the impact of how school and home environments contribute to these factors for middle school students with EBD, but have been done for students with learning disabilities and intellectual disabilities (Shogren, Palmer, Wehmeyer, Williams-Diehm, & Little, 2012), and for high school students with EBD with the confounding factor of foster care (Powers et al., 2012). Therefore, the findings from this study are particularly relevant to practitioners and parents, because they generally serve as the primary influence for the outcomes of middle school students with EBD.

Implications for Practice

Results suggest one major implication for instructional practices at school and home for middle school students with EBD. Students with EBD perceive themselves as having limited opportunities to develop and practice self-determination skills in supportive environments. Educators and parents play an important role in the success of middle school students with EBD when they provide increased opportunities to learn, practice, and apply self-determined behaviors. Thus, the results of this study indicate that students need more opportunities at school and home to learn and practice self-determination skills. We believe that by teaching appropriate self-determination skills teachers may begin to see a marked degree of difference in their relationships with students with EBD.

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

Suggestions for Future Research

Teaching appropriate skills to students with EBD requires a vast investment of teacher time and effort. The results of this study certainly suggest teachers must become more methodical in incorporating opportunities to engage in practices that will lead to students acquiring self-determined behaviors and more research needs to be undertaken to determine how to do this. A priori estimates of power recommended a sample size of at least 30, but based on our observed power, we suggest the use of larger sample sizes for future analysis. Sample size is often based on pragmatic considerations, and this is especially true in educational research. What we learned about this group of students can be useful to both educators and researchers alike. Although observed power was not what we expected, the intentions and importance of this study should not be negated, but used as a starting point for future research.

Conclusion

The present study only suggests causality between self-determination and the school engagement factors; however, future intervention studies are necessary to explore this relationship further. Findings from this study confirmed that higher student scores on the AIR-S subscales of Capacity and Opportunity predicted higher GPAs, fewer absences, and fewer disciplinary encounters. Students scoring within the higher groups for perceptions of capacity and opportunity consistently demonstrated improved performances when there was an interaction between their perceived self-determined capacity and opportunities to act in self-determined ways. Adolescents will become more self-determined when they can perceive themselves as worthy enough to engage in actions that will have an impact on their lives. Collaboration between researchers, policy makers, parents, and educators is imperative to help students with EBD remain in school and ultimately improve their quality of life (Powers et al., 2012).

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

Algozzine, B., Browder, D., Karvonen, M., Test, D., & Wood, W. (2001). Effects of interventions to promote self-determination for individuals with disabilities. *Review of Educational Research*, *71*, 219–277. doi:10.3102/00346543071002219

Benitez, D., Lattimore, J., & Wehmeyer, M. (2005). Promoting the involvement of students with emotional behavioral disorders in career and vocational planning and decision-making: The self-determined career development model. *Behavioral Disorders*, *30*, 431–447.

Bradley, R., Doolittle, J., & Bartolotta, R. (2008). Building on the data and adding to the discussion: The experiences and outcomes of students with emotional disturbance. *Journal of Behavior Education*, *17*, 4–23. doi:10.1007/s10864-007-9058-6

Carter, E., Lane, K., Pierson, M., & Glaeser, B. (2006). Self-determination skills and opportunities of transition-age youth with emotional disturbance and learning disabilities. *Exceptional Children*, *72*, 333–346.

Carter, E., Lane, K., Pierson, M., & Stang, K. (2008). Promoting self-determination for transition-age youth: Views of high school general and special educators. *Exceptional Children*, *75*, 55–70.

Cho, H. J., Wehmeyer, M., & Kingston, N. (2010). Elementary teachers' knowledge and use of interventions and barriers to promoting student self-determination. *Journal of Special Education*, *45*, 149–156. doi:10.1177/0022466910362588

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.

Eisenman, L. (2007). Self-determination interventions: Building a foundation for school completion. *Remedial and Special Education*, *28*, 2–8.

Gall, M., Gall, J., & Borg, W. (2003). *Educational research: An introduction* (7th ed.). New York, NY: Pearson Education.

Grigal, M., Neubert, D. A., Moon, M. S., & Graham, S. (2003). Self-determination for students with disabilities: Views of parents and teachers. *Exceptional Children*, *70*, 97–112.

Jessor, R., Den-Bos, J., Vanderryn, J., Costa, F., & Turbin, M. (1995). Protective factors in adolescent problem behaviors: Moderator effects and developmental change. *Developmental Psychology*, *31*, 923–933. doi:10.1037//0012-1649.31.6923

Kortering, L., Braziel, P., & Tompkins, J. (2002). The challenge of school completion among youths with behavioral disorders: Another side of the story. *Behavioral Disorders*, *27*, 142–154.

Lane, K., & Carter, E. (2006). Supporting transition-age youth with and at risk for emotional and behavioral disorders at the secondary level: A need for further inquiry. *Journal of Emotional and Behavioral Disorders*, *14*, 66–70. doi:10.1177/10634266060140020301

Lee, Y., Wehmeyer, M., Palmer, S., Williams-Diehm, K., Davies, D., & Stock, S. (2010). Examining individual and instruction-related predictors of the self-determination of students with disabilities: Multiple regression analysis. *Remedial and Special Education*, *3*, 1–12. doi:10.1177/0741932510392053

Lenth, R. V. (2009). Java applets for power and sample size [Computer software]. Retrieved from http://www.stat.uiowa.edu/~rlenth/Power

Mattison, R. (2004). Universal measures of school functioning in middle school special education students. *Behavioral Disorders*, *29*, 359–371.

Montague, M., Enders, C., & Castro, M. (2005). Academic and behavioral outcomes for students at risk for emotional and behavioral disorders. *Behavioral Disorders*, *31*, 84–94.

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016

Pierson, M., Carter, E., Lane, K., & Glaeser, B. (2008). Factors influencing the self-determination of transition-age youth with disabilities. *Career Development for Exceptional Individuals*, *31*, 115–125. doi:10.1177/0885728808317659

Powers, L. E., Geenen, S., Powers, J., Pommier-Satya, S., Turner, A., Dalton, D., . . . Swank, P. (2012). My life: Effects of a longitudinal, randomized study of self-determination enhancement on the transition outcomes of youth in foster care and special education. *Children and Youth Services Review*, *34*, 2179–2187.

Reschly, A., & Christenson, S. (2006). Prediction of dropout among students with mild disabilities: A case for the inclusion of student engagement variables. *Remedial and Special Education*, *27*, 276–292. doi:10.1177/07419325060270050301

Shogren, K., Palmer, S., Wehmeyer, M. L., Williams-Diehm, K., & Little, T. (2012). Effect of intervention with the self-determined learning model of instruction on access and goal attainment. *Remedial and Special Education*, *33*, 320–330. doi:10.1177/0741932511410072

Shogren, K., Wehmeyer, M., Palmer, S., Soukup, J., Little, T., Garner, N., & Lawrence, M. (2008). Understanding the construct of self-determination: Examining the relationship between the Arc's self-determination scale and the American Institutes for Research self-determination scale. *Assessment for Effective Intervention*, *33*, 94–107.

Skiba, R. J., & Peterson, R. L. (2000). School discipline at a crossroads: From zero tolerance to early response. *Exceptional Children*, *66*, 347–355.

Stang, K., Carter, E., Lane, K., & Pierson, M. (2008). Perspectives of general and special educators on fostering self-determination in elementary and middle schools. *Journal of Special Education*, *43*, 94–106. doi:10.1177/0022466907313452

Tabachnick, B., & Fidell, L. (2007). *Using multivariate statistics* (5th ed.). San Francisco, CA: Pearson Education.

Test, D., Fowler, C., Brewer, D., & Wood, W. (2005). A content and methodological review of self-advocacy intervention studies. *Exceptional Children*, *72*, 101–125.

Wagner, M., Kutash, K., Duchnowski, A., & Epstein, M. (2005). The Special Education Elementary Longitudinal Study and the National Longitudinal Transition Study: Study designs and implications for children and youth with emotional disturbance. *Journal of Emotional and Behavioral Disorders*, *13*, 25–41. doi:10.1177/1063050130010301

Wehmeyer, M., Field, S., Doren, B., Jones, B., & Mason, C. (2004). Self-determination and student involvement in standards-based reform. *Exceptional Children*, *70*, 413–425.

Wolman, J., Campeau, P., DuBois, P., Mithaug, D., & Stolarski, V. (1994). *Air self-determination scale and user guide*. Palo Alto, CA: American Institutes for Research.

Downloaded from ebx.sagepub.com at UNIV OF OKLAHOMA on January 20, 2016