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Ohio's At-Risk Student Population: A Decade of Rising Risk

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Introduction

Educators face increasing demands to raise student achievement, to improve classroom instruction, and to demonstrate accountability in an environment of high stakes testing. However, meeting these demands is challenging in the face of numerous risk factors that jeopardize the academic success of elementary and secondary students. To that end, the identification of risk factors is an important first step in addressing these demands. This study took a longitudinal approach to the analysis, comparing the incidence of at-risk students in Ohio between the 2000-2001 and 2010-2011 school years¹ utilizing a research-based typology of risk factors to ensure consistency over time. The article begins with a brief literature review on the definition and identification of student risk factors. In the second section, research methods and data sources are described while the third presents results of the statistical analysis. The article closes with a summary of findings and conclusions.

Defining and Identifying Student Risk Factors

A review of the literature reveals multiple and often interconnected definitions of student risk factors. In general, however, student risk factors are often associated with individual, family, community, and school characteristics. In 2000, Janosz, Blanc, Boulerice, and Trembla defined at-risk students as those who exhibited academic, behavioral, or attitudinal problems that led to school dropout.² The authors suggested that "...risk factors for school dropout can be found in all spheres of children's social development and include personal, interpersonal, and contextual factors (e.g., poverty, community, school characteristics)."³ In 2001, Barr and Parrett argued that student risk factors included living in poverty, membership in a minority race or ethnic group, first language acquisition other than English, single-parent family composition, low level of parental education, and rural geographic status.⁴ More generally, Suh, Suh, and Houston defined risk as "...aspects of a student's background and environment that may lead to a higher risk of her or his educational failure," stating that "...for educators and counselors concerned with the well-being of society, school,

and family, and, particularly, the individual student, identifying the predictors of high school failure is a critical task."⁵

The No Child Left Behind Act of 2001 has drawn considerable attention to students at risk of school failure and dropout in America's public schools.⁶ Included under the definition of at-risk students in this law are students from low socio-economic backgrounds, ethnic minorities, students with disabilities, and students whose second language is English.⁷

Prince, Pepper, and Brocato⁸ and Prodente, Sander, and Weist⁹ identified homelessness, adolescent pregnancy, and mental health or behavioral problems as significant risk factors affecting academic achievement. According to Pruett et al., students with these challenges on average scored lower than their peers on standardized tests and were more likely to drop out of school.¹⁰ However, the study of homelessness, adolescent pregnancy, and mental health are complicated by difficulty in obtaining access to and consent from these populations.

In 2002, Stringfield and Land defined at-risk students as those "...who, through no fault of their own, are at risk of low academic achievement and dropping out before completing high school."¹¹ In one of the volume's chapters, Land and Legters operationalized this definition by identifying seven risk factors ascertained from a comprehensive review of research.¹² These represented the most frequently cited individual or family-level risk factors: disability; poverty; limited English proficiency;¹³ race/ethnicity; urbanicity;¹⁴ single parent status; and low parental educational attainment. These represented the most frequently cited individual or family-level risk factors. Of the seven factors, Land and Legters found poverty to be the most consistent predictor of academic failure, with the concentration of poverty at the school level exacerbating the problem.^{15,16} Land and Legters also identified another dimension of student risk--the "compound nature" of risk whereby some students experience multiple risk factors.¹⁷ Because Stringfield and Land and Land and Legters provide a clear definition of student risk and a comprehensive research-based typology, these were used in this study.

Research Methods

This section presents the population, data sources, variables, and analytic procedures used to answer the following research questions:

- To what extent has the incidence of at-risk students in Ohio changed over the last decade?
- What is the current incidence of at-risk students in Ohio?

This study analyzed 604 Ohio public school districts. The study did not include the four extremely small districts of Kelly's Island, North Bass Island, Middle Bass Island, and Put-in-Bay Island. The College Corner school district was also excluded because it is a joint school district with Indiana. The district served as the unit of analysis.¹⁸ Data for the 2000-2001 and 2010-2011 school years from the Ohio Department of Education were utilized. Six variables were used in the study: (1) Total student enrollment; (2) number of students with disabilities; (3) number of students living in poverty; (4) number of students identified as English Language Learners (ELL);¹⁹ (5) number of ethnic/racial minority students; and (6) number of students in urban school districts.

Students with disabilities were defined as those having an Individual Education Plan (IEP) while students living in poverty were defined as those who qualified for free or reduced-price school meals. Urban school districts are defined by the Ohio Department of Education in two manners: (1) "...urban (i.e. high population density) districts that encompass small or medium size towns and cities;" and (2) "Major Urban" school districts that include "all of the six largest core cities and other urban districts that encompass major cities."²⁰ Data for parental education attainment and single parent status by school district were not available and so could not be included in the study. Using the data described in this section, descriptive statistics and the incidence of risk factors were calculated and compared for 2001 and 2011. Then, Pearson Product Moment correlations were calculated to determine the presence and extent of the compound nature of risk in both years. Finally, the incidence of risk factors was calculated as the percentage of students identified with a particular risk factor divided by total student enrollment.

Results of Analysis

In 2001, Ohio educated 1,727,611 public elementary and secondary students in 604 school districts. (See Table 1.) School district size ranged from 313 to 72,277 students, with a mean district enrollment of 2,860 and a median of 1,781. In 2011, total student enrollment decreased 5.87% to 1,626,068 students. Minimum and maximum district size fell to 175 and 49,616 students respectively, while the mean and median decreased to 2,692 and 1,738. Overall, total student enrollment, the size of the mean and median school district, and size of the smallest and largest school districts decreased over this time period. The remainder of this section presents the results for each risk factor, the compound nature of risk, and the incidence of risk factors.

Table 1 | Total Student Enrollment by District

Descriptive Statistics	Enrollment by Year	
	2001	2011
Minimum	313	175
Maximum	72,277	49,616
Range	71,964	49,441
Mean	2,860	2,692
Median	1,781	1,738
Standard Deviation	5,001	3,816
Sum	1,727,611	1,626,068

N = 604

Disability

In 2001, Ohio educated 213,664 students with disabilities. (See Table 2.) Enrollment by school district ranged from 31 to 10,937 with a mean enrollment of 354 and a median of 203. Over the ensuing decade, enrollment of students with disabilities rose to 239,954, an increase of 26,290 or 12.3%. While the minimum enrollment increased slightly to 35, the maximum enrollment by district fell to 9,878. The mean and median increased to 397 and 143 students respectively.

Poverty

Ohio enrolled 435,675 low income students in 2000. (See Table 3.) By school district, enrollment ranged from zero to 68,715, with a mean of 721 students and a median of 231. Over the next ten years, the number of students in poverty skyrocketed to 698,365, an increase of 262,690 or 60.3%, while the mean and median increased to 1,158 and 623 students respectively. The large difference between the mean and median may reflect the presence of a cluster of high poverty school districts in the state.

English Language Learners

In 2001, Ohio enrolled 13,252 ELL students. (See Table 4.) Enrollment by school district size ranged zero to 3,045, with a mean enrollment of 22 and a median of zero. In 2011, the enrollment of ELL students more than doubled to 32,613, an increase of 19,362. While the minimum remained the same, the maximum enrollment by district grew to 4,821. At the same time, the mean increased to 54 and median remained at zero.

Racial/Ethnic Minority

Ohio schools enrolled 344,635 racial/ethnic minority students in 2001. (See Table 5.) District enrollment ranged from zero to 58,668, with a mean enrollment of 571 and a median of 49. In 2011, the number of ethnic/racial minority students attending Ohio schools increased to 383,741, an increase of 39,106, or 11.3%. While the minimum increased slightly, the maximum enrollment by district fell by 21,788. The mean and median increased to 635 and 100 students respectively. The large difference between mean and median enrollments points to an uneven distribution of ethnic/minority students across Ohio school districts with relatively high concentrations in a small number of school districts.

Urbanicity

In both years studied, 118 school districts were classified as urban by the Ohio Department of Education. (See Table 6.) In 2001, urban school districts educated 625,798 students. Enrollment by school district size ranged 424 to 72,277 with a mean enrollment of 5,349 and a median of 2,725. In 2011, the number of students in urban school districts decreased significantly to 504,434, a decrease of 121,364 or 19.4%. The minimum increased to 437 while the maximum enrollment decreased to 49,616. The mean and median decreased by approximately 1,000 and 100 students, respectively.

Table 2 | Students with Disabilities: Enrollment by Year

Descriptive Statistics	Enrollment by Year	
	2001	2011
Minimum	31	35
Maximum	10,937	9,878
Range	10,906	9,843
Mean	354	397
Median	203	243
Standard Deviation	707	690
Sum	213,664	239,954

N = 604

Table 3 | Students in Poverty: Enrollment by District

Descriptive Statistics	Enrollment by Year	
	2001	2011
Minimum	0	0
Maximum	68,715	43,197
Range	68,715	43,197
Mean	721	1,158
Median	231	623
Standard Deviation	3,501	2,920
Sum	435,675	698,365

N = 604

Table 4 | Limited English Proficient Students: Enrollment by District

Descriptive Statistics	Enrollment by Year	
	2001	2011
Minimum	0	0
Maximum	3,045	4,821
Range	3,045	4,821
Mean	22	54
Median	0	0
Standard Deviation	137	268
Sum	13,252	32,613

N = 604

Compound Nature of Risk

Tables 7 and 8 present Pearson Product Moment correlation matrices of risk factor variables for 2001 and 2011. Correlation coefficients in Table 7 show the existence of a moderate, statistically significant positive correlation ($p < .001$) in 2001 between poverty and disability (0.319), with a smaller, but statistically significant, positive relationships between poverty and ethnicity/race (0.280), and ethnicity/race and English language learners (0.163). In 2011, the compound nature of risk was also evident. The statistically significant, positive correlation between poverty and disability was more pronounced (0.594) as was the relationship between poverty and ethnicity/race (0.375). Of particular concern was the statistically significant, positive relationship between race/ethnicity and English language learners which more than doubled over this time period to 0.350.

Incidence of Risk Factors

In 2001, urbanicity represented the largest risk factor in that it affected 36.2%, more than one-third, of Ohio students. (See Table 9.) Poverty was second at 25.2%. The incidence of ethnic/racial minority students, and those with disabilities, ranked third and fourth at 19.9% and 12.4%, respectively, while the incidence of students identified as English learners ranked fifth, or last, at .77%. By 2011, the pattern of incidence had changed; now the incidence of student poverty ranked first at 43.0%, eclipsing the now slightly lower incidence of urbanicity (31.0%). Although the incidence of the remaining three risk factors increased, their ranking did not. The incidence of ethnic/racial minority students increased to 23.6% while that of ELL students almost tripled to 2.1%. The incidence of students with disabilities increased 2.4%, from 12.4% to 14.8%.

Summary and Conclusion

Although Ohio school districts have experienced nearly a 6% reduction in student population over the last decade, the incidence of at-risk students increased in all categories with the exception of urbanicity. Nonetheless, the incidence

Table 5 | Racial Minority Students: Enrollment by District

Descriptive Statistics	Enrollment by Year	
	2001	2011
Minimum	0	2
Maximum	58,668	36,880
Range	58,668	36,878
Mean	571	635
Median	49	100
Standard Deviation	3,414	2,580
Sum	344,635	383,741

N = 604

Table 6 | Urban Student Enrollment

Descriptive Statistics	Enrollment by Year	
	2001	2011
Minimum	424	437
Maximum	72,277	49,616
Range	25,933	18,851
Mean	5,349	4,311
Median	2,725	2,657
Standard Deviation	10,175	7,014
Sum	625,798	504,434

N = 604

Table 7 | Pearson Product Moment Correlation Matrix of Risk Factors for 2000

	DISABILITYPC	POVERTYPC	LEPPC
POVERTYPC	0.319*		
LEPPC	-0.050	0.021	
RACEPC	-0.131	0.280*	0.163*

*Statistically significant at the .001 level.

Note: DISABILITYPC = percentage of students with disabilities; POVERTYPC = percentage of low income students; LEPPC = percentage of students identified as limited English proficient or English language learners; RACEPC = percentage of student identified as ethnic/racial minorities.

Table 8 | Pearson Product Moment Correlation Matrix of Risk Factors for 2011

	DISABILITYPC	POVERTYPC	LEPPC
POVERTYPC	0.594*		
LEPPC	-0.031	0.098	
RACEPC	-0.165	0.375*	0.350*


*Statistically significant at the .001 level.

Note: DISABILITYPC = percentage of students with disabilities; POVERTYPC = percentage of low income students; LEPPC = percentage of students identified as limited English proficient or English language learners; RACEPC = percentage of student identified as ethnic/racial minorities.

Table 9 | Incidence of Student Risk Factors

Student Risk Factors	Incidence by Year (%)		Percent Change (%)
	2001	2011	
Disability	12.4	14.8	2.4
Poverty	25.2	43.0	17.8
LEP	0.77	2.1	1.3
Racial Minority	19.9	23.6	3.7
Urbanicity	36.2	31.0	-5.2

of urbanicity in Ohio was 31% in 2011, similar to the national average.²¹ The incidence of student poverty as a risk factor in Ohio in 2011 (42.9%) was also similar to the 50 state average of 45.4%.²² In contrast, the incidence of English language learners was substantially lower – 2.1% in Ohio vs. the 50 state average of 9.6%.²³ At the same time, the incidence of Ohio students with disabilities in 2011 (14.7%) exceeded the 50 state average of 13.0%.²⁴ The incidence of ethnic/ racial minority students in Ohio (23.6%) was also substantially lower than the 50 state average of 46.5%.²⁵

Patterns of the compound nature of student risk in Ohio bore some similarities to the 50 state analysis of Vesely, Crampton, Obiakor, and Sapp.²⁶ Similar moderate, statistically significant correlations were found between the incidence of poverty and ethnicity/race, and between ethnicity/race and English language learners. However, although there was a moderate, statistically significant relationship between the incidence of poverty and disability in Ohio, none was found in the 50 state analysis. With these research results now available, future research can begin to analyze the extent to which Ohio focuses its resources on students at risk of academic failure in order to ensure equality of educational opportunity, a key component in addressing achievement gaps. 

Endnotes

¹Hereafter, the 2000-2001 school year will be referred to as 2001, and the 2010-2011 school year will be referred to as 2011.

²Michel Janosz, Marc Le Blanc, Bernard Boulerice, and Richard E. Tremblay, "Predicating Different Types of School Dropouts: A Typological Approach with Two Longitudinal Samples," *Journal of Educational Psychology* 92, no. 1 (March 2000): 171.

³Ibid.

⁴Robert D. Barr and William H. Parrett, *Hope Fulfilled for At-Risk and Violent Youth: K-12 Programs that Work*, 2nd ed. (Boston: Allyn and Bacon, 2001), 25.

⁵Suhyun Suh, Jingyo Suh, and Irene Houston, "Predictors of Categorical At-Risk High School Dropouts," *Journal of Counseling and Development* 85, no. 2 (Spring 2007): 196.

⁶No Child Left Behind Act of 2001, Public Law 107-110.

⁷Ibid.

⁸Debra L. Prince, Kaye Pepper, and Kay Brocato, "The Importance of Making the Well-Being of Children in Poverty a Priority," *Early Childhood Education* 34, no. 1 (August 2006): 21.

⁹Christine A. Prodent, Mark A. Sander, and Mark D. Weist, "Furthering Support for Expanded School Mental Health Programs," *Children's Services: Social Policy, Research, and Practice* 5, no. 3 (2002): 173.

¹⁰Marsha Kline Pruett, Larry Davidson, Thomas J. McMahon, Nadia L. Ward, and Ezra E.H. Griffith, "Comprehensive Services for At-Risk Urban Youth: Applying Lessons from the Community Mental Health Movement," *Children's Services: Social Policy, Research, and Practice* 3, no. 2 (2000): 66.

¹¹Sam Stringfield and Deborah Land, eds. *Educating At-Risk Students*, 101st yearbook of the National Society for the Study of Education (Chicago, IL: University of Chicago Press, 2002), vii.

¹²Deborah Land and Nettie Legters, "The Extent and Consequences of Risk in U.S. Education," in *Educating At-Risk Children*, eds. Sam Stringfield and Deborah Land, 1-28.

¹³Also referred to as English language learners (ELL).

¹⁴Land and Legters, "The Extent and Consequences of Risk in U.S. Education." Although Land and Legters considered the risk factor of urbanicity is multifaceted, they isolated it as an independent risk factor because students attending urban schools were at greater risk of poor academic outcomes than students attending suburban and rural schools even after taking into account factors such as race/ethnicity and poverty.

¹⁵Ibid., 13.

¹⁶Interestingly, some researchers have asserted that the impact of poverty on student performance may be, at least in part, a function of the multiple negative factors that are associated with poverty, rather than the risk factor alone. See, Gary W. Evans, "The Environment of Childhood Poverty," *American Psychologist* 59, no. 2 (February/March 2004): 77; and Marie E. Borrazzo, *The Impact of Teacher Conflict Styles on Student Discipline Outcomes: A Triangulation Study of the Symbolic Interaction of the Teacher as Agent within the School Organizational Structure* (Bloomington, IN: Author House, 2005), 6. For example, Borrazzo stated: "Poverty stricken families tend demonstrate a greater tendency to maltreat difficult children, thus children with learning disorders are bombarded with a double dose of negative interactions as they are maltreated at home and in school. Poverty stricken parents tend to use a higher rate of negative attributions when dealing with discipline interactions with their children."

¹⁷The literature identifies a positive relationship between the number of risk factors impacting a child and negative outcomes. See, Karen Appleyard, Byron Egeland, Manfred H.M. van Dulmen, and L. Alan Sroufe, "When More is Not Better: The Role of Cumulative Risk in Child Behavior Outcomes," *Journal of Child Psychology and Psychiatry* 46, no. 3 (March 2005): 235; Eirini Flouri, "Contextual Risk and Child Psychopathology," *Child Abuse and Neglect* 32, no. 10 (October 2008): 913; and Julie R. Morales and Nancy G. Guerra, "Effects of Multiple Context and Cumulative Stress on Urban Children's Adjustment in Elementary School," *Child Development* 77, no. 4 (July/August 2006): 908.

¹⁸The study did not include joint vocational or county districts.

¹⁹These students are also referred to as English language learners.

²⁰Ohio Department of Education, "Typology of Ohio School Districts" (Columbus, OH), <http://www.ode.state.oh.us/GD/Templates/Pages/ODE/ODEDetail.aspx?page=3&TopicRelationID=390&ContentID=12833&Content=89486>.

²¹In 2008, the latest national data available for urbanicity, the portion of total U.S. student population designated as urban was 29.4%. Source: U.S. Department of Education, National

Center for Education Statistics, Common Core of Data (CCD), *Public Elementary/Secondary School Universe Survey, 2007–08*. Percentages were calculated from Table A.1.a-3, “Enrollment of Public Elementary and Secondary Students, by Locale and State or Jurisdiction: School Year 2007–08,” <http://nces.ed.gov/surveys/ruraled/tables/a.1.a.-3.asp?refer=urban>.

²² This percentage was accessed using the U.S. Department of Education, National Center for Education Statistics “Table Generator” feature for the Common Core of Data, 2009-2010, <http://nces.ed.gov/ccd/elsi/tableGenerator.aspx>.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Randall S. Vesely, Faith E. Crampton, Festus E. Obiakor, and Marty Sapp, “The Role of States in Funding Education to Achieve Social Justice,” *Journal of Education Finance* 34, no. 1 (Summer 2008): 56-74.