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Abstract: Charter schools are schools funded by public money, but free of many of the rules and regulations typically governing public schools. It was thought that this freedom would allow schools to innovate and raise student achievement, but this has not generally been borne out by the evidence. Because of their funding model, charter schools often lack the start-up and facilities money of public schools. They frequently lack libraries, although multiple studies have shown school libraries and librarians to have an impact on student achievement. This study examines charter schools in North Carolina both with and without libraries and librarians and finds that their presence has a consistent positive, but not statistically significant, impact on student achievement.

Headings:

      School Libraries

      School Libraries/Charter Schools

      School Libraries/Evaluation

      School Libraries/North Carolina

THE IMPACT OF SCHOOL LIBRARIES ON STUDENT ACHIEVEMENT IN
NORTH CAROLINA CHARTER SCHOOLS

by
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Introduction

Although the State of North Carolina requires that all public schools with greater than 200 students have a library and a certified school media specialist, two groups are exempt from this rule: private schools and charter schools. While private schools, as a consequence of tuition and fees, are generally well funded enough to have libraries, if not a full-time, trained librarian, charter schools are an entirely different matter. Many charter schools lack libraries.

The concept of charter schools – schools with novel educational approaches and/or target audiences funded with public money – was born in the educational reform movements of the 1970s. The first recognized charter schools were in Minnesota, which passed its charter school law in 1991. Other states followed suit, including North Carolina in 1996.

While the language of North Carolina General Statute 115C-238.29 sets forth rules for the number of charter schools (100 total in the state) and the application procedure to create a charter, there are few other regulations. This is deliberate – the compliance load on the school is eased to allow for greater freedom in the administration of the school. One regulation of importance for this paper from which they are freed is the requirement for a library and certified school media specialist.

In the absence of a school library, teachers adjust in a variety of ways – increased emphasis on textbooks or other packaged curricula, trips to the local public library, and

classroom collections are some of the most common. But do these measures really compensate for the lack of a school library and trained librarian? The educational benefits of these have been documented in many studies over the past 50 years.

Studies on the academic results of more than a decade of charter school performance have shown that overall, charter school students perform similarly to comparable students in public schools. Although charters form for many reasons, sometimes unrelated to raising student achievement, regulatory and curricular freedom for these schools was generally expected to foster innovation in teaching and learning which would lead to higher achievement.

It is the intention of this research project to examine student achievement in charter schools with libraries and librarians and without to determine what effect, if any, the presence of a school library has on student achievement in the specific educational context of charter schools. Could the failure of charter schools to live up to their potential be due, in part, to their lack of libraries and librarians?

Literature Review

> *I don't get it. Why do I need to do this survey? Isn't it obvious to everyone that we have to have our school library to do all our school work. It's impossible to do it without it, that's for sure.*
> - Student comment from the Ohio Research Study (Todd 2003, 2)

Libraries in Schools

Although the link between libraries and education has long been understood, for many years, most schools in the United States did not have their own central libraries. In 1953-4, only 36% of public schools had a central library, although 59% of pupils nationally attended a school with a central library; small (mostly rural) schools were

more likely not to have the resources to support a library. By the 1999-2000 school year, fully 92% of public schools and 97% of pupils had a central library (National Center for Education Statistics, 2005).

North Carolina has had a stronger tradition of school libraries than most states, having already achieved 80% of schools and 87% of pupils in 1953-4, increasing to 93% and 98%, respectively, in 1999-2000. Elementary schools have been particularly left out – in 1953-4, only 24% of elementary schools had central libraries, as compared with 95% of secondary schools. Interestingly, the percent of secondary schools with libraries has dropped in recent years, to 87% in 1999-2000, possibly as a result of various school reforms, such as charter schools. A survey of private schools in the 1999-2000 school year found that only 63% of schools and 82% of students had a central library, compared to 92% of public schools. And while 75% of public schools had a state certified media specialist, only 20% of private schools did (National Center for Education Statistics, 2005).

Even at a time when libraries in schools were a rarity, librarians and teachers have been keenly interested in them. The first cooperative venture dates to the American Library Association's (ALA) Committee on Cooperation with the National Education Association (NEA), convened in 1896, only 20 years after the founding of ALA. Proceeding separately from a roundtable of normal and high school librarians in 1913, the School Libraries Section of ALA was established in 1914-5 (Pond, 1976).

Almost immediately, the new organizations began advocating for school libraries, along with the Library Department at the NEA and other national organizations, issuing guidelines for school libraries and school library yearbooks, and compiling information

available on the state of school libraries nationally (Pond, 1976). One publication, *The Significance of the School Library, an Aid for Speakers and Writers*, is essentially a public relations handbook, containing arguments for the presence of libraries in schools, as well as numerous quotes ready for use from principals, superintendents, state commissioners of education, government committees and organizations; Frank Porter Graham, then president of the University of North Carolina, is the author of one of the quotes (McCrea, Batchelder, & Rossell, 1937).

School Libraries and Student Achievement

Over the past half-century, there have been more than 75 studies attempting to establish a link between school libraries and student achievement (Lance, 2002, 3). Many studied the link between certain school library factors – their size, budget, staffing levels, scheduling, and librarian instructional role in the school – and student academic achievement. However, few of these studies controlled for student, school, and community factors which could affect both school resources and student test scores (Lance 2000).

In the early 1990's, a new series of studies began, led largely by Keith Curry Lance of the Library Research Service at the State Library of Colorado. In 1993, he and his collaborators released the first of two studies of school libraries in Colorado that examined the impact of school libraries and other environmental factors on student achievement. In 2000, when the norm-referenced Iowa Tests of Basic Skills was replaced by a standards-based state test, he conducted a second Colorado study, expanding the data set by considering technology and specific types of collaboration (Lance, 2000).

The second Colorado study found that student reading test scores were increased

by (1) library staffing, both total hours and library media specialist hours; (2) resources, such as print volumes, periodical subscriptions, and electronic reference titles; and (3) collaboration with teachers, including planning lessons, identifying materials, teaching information literacy, providing training to teachers and managing the computer network. The increases in test scores ranged from 10 to 18%, and could not be explained away by school factors, such as overall spending, teacher/student ratio, teacher experience or salaries; nor by community factors, including educational attainment of adults, poverty levels, race, and ethnicity.

Since the first Colorado study, similar studies in 15 other states have been undertaken, seven in collaboration with Lance. Findings have been similarly positive across the board, although not all have examined identical data sets across states (Scholastic Library Publishing, 2007).

The preponderance of evidence is beginning to affect policy. In the summer of 2007, the Strengthening Kids' Interest in Learning and Libraries (SKILLs) Act was introduced in Congress as an addition to the reauthorization of No Child Left Behind. The bill would mandate at least one state certified school library media specialist in every school receiving federal funds (H.R. 2864). At the state level, Iowa recently re-added a teacher-librarian requirement for each district to state regulations, after not having one for 11 years (Pinkowski, 2006).

School Libraries and Student Achievement in North Carolina

One of the states in which the link between school libraries and student achievement has been examined is North Carolina. In 2003, Robert Burgin, an independent library consultant, and Pauletta Brown Bracy of North Carolina Central

University conducted a study modeled on the Colorado studies. They used the same questionnaire to capture the same measures of library program strength for correlation with school test scores. They found significant positive correlation between reading test scores and a number of library program factors, including number of hours open and number of hours staffed per week, newer books, more money spent on both print and electronic resources, and subscriptions to online periodicals and CD-ROMs. Unfortunately, their study did not control for student, school, and community factors affecting student achievement and so is less conclusive that many of the other state studies.

Charter Schools

Charter schools are independent schools funded by public money, but free from many of the rules and regulations governing traditional public schools. Each has a charter granted by an entity (the local or state educational authority, typically), in which the premise of the school and its contractual responsibilities are spelled out.

Charters are located in the larger narrative of school reform as a response to the increasingly tightly controlled world of traditional public schools. Charter schools gain autonomy in budget, curriculum, hiring, scheduling, and many other aspects of running a school that are traditionally arranged by the district or even the state. They are also schools of choice, meaning that they can attract students through innovation and increase their budget by the allotment attached to each student (U.S. Department of Education, 2007a).

However much charters gain in autonomy, they often lose some of the benefits attached to being part of a school system. Although charter laws vary from state to state,

in most places charters do not receive capital funding or start-up funding. While a new traditional public school can count on having a building, fully equipped classrooms and a stocked library, a charter school must supply all of this out of its annual budget based on the number of students (U.S. Department of Education, 2007b).

Charter Schools and Student Achievement

Part of the implicit promise of charter schools has always been their potential to raise student achievement. Numerous studies have been undertaken to evaluate the performance of charter schools, from small, qualitative field studies to large, quantitative surveys, beginning almost as soon as the first schools were opened. However, charter school achievement did not become a national issue until 2004, when, following a negative report on charter school performance on the 2003 nationwide National Assessment of Educational Progress (NAEP) by the American Federation of Teachers (Nelson, Rosenberg, & Van Meter, 2004), the Department of Education released its own commissioned report under pressure from the *New York Times* (Dillon & Schemo, 2004). The report, undertaken by SRI International, confirmed the results – charter schools were failing to perform by statistically significant numbers, even when correcting for their higher minority population (Dillon & Schemo, 2004).

Since that brief foray onto the front page, many more studies have been conducted. A recent survey from the National Alliance for Public Charter Schools (an advocacy organization) by Hassel, Terrell, Kain, and Ziebarth (2007) identified and compared 70 studies to lay out the state of current research. They found very mixed and sometimes contradictory results and concluded with a call for a more systematic attack on the question.

Charter Schools and Student Achievement in North Carolina

Despite the inconclusiveness of studies of student achievement in charter schools on the national front, in North Carolina, the studies have been largely negative. Bifulco and Ladd (2005, 2006a, 2006b) have published reports on the negative effect that North Carolina charter schools have had on student achievement. The researchers have done most of their work with longitudinal panel data, and have found that students would have gained more in public schools (2005, 2006a) and that at least some of the effect may be due to self-segregation (2006b).

Noblit and Corbett (2002) found much the same when they evaluated charter school performance from 1998 – 2001 for the North Carolina Department of Public Instruction. Notably, charter schools struggled with closing the achievement gap, and although students had higher scores than average on entering a charter school, they fell behind their public school peers.

Libraries in Charter Schools

Despite the spate of library and student achievement studies done at the very time when charter schools were in their infancy – early to mid 1990s – there has been relatively little attention given to the issue of libraries in charter schools from either the librarian or the charter school proponent and founder perspective (Wales, 2002).

The few surveys and studies that have been completed were intended to establish the presence of libraries and certified school media specialists in charter schools, with virtually no examination of the effects on student achievement. A 1998 survey by Olson & Meyer in *School Library Journal* surveyed 24 schools in six states. The schools had to be at least three years old (a fairly rigorous condition at the time), have more than 200

students, and be a "start-up" school, one which had inherited no old school facilities.

Nearly half (11) of the schools had no library whatsoever, while the other 13 had some

sort of library. Only four had full-time library staff members, and only two of those were

certified. A survey the same year by a graduate student at UNC-Chapel Hill found that of

seven area charter schools surveyed, most had book collections outside of the classroom,

but aside from one school which had a "library coordinator", none of the schools had a

dedicated staff member and none of the seven had a certified school media specialist

(Salpini, 1998).

Charter School Libraries and Student Achievement – the missing link?

In a brief article in the October 2004 *School Library Journal*, Debra Lau Whelan,

writing in the furor following the American Federation of Teachers report, made the

connection between school libraries, charter schools, and the lag in student achievement.

However, there has been little follow-up on this possible connection, despite the fact that

charter schools are still growing in number and enrollment.

Methodology

This study compares student achievement, as measured by the percent of students

in the third through eighth grades passing the end of grade reading and math tests, in

charter schools with libraries and librarians and those without. School and student factors

were included in the analysis, and controlled for when determining significant factors in

student achievement.

The study used North Carolina Department of Public Instruction (DPI) data on

school attributes and student test scores for the 2006-2007 school year. There were 93

charter schools operating in North Carolina that year. Since the first year of operations can be rocky, the one school that opened in 2006 was removed. Additionally, the measure of student academic achievement used was the combined reading and math score and the reading score alone from the mandatory third through eighth grade end of grade tests. To ensure that a singular anomalous class would not misrepresent a school's typical student achievement, only those schools with three grades within the third through eighth grade span were included. This removed thirteen schools, one of which was the newly opened school.

The pool was further reduced by incomplete information and highly specialized populations. Three schools did not have staffing information available in DPI's online Education Statistics Access System (ESAS), so that it could not be determined whether or not they employed school librarians. Three more had not reported any media statistics in the last four years, which precluded using their books per pupil figure or even determining whether they had a collection. Finally, since charter school autonomy allows founders to target very specific populations, three charter schools in the state are attached to residential homes or service centers for abused, abandoned, neglected and troubled children. These issues naturally tend to disrupt educational progress, in some cases severely, in a way that made using their students as part of aggregate data inappropriate, so these too were removed from the pool.

For each of the remaining 71 charter schools, data was gathered about the school, library (if any), and student test scores for socioeconomic groups. Six data elements were collected for each school: school type (regular, alternative, and extended day were the only types represented in charter schools); calendar (traditional or year round); Title I

status; per pupil expenditures; percentage of fully licensed teachers; and percentage of classes taught by "Highly Qualified" teachers as described by the No Child Left Behind Act (NCLB) – those with subject area licenses having also passed the Praxis II or with significant post-secondary training in their subject areas.

Two data items were gathered about the school library – the number of full time school library media specialists (certified only, no library assistants were included) and the number of books per pupil, which was also used to create a yes/no data point about the presence of a school library. If a school had not reported data for the 2006-2007 school year, the previous year's data was used. If no data had been reported, the data from 2004-2005 was used.

Finally, the average percentage of students scoring at grade level or above (>=Level III) across grades three through eight for each of nine demographic groups (American Indian, Asian/Pacific Islander, Black, Hispanic, Multiracial, White, Economically Disadvantaged, Limited English Proficiency, and Students with Disabilities) were collected for each school. The North Carolina DPI does not report data for these groups where the population is less than five, nor does it report scores above 95%. Most schools, therefore, had scores for only some of the groups, and the top score of 95% was used, even where it was possible to calculate from student counts that the actual rate was 100%. Both the reading test alone and the math and reading composite scores were gathered.

The source of the data for the employment figures was ESAS, for the rest of the library and school data, the North Carolina School Report Cards website, and for the percentage of students scoring at grade level or higher for the demographic groups, the

DPI's Reports of Disaggregated State, School System (LEA) and School Performance Data.

Data analysis involved simple means comparison between the two groups, as well as more advanced bivariate correlation and multivariate linear stepwise regression. To this end, dummy binary variables were created for the two data points with multiple values – school type and demographic group – to allow for regression on each of the values independently.

Results

A simple initial comparison of mean percentage of students achieving grade level or above in reading (ReadingPass) and the composite reading & math (ReadMathPass) between schools with libraries and those without (Figure 1) yields positive results, with both measures higher for schools with libraries and schools with librarians.

	No. Schools	Reading Pass	ReadMathPass
Without Libraries	30	79.3	52.2
With Libraries	41	86.1	60.3
Without Librarians	65	83.0	56.6
With Librarians	6	84.9	59.1

Figure 1 Percent of Students Passing End of Grade Reading and Reading & Math Composite Tests

However, these simple averages do not take into account the multitude of individual factors, from school schedule and teacher qualifications to student ethnicity and socioeconomic status.

A look at the entire data set through bivariate correlation (Figure 2) shows that although some factors within a school's control have a positive and statistically

significant impact on student achievement, neither of the two library factors do. The presence of a library and librarian is positively correlated with both reading and composite reading and math scores, but none of the correlations achieve statistical significance.

Interestingly, school per pupil expenditures are negatively and significantly correlated with both the presence of a school library and librarian, indicating that budget factors may not be as key a problem in establishing libraries in charter schools as might have been thought.

- Pearson Correlation - Sig. (2-tailed) - Number	Type - Regular	Type – Alternative Ed.	Type – Extended Day	Calendar Type	Title I?	Pct Fully Licensed	Pct Taught by Highly Qualified	School spending per pupil	School Librarian?	School Library?	ReadMathPass	ReadingPass	American Indian	Asian/Pacific Islander	Black	Hispanic	Multiracial	White	Economically Disadvantaged	Limited English Proficiency	Student w/Disabilities
Type - Regular	1																				
	325																				
Type – Alternative Education	-.749**	1																			
	.000																				
	325	325																			
Type – Extended Day	-.646**	-.022	1																		
	.000	.696																			
	325	325	325																		
Calendar Type	.092	-.069	-.059	1																	
	.099	.218	.288																		
	325	325	325	325																	
Title I?	-.171**	.128*	.111*	-.172**	1																
	.002	.021	.046	.002																	
	325	325	325	325	325																
Pct Fully Licensed	.209**	.050	-.373**	-.044	-.118*	1															
	.000	.364	.000	.434	.033																
	325	325	325	325	325	325															
Pct Taught by Highly Qualified	.310**	-.010	-.456**	.030	-.112*	.609**	1														
	.000	.853	.000	.593	.044	.000															
	325	325	325	325	325	325	325														
School spending per pupil	-.245**	.025	.340**	-.050	.008	-.048	-.205**	1													
	.000	.647	.000	.371	.890	.393	.000														
	325	325	325	325	325	325	325	325													

- Pearson Correlation - Sig. (2-tailed) - Number	Type - Regular	Type – Alternative Ed.	Type – Extended Day	Calendar Type	Title I?	Pct Fully Licensed	Pct Taught by Highly Qualified	School spending per pupil	School Librarian?	School Library?	ReadMathPass	ReadingPass	American Indian	Asian/Pacific Islander	Black	Hispanic	Multiracial	White	Economically Disadvantaged	Limited English Proficiency	Student w/Disabilities
School Librarian?	.064	-.048	-.041	-.130*	.083	-.076	-.019	-.259**	1												
	.251	.390	.458	.019	.136	.172	.734	.000													
	325	325	325	325	325	325	325	325	325												
School Library?	.016	.127*	-.171**	-.053	.064	.091	.255**	-.111*	.241**	1											
	.768	.022	.002	.339	.248	.102	.000	.046	.000												
	325	325	325	325	325	325	325	325	325	325											
ReadMathPass	.133*	-.159**	-.017	.060	-.300**	.258**	.219**	.000	.041	.023	1										
	.017	.004	.753	.284	.000	.000	.000	.995	.458	.685											
	325	325	325	325	325	325	325	325	325	325	325										
ReadingPass	.036	-.082	.039	-.010	-.213**	.198**	.155**	-.069	.049	.077	.772**	1									
	.517	.143	.481	.857	.000	.000	.005	.219	.381	.165	.000										
	324	324	324	324	324	324	324	324	324	324	324	324									
American Indian	.031	-.024	-.020	-.006	.076	-.002	-.098	.019	-.045	-.055	-.014	.012	1								
	.572	.672	.715	.918	.170	.969	.077	.733	.422	.324	.798	.836									
	325	325	325	325	325	325	325	325	325	325	324	325									
Asian/Pacific Islander	.043	-.032	-.028	-.045	-.060	.066	.043	-.081	.109*	.035	.275**	.171**	-.030	1							
	.436	.560	.615	.420	.277	.238	.439	.144	.049	.532	.000	.002	.586								
	325	325	325	325	325	325	325	325	325	325	324	325	325								
Black	-.013	-.027	.050	.006	.023	-.041	-.051	.029	.024	-.044	-.168**	-.054	-.072	-.099	1						
	.820	.633	.371	.917	.683	.465	.356	.607	.665	.424	.002	.336	.195	.074							
	325	325	325	325	325	325	325	325	325	325	324	325	325	325							
Hispanic	.025	.009	-.048	.068	-.106	.045	.082	-.010	.003	.054	.117*	.092	-.052	-.071	-.169**	1					
	.656	.873	.392	.219	.056	.423	.139	.864	.952	.328	.035	.097	.354	.202	.002						
	325	325	325	325	325	325	325	325	325	325	324	325	325	325	325						

- Pearson Correlation - Sig. (2-tailed) - Number	Type - Regular	Type – Alternative Ed.	Type – Extended Day	Calendar Type	Title I?	Pct Fully Licensed	Pct Taught by Highly Qualified	School spending per pupil	School Librarian?	School Library?	ReadMathPass	ReadingPass	American Indian	Asian/Pacific Islander	Black	Hispanic	Multiracial	White	Economically Disadvantaged	Limited English Proficiency	Student w/Disabilities
Multiracial	.019	.014	-.045	.028	-.051	.056	.035	.027	-.062	.032	.122*	.104	-.049	-.067	-.160**	-.115*	1				
	.730	.799	.415	.618	.363	.310	.528	.626	.265	.567	.028	.062	.378	.225	.004	.039					
	325	325	325	325	325	325	325	325	325	325	325	324	325	325	325	325	325				
White	-.020	.030	-.004	-.046	-.085	.034	.011	-.015	.005	.027	.358**	.313**	-.069	-.095	-.226**	-.162**	-.154**	1			
	.721	.594	.940	.404	.127	.543	.843	.789	.924	.622	.000	.000	.214	.087	.000	.003	.005				
	325	325	325	325	325	325	325	325	325	325	325	324	325	325	325	325	325	325			
Econonomically Disadvantaged	-.032	.014	.031	-.001	.224**	-.068	-.047	.043	.013	-.010	-.103	-.010	-.049	-.067	-.160**	-.115*	-.109*	-.154**	1		
	.570	.799	.573	.991	.000	.222	.403	.441	.818	.851	.063	.860	.378	.225	.004	.039	.049	.005			
	325	325	325	325	325	325	325	325	325	325	325	324	325	325	325	325	325	325	325		
Limited English Proficiency	-.012	-.040	.063	.001	.013	-.062	.026	-.004	-.075	-.042	-.142*	-.051	-.037	-.051	-.121*	-.087	-.082	-.116*	-.082	1	
	.833	.477	.256	.990	.816	.269	.645	.944	.177	.447	.010	.356	.507	.361	.029	.119	.139	.036	.139		
	325	325	325	325	325	325	325	325	325	325	325	324	325	325	325	325	325	325	325	325	
Student w/Disabilities	-.004	.017	-.013	-.011	.006	-.014	-.016	-.023	.012	-.013	-.325**	-.440**	-.076	-.104	-.247**	-.177**	-.168**	-.238**	-.168**	-.127*	1
	.939	.757	.810	.847	.914	.807	.779	.677	.830	.819	.000	.000	.174	.061	.000	.001	.002	.000	.002	.022	
	325	325	325	325	325	325	325	325	325	325	325	324	325	325	325	325	325	325	325	325	325

Figure 2 – Bivariate Correlation Coefficients for Factors Affecting Student Achievement

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

A look at multivariate linear regression for all factors with the reading pass rate as the dependent variable (Figure 3) shows the most significant factors, but libraries and librarians are not among them.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	81.016	1.130		71.724	.000
	Student w/Disabilities	-21.844	2.484	-.440	-8.794	.000
2	(Constant)	78.408	1.249		62.797	.000
	Student w/Disabilities	-19.236	2.488	-.388	-7.732	.000
	White Student	11.556	2.628	.220	4.397	.000
3	(Constant)	83.402	1.734		48.097	.000
	Student w/Disabilities	-19.365	2.430	-.390	-7.968	.000
	White Student	10.675	2.577	.204	4.143	.000
	Title I	-7.950	1.962	-.193	-4.052	.000
4	(Constant)	70.539	4.038		17.470	.000
	Student w/Disabilities	-19.290	2.389	-.389	-8.076	.000
	White Student	10.493	2.533	.200	4.143	.000
	Title I	-7.172	1.941	-.174	-3.695	.000
	Percent of teachers fully licensed	.168	.048	.165	3.514	.001
5	(Constant)	70.032	3.998		17.516	.000
	Student w/Disabilities	-18.398	2.384	-.371	-7.718	.000
	White Student	11.434	2.527	.218	4.524	.000
	Title I	-6.826	1.924	-.166	-3.547	.000
	Percent of teachers fully licensed	.160	.047	.157	3.374	.001
	Asian Student	13.618	4.819	.133	2.826	.005
6	(Constant)	66.145	4.203		15.736	.000
	Student w/Disabilities	-18.280	2.360	-.368	-7.745	.000
	White Student	11.369	2.502	.217	4.544	.000
	Title I	-7.212	1.910	-.175	-3.776	.000
	Percent of teachers fully licensed	.211	.050	.207	4.176	.000
	Asian Student	13.632	4.771	.133	2.857	.005
	School Format - Extended Day	20.257	7.378	.136	2.746	.006
7	(Constant)	71.530	4.780		14.964	.000
	Student w/Disabilities	-18.469	2.345	-.372	-7.874	.000
	White Student	11.161	2.487	.213	4.489	.000
	Title I	-7.354	1.898	-.179	-3.875	.000
	Percent teachers fully licensed	.222	.050	.218	4.403	.000
	Asian Student	12.644	4.757	.123	2.658	.008
	School Format - Extended Day	26.573	7.820	.178	3.398	.001
	School expenditures per pupil	-.001	.000	-.113	-2.313	.021

Figure 3 – Multiple Regression Analysis of Factors Affecting Student Achievement in Reading
Dependent Variable: Percentage of students at or above grade level for the 3-8 grade reading score.

Although neither of the library factors achieved statistically significant correlation with the measures of student achievement used, correlations were consistently present and positive.

Limitations of Study

The major limitation in the data was a result of the small pool of subjects, as compared to the number of schools in the state as a whole. Particularly because of charter schools' uniqueness, a larger sample group would be preferable.

A second issue was data availability – although pass rates, students counts, and general school information were readily available, the two data elements relating to libraries were dependent on school self-reporting and correct classification. Many schools chose not to report these elements.

The number of books per pupil (and the presence of library) is part of the Annual Media and Technology Report (AMTR). This report is required from all schools, who must fill out long questionnaires to satisfy the repot. There were many "no data" entries, forcing me to take the most recent valid entry, sometimes as much as two years old.

Librarians employed is a count of just those certified staff members who are full-time librarians, not allowing for partial responsibility or paraprofessionals serving as solo librarians. A fuller set of questions about library staffing is part of the AMTR, but this unfortunately means that there is a higher non-response rate.

A future study of charter school libraries in North Carolina may require field visits or phone interviews, rather than questionnaires.

Conclusion

When an individual, group or nonprofit starts a charter school, there may be many varying motives, but the primary underlying concern is for the education of the child. And while controversy often surrounds the use of standardized tests as a means of

determining academic achievement, it is the measure most commonly used in policy discussions and performance comparisons.

Implicit in the promise of autonomous schools with freedom of curricula and budget is a free-market idea of deregulation leading to improvements, particularly in performance. NCLB affirms this with the list of options open to schools that have failed to make Adequate Yearly Progress for six years, and will be subject to restructuring and alternative governance of one of five types. First in the list is reopening the school as a charter school.

However, charters in general have had mixed performance records, and charters in North Carolina generally negative ones. The primary question examined in this study was whether school libraries, shown repeatedly to have had positive impacts on student achievement in other studies, could be contributing to the success or failure of North Carolina charters.

Although the data did not yield a clear, significant positive impact on student achievement in North Carolina charter schools by libraries and librarians, a consistent positive correlation between the presence of a library and librarian and student academic achievement is revealed. This is especially true for the presence of a library, although the weaker data for librarians (only six schools) may have had an impact on this finding, as librarians' performance, particularly in collaboration with teachers, has been one of the highest contributors to scores in other studies (Lance, 2000, Smith, 2001).

Recommendations for Further Study

This topic deserves further attention, especially if North Carolina considers allowing more than the current allotment of 100 charters to operate in the state at any one

time. As mentioned in the Limitations section, there were problems with the data, both in terms of incomplete and missing data.

Gathering information directly from charter schools, rather than by questionnaire would yield a fuller and more accurate data set. Although it is easy to answer a question such as "Does the school have a full-time certified media specialist?" giving per pupil book counts, amount of time spent in the library and information interactions requires time and energy to accumulate, resources that may be beyond the capacity of pressed charter school staff.

More financial information might yield both details in the per pupil spending and academic achievement relationship, as well as offering possibilities for further study on how money allocated to charter schools is spent.

Finally, a longitudinal study, either going forward or looking at historical data, would be able to address the question of student achievement in charter schools that add or remove libraries and librarians. Does performance in the wake of these decisions change, or remain about the same?

Further study of the issue outside of North Carolina would also be useful. It may be difficult to compare states precisely – state achievement tests vary, and the National Assessment of Educational Progress (NAEP) uses only a sample of schools – but tests within states, particularly in states such as Arizona or California with large populations of charter schools would yield additional results either to confirm or reverse the results found here.

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