International Journal of Research Studies in Education
2012 January, Volume 1 Number 1, 115-126

Narrowing the achievement gap on a state-wide scale: Student success in North Carolina early colleges

Kaniuka, Theodore S. ✉
Fayetteville State University, North Carolina, USA (tkaniuka@uncfsu.edu)

Received: 25 September 2011
Revised: 6 October 2011
Accepted: 10 October 2011
Available Online: 12 October 2011
DOI: 10.5861/ijrse.2012.v1i1.35

ISSN: 2243-7703
Online ISSN: 2243-7711

OPEN ACCESS

Abstract

In 2002, the first early college high schools opened in North Carolina in an attempt to improve the performance of traditionally underserved students. Students of color, economic disadvantage, or having family histories of little or no post secondary attainment were targeted by this school reform initiative. Students attending these schools are exposed to rigorous high school curricula, experience a small school environment, and have access to post secondary education at the community college or university level. This study examined the academic performance of early college students compared to traditional high school students in North Carolina using non-parametric methods to determine whether the early college students have different passing rates on select North Carolina high school exams. The results indicate that for the selected end-of-course exams, many of the early college students have significantly greater rates of passing and in several instances that the gap between white and traditionally under represented students is narrower than traditional schools. These results suggest the North Carolina early college model may be a viable school reform initiative in assisting students to graduate high school and prepare students for life beyond high school.

Keywords: achievement gap; school reform; student achievement; high schools; evaluation; database; gender analysis

Narrowing the achievement gap on a state-wide scale: Student success in North Carolina early colleges

1. Introduction

1.1 Effectiveness of state and federal policy on student achievement

States and the federal government have spent billions of dollars in response to the Coleman report (Coleman et al., 1966) and more recently as a result the release of a Nation at Risk (1983). During that time there has been vigorous discussion and policy development intended to address the concerns raised in both reports; however, despite 45 years and several reform efforts the results of these efforts are mixed (Center on Educational Policy [CEP], 2009; Rampey, Dion, & Donahue, 2009; United States Department of Education, 2008). In an effort to use accountability as a vehicle to reform schools, No Child Left Behind (NCLB) emphasized the need to develop effective reforms to meet the required student achievement targets and raise high school graduation rates. Despite the relative success of NCLB in closing achievement gaps (Lee, 2006; NCES, 2009, 2011) and in improving the graduation rates of some minorities (Bernstein, Millsap, Schimmenti, & Page, 2008) disparities in these areas as defined by race and gender persist. In a comprehensive study on the black-white achievement gap Braun, Wang, Jenkins, and Weinbaum (2006) found that most states have experienced little success in improving the achievement gap. As discussed in Braun et al., North Carolina was part of a group of ten states studied and it was found that in North Carolina although black student achievement improved the overall gap did not. Therefore, while black students improved, their position relative to white students did not change. During the past 15 years, efforts in North Carolina designed to address the increased student performance demands have included the adoption of prescriptive reform initiatives, revised curriculum, improved teacher preparation and in-service, and a comprehensive accountability system (NCDPI, n.d.).

As a result of the mixed results of recent school reform initiatives the achievement gap remains an elusive and persistent challenge and the long term impact is manifested by the fact that nationally little or no progress has been made in helping traditionally under-represented students achieve college readiness (American Council on Education [ACE], 2007). In an effort to meet the challenges set forth in NCLB and respond to the concerns expressed by business and industry in 2002, the first early college high schools began to appear in the United States as an answer for improving the post-secondary opportunities for traditionally under-represented youth under the umbrella of the Early College High School Initiative (Hoffman & Webb, 2009; Jobs For the Future [JFF], 2009). Supported by a grant from the Bill and Melinda Gates Foundation (2010) and aggressive state policy (JFF, 2010) over 80 early college high schools have been created in North Carolina (North Carolina New Schools Project [NCNSP], 2010).

1.2 The North Carolina early college model

The Early College Model in North Carolina is designed to provide students who are traditionally under-represented in post-secondary settings access to educational opportunities beyond high school. The model targets students who are predominately-low income and minority and who generally will be the first member of their immediate family to attend a college or university. Minority students are less likely to attend college when compared to nonminority students according to ACE (2007). Compounding this is the nagging reality that in addition to minorities being less likely to attend college than other students, far fewer minority males access post-secondary education than minority females. Further complicating the issue, entrance to college is not only a function of academic performance, but one of accessibility in terms of affordability (Commission on the Future of Higher Education, 2006). So for low-income minority students attending college or completing it to receive a degree is problematic. The North Carolina model attempts to address these issues by providing post-secondary

educational opportunities for Early College High School (ECHS) students by giving tuition free access to community college and university level courses. These schools are located on the campuses of two-year and four-year colleges and universities to alleviate transportation barriers and provide ready access to higher education courses. Students can earn an Associate's Degree, college transfer credit, or certificates.

Table 1

North Carolina High School Innovation Design Principles

Concept	Definition
Ready for College	High School Innovation Projects (HSIP) are characterized by the pervasive, transparent, and consistent understanding that the school exists for the purpose of preparing all students for college and work. They maintain a common set of high standards for every student to overcome the harmful consequences of tracking and sorting.
Require Powerful Teaching and Learning	HSIP are characterized by the presence of commonly held standards for high quality instructional practice. Teachers in these schools design rigorous instruction that ensures the development of critical thinking, application, and problem solving skills often neglected in traditional settings.
Personalization	Staffs in High School Innovation Projects understand that knowing students well is an essential condition of helping them achieve academically. These high schools ensure adults leverage knowledge of students in order to improve student learning.
Redefine Professionalism	The responsibility to the shared vision of the HSIP is evident in the collaborative, creative, and leadership roles of all adult staff in the school. The staffs of these schools take responsibility for the success of every student, hold themselves accountable to their colleagues, and are reflective about their roles.
Purposeful Design	High School Innovation Projects are designed to create the conditions that ensure the other four design principles: ready for college, powerful teaching and learning, personalization, and redefined professionalism. The organization of time, space, and the allocation of resources ensures that these best practices become common practice.

The early college high schools are required to adhere to a well-defined list of design principles (NCNSP, 2008). These design principles (presented in Table 1) are seen as central to the success of these schools; and are therefore non-negotiable and must be adhered to by all High School Innovation Projects (HSIP), including early college high schools.

In order to address the design principle of Personalization, the ECHS program utilizes facets of small learning communities (SLC). Small schools are intended to provide a more intimate school culture that allow for the development of strong relationships, sense of community, and overall increased support. Early research on small schools showed some positive outcomes for low-income students (Howley, 1995; Lee & Smith, 1997) and other students in general (Cotton, 1996, 2001; Page, Layzer, Schimmenti, Bernstein, & Horst, 2002; Wasley et al., 2000), more current research is not so clear. Results from the research on small high schools have not been consistently positive as Kahne, Sporte, de la Torre, and Easton (2008) presented in their evaluation of the Chicago High School Redesign Initiative. They found the following:

A. small schools did not offer a stronger instructional climate,

B. nor did these small schools improve student achievement, and

C. students also reported very different experiences and degrees of success as a result of the school they attended.

These results were consistent with findings of Bernstein, Millsap, Schimmenti, and Page (2008) as they reported some positive outcomes for students attending smaller high schools but generally the results for small high schools have not been consistently linked to improvements in student performance. The SLC model presents the opportunity for educators to create a rigorous and supportive learning environment while the actualization of consistently improving achievement remains problematic.

1.3 Evidence of success

Given the relatively recent advent of the ECHS model, research has been scant and is generally divided into two areas focusing on compliance and performance. The compliance studies have reported on the degree to which the schools were adhering to the core design principles, while the performance evaluations have investigated performance outcomes such as graduation rates, student achievement, and discipline. Given the early stage of implementation, the number of schools is limited resulting in research results based on relatively small samples. Given the focus of this study, the performance evaluations will be presented.

Until recently there was a paucity of empirical research on the ECHS model. Edmunds et al. (2010) reported the performance of ECHS students was mixed as compared to other high school students. She found that ECHS students did have better graduation rates and improved discipline, but academic performance was not found to be consistently better than traditional high school students. In contrast to this study, Kaniuka & Vickers (2010) found that the students at one ECHS had consistently higher passing rates on selected North Carolina end-of-course high school tests when compared to traditional high school students.

The North Carolina New Schools Project (NCNSP) hosts on its website several reports showing the performance of North Carolina ECHS students. A study conducted by Serve (2010) used an experimental design to investigate several performance measures: achievement in Algebra 1, English 1, suspensions, and on-track college performance. Consistent with earlier research some performance measures favored ECHS students but overall academic performance was not found to be consistently better for ECHS students. Of particular note in this study was the fact that the achievement gap between minorities and white students was much smaller for ECHS students. Expanding the research to include a national perspective a study by Berger, Adleman, and Cole (2010) reported that student achievement, accrual of college course credit, graduation rates, and overall progress were positive for ECHS students. The need for additional research is clear in light of what Fleishman and Heppen (2009) argued that evidence-based reforms are required to meet the goals contained in current reform policies for the purpose of providing educators with reliable choices. The current body of research has not provided clear empirical support for the ECHS model. To that end this study seeks to add to this developing body of research by examining the performance of ECHS and traditional high school students by increasing the sample size and commensurate statistical power.

1.4 Research questions

This study examined the relationship between high school design (ECHS or traditional) using a sample of North Carolina high school students who were enrolled during the 2008-2009 school year. To be included in the study these students needed to have at least one end-of-course test score and grade eight reading and mathematics scores. To examine how school design is related to student performance measures the following major research questions guided this study:

1. What differences existed between early college and traditional high school students on the rates of passing select end-of-course exams?

2. What were the achievement gaps between students attending the early college and traditional high

schools?

2. Research Design

2.1 Participants

The state of North Carolina has compiled a database of student achievement scores for all students who participate in the state testing program. For this study, scores for 374,987 high school students or the total number of high school students tested for the 2008-2009 school year were part of the overall sample. The traditional student group was significantly larger than the ECHS group and to avoid sampling bias and sample size issues, a proportional random sample of traditional students was matched with the ECHS students by using grade eight reading and mathematics scores and gender. Gender was considered an important sampling parameter as ECHS tend to have a significantly greater percentage of female students as compared to traditional high schools.

2.2 Academic performance variable

The dependent variable examined was the proficiency (pass/fail) status for each student in Algebra 1, Biology, and English 1 end-of-grade tests. The tests were developed by the North Carolina Department of Public Instruction (see NCDPI, n.d.) and are aligned to the standard course of study for each subject. Each test uses multiple-choice items to provide an estimate of the student's mastery of course content. A student is considered to have passed the test or be proficient if they scored a Level III or IV on the test (there are 4 levels). Each test has a unique cut score or percent correct that is required to achieve each of the proficiency levels. The North Carolina Department of Public Instruction determines the level or cut scores by examining actual student performance on field tests and teacher judgment.

2.3 Data analysis

Academic achievement was evaluated using a Two-Way Chi-Square (Cross Tabs) with school being the major grouping variable and the number of students passing (failing) on select state exams the other variable. The state tests selected were Algebra 1, Biology, and English 1, as passing these three tests is required to meet North Carolina State graduation standards. The data was first analyzed by school for each of the three tests to determine if in fact there was a difference in achievement between the two groups of students for each of the tests. A subsequent analysis was conducted by splitting the data by race and gender to examine issues of how school type, gender, and race were related in influencing student performance. These data are reported in descriptively, specifically percentage and number of students passing.

3. Results

The results of the study are presented in two sections, first being a descriptive analysis of the student samples in terms of race, gender, economic status, and achievement.

3.1 Descriptive analysis for student samples

The descriptive statistics for the two groups of students used in the analysis are reported in Table 2. In terms of academic performance on the grade-eight reading and mathematics end-of-course tests, the Chi-Square analysis revealed no significant difference in the percentage of students passing either exam across school types. Specifically the results were for reading $\chi^2 = 0.000(1)$, $p = 1.000$ and for mathematics $\chi^2 = 0.000(1)$, $p = 1.000$. The percent passing for both traditional and early college students for reading was 88.12 and math 84.33. As seen, gender distributions are identical.

Table 2

Race, gender, and wealth distribution of participants

Items	School Type	
	Traditional (n = 6516)	Early College (n = 6516)
Race		
Minority	41.00	44.10
Non Minority	59.00	55.90
Gender		
Female	60.13	60.13
Male	39.87	39.87
Economically disadvantaged	33.88	36.52

Note. Values are in percentage.

3.2 Student achievement

The first question asked if there was a difference in the performance levels between student s attending early colleges and those in a traditional school setting. Table 3 shows that for all three tests the early college students have higher passing percentages. This difference is significant for Biology and English 1 by 3.45 and 3.39 percent respectively. Although the differences are significant the value of Cramérs *V* indicated that the effect of attending the early college is small. The next question asked is, what are the achievement gaps that were found in this sample? To facilitate the reporting, results are presented for each of the three tests separately.

Table 3

Results of the Two-way Chi-square comparison for all students

Test	Percent of students passing (Number) School type		Pearson Chi-Square	p-value	Cramérs *V*
	Early College	Traditional			
Algebra 1	83.33 (5226)	82.71 (5084)	0.66	0.42	0.00
Biology	80.93 (3022)	77.48 (3276)	14.26	0.00	0.04
English 1	91.88 (5996)	88.49 (5722)	42.08	0.00	0.06

Table 4 shows the results for Algebra 1. The data were analyzed by first comparing all students (first row) and then the female/male combinations of the six racial categories used by North Carolina. As seen in the table, regardless of the school attended there are performance gaps between white and minority students. However, 4 of the 6 racial groups showed significant differences in the rate of passing across school type with all but one (white) favoring the early college students. The largest gap seen for both school types is that between Asian and black students. The range of the gaps was 20.03 for early colleges and 25.67 for traditional schools. Comparing the gap across gender by race for each school type revealed that in 50% of the cases, the students attending the early college performed significantly better than their traditional school peers. Of the cases that were not significant, the traditional school did have more white students passing.

The results for Biology are presented in Table 5. For all students 3 of the 6 comparisons resulted in significant differences all of which favored the early college students with the greatest advantage being for multiracial students (11.92). Extending the analysis across race and gender revealed 9 significantly different gaps all showing that early college students were passing in greater percentages. The greatest gap across schools was for black males (16.39) and Multi-racial females attending the early colleges had a 16.05 advantage. The greatest achievement gap seen for early college students was that between American Indian and Asian females (46) and for traditional students it was 32.46 for the same students. Of the non-significant differences, the

advantage was evenly split between the two school types.

Table 4

Two-way Chi-square comparison for Algebra 1 - Race and gender with percent (number)

Student	School type		Pearson Chi-Square	*p*-value	Cramérs *V*
	Early College	Traditional			
American Indian	84.76 (128)	72.8 (83)	5.73	0.02	0.15
Female	85.23(75)	73.13 (49)	3.48	0.06	0.15
Male	84.13 (53)	72.34 (34)	2.26	0.13	0.14
Asian	92.78 (180)	92.86 (130)	0.00	0.98	0.00
Female	92.79 (103)	90.9 (60)	0.20	0.65	0.03
Male	92.77 (77)	94.59 (70)	0.22	0.64	0.04
Black	72.75 (1279)	67.19 (1065)	12.3	0.00	0.06
Female	72.58 (834)	67.82 (590)	5.42	0.02	0.05
Male	70.07 (445)	66.43 (475)	6.83	0.01	0.07
Hispanic	81.82 (414)	77.36 (263)	2.54	0.11	0.06
Female	81.55 (252)	76.97 (137)	1.48	0.22	0.06
Male	82.23 (162)	77.78 (126)	1.12	0.29	0.06
White	88.51 (3069)	89.72 (3422)	7.22	0.00	0.03
Female	86.42 (1744)	88.48 (1721)	3.83	0.05	0.03
Male	89.53 (1325)	89.72 (1701)	2.09	0.15	0.03
Multiracial	91.76 (156)	78.51 (121)	11.34	0.00	0.19
Female	89.62 (95)	73.61 (53)	7.84	0.00	0.21
Male	95.31 (61)	82.93 (68)	5.36	0.02	0.19

Table 5

Two-way Chi-square comparison for Biology - Race and gender with percent (number)

Student	School type		Pearson Chi-Square	*p*-value	Cramérs *V*
	Early College	Traditional			
American Indian	62.36 (53)	66.23 (51)	0.27	0.61	0.04
Female	54 (27)	57.78 (26)	0.14	0.71	0.20
Male	74.29 (26)	78.13 (25)	0.14	0.71	0.31
Asian	96.91 (94)	93.33 (84)	1.30	0.25	0.08
Female	100 (52)	90.24 (37)	5.30	0.02	0.00
Male	93.33 (42)	95.92 (47)	0.31	0.58	0.09
Black	70.58 (782)	59.69 (647)	28.64	0.00	0.11
Female	66.99 (479)	58.35 (346)	10.4	0.00	0.09
Male	77.69 (303)	61.3 (301)	25.17	0.01	0.12
Hispanic	77.52 (238)	70.00 (154)	3.81	0.05	0.09
Female	76.76 (142)	63.3 (69)	6.13	0.01	0.06
Male	78.69 (96)	76.58 (85)	0.15	0.69	0.11
White	86.86 (1765)	85.31 (2264)	2.31	0.13	0.02
Female	83.96 (984)	83.2 (1119)	0.27	0.61	0.01
Male	90.81 (781)	87.47 (1145)	5.83	0.02	0.04
Multiracial	85.71 (90)	73.79 (76)	4.51	0.03	0.15
Female	80.88 (55)	64.83 (31)	3.89	0.05	0.01
Male	94.59 (35)	81.82 (45)	3.18	0.07	0.14

English 1 results are reported in Table 6. Four of the six comparisons showed that early college students had significantly higher rates of passing as compared to traditional students. The largest gap reported was that for the ECHS American Indian students having a 19.52 percent advantage. The gap between the highest performing early college students and the lowest (white/Hispanic) was 8.93 and for traditional students (white/American Indian) was 23.19. Disaggregating the analysis across race and gender for English 1 revealed similar patterns as compared to the previous two analyses. Fifty percent of the comparisons revealed significant differences which all favored the early college students. When compared to traditional students, the early college students had the greatest advantage for American Indian male students (26.92) while the smallest was for white males (1.89).

Table 6

Two-way Chi-square comparison for English 1- Race and gender with percent (number)

Student	School type		Pearson Chi-Square	*p*-value	Cramérs *V*
	Early College	Traditional			
American Indian	90.06 (136)	70.54 (91)	17.28	0.00	0.25
Female	92.05 (81)	77.63 (59)	6.78	0.01	0.20
Male	87.3 (55)	60.38 (32)	11.13	0.01	0.31
Asian	93.5 (187)	91.78 (134)	0.37	0.54	0.03
Female	91.15 (103)	91.3 (63)	0.01	0.97	0.00
Male	96.56 (84)	92.21 (71)	1.49	0.22	0.09
Black	87.22 (1598)	79.39 (1360)	39.32	0.00	0.15
Female	88.15 (1056)	82.05 (759)	15.62	0.00	0.09
Male	85.49 (542)	76.27 (601)	6.83	0.01	0.12
Hispanic	86.01 (455)	79.39 (289)	6.79	0.01	0.09
Female	86.5 (282)	82.07 (151)	1.81	0.18	0.06
Male	85.22 (173)	76.67 (138)	4.57	0.03	0.11
White	94.94 (3451)	93.73 (3701)	5.62	0.02	0.03
Female	95.27 (1996)	94.72 (1900)	0.67	0.41	0.01
Male	94.48 (1455)	92.59 (1801)	4.97	0.03	0.04
Multiracial	94.41 (169)	90.18 (147)	2.17	0.14	0.08
Female	93.39 (108)	93.42 (71)	0.02	0.89	0.01
Male	95.31 (61)	93.83 (76)	2.78	0.09	0.14

The results of this study do indicate that some students do benefit from attending early colleges that ranges up to a 20% or more advantage in students passing certain state tests. The implications of passing these tests at different rates will be discussed in the next section.

4. Discussions

Performance data for North Carolina high schools students was analyzed to observe what, if any, differences could be found between how high school students performed and what type of high school the student attended. To that end, passing or failing specific end-of-course tests were used to measure student performance. Passing a summative has been adopted as a measure of student success and therefore in the case of North Carolina an indicator of the efficiency of high schools in preparing students to meet graduation requirements. It is debatable if simply passing a series of tests is a valid indicator that a school is successful or if a student is college ready; however a history of failing has been shown to increase the likelihood that students will dropout (Dee & Jacob, 2006; Warren et al., 2006) which certainly impacts the student's ability to access college or meaningful employment. Taking the position that graduating from high school is the most efficient path students have to obtaining entrance into higher education; the early college model seems to offer a superior option for many students. In short, the early college model can increase the likelihood that a student will graduate high school by

removing or at least lessening the chance of failing state tests. It is clear, in terms of academic performance all students did not benefit from attending an early college, however as the data showed many traditionally underperforming students were significantly better position as a result of attending these schools.

This study showed that overall student performance was surprisingly stable across subjects. It was seen that when differences were significant, 66% of the time early college students performed better. This taken with the non-significant results revealed that over 90% of the time Early College students had higher levels of performance. Considering the non-significant results is important since many school leaders while they appreciate and rely on rigorous research (Honig & Coburn, 2007; Kochanek & Clifford, 2011) do view simple performance differences as important. In particular, the North Carolina accountability model does use some statistical accommodations to help schools meet performance expectations, but these accommodations are based on actual performance so even small differences can make substantial impact on schools and students (NCDPI, 2010).

Another objective of this study was to examine the degree to which it could be discovered that there were differences in student performance once the data was disaggregated across race and gender. This is strongly related to one of the core objectives of the early college model, which is to serve traditionally under-represented youth to and assist them in becoming college ready. Historically, American high schools have failed to accomplish this as the achievement gap and poor minority student graduation rates remain a persistent and ubiquitous dilemma facing American schools (see Gabriel, 2010, November 9) one such example is that black males are failing to make significant gains and remain under-represented in post secondary environments. To that end, this study showed that in all cases, one group was significantly better off for attending early colleges; black students. Compared to traditional schools, black students did pass at higher rates and the gaps in performance were narrower, many being significant. This was true for other minority students too. It was seen that a significant portion of Early College students were better off not only in terms of absolute performance, but in several instances the gaps between minority students and white students was much narrower. This narrowing of the gap illustrates that minority students can on a large scale perform better than previously seen and that the advantage white students traditionally have had can be effectively narrowed without sacrificing their performance. Unfortunately, although the gaps are narrower, they do remain and in some instances are stubbornly wide.

In previous studies (Edmonds, 2010; Kaniuka & Vickers, 2010; Serve, 2010) similar student performance patterns were seen. The methodology used in these previous studies ranged from an experimental design with a relatively small sample size, a single school study, and a descriptive approach. The stability of the results across these three methods is significant as it tends to indicate that student performance outcomes are related to the school model. These previous studies revealed that early college students in general performed nearly as well if not better than similar traditional high school students. The results from these studies showed that on average traditionally underperforming students were better off attending early colleges and that white students were usually performed well. This study tends to support these previous results showing that the early college model does provide a superior educational environment for many students and for those that did not show an advantage, the differences were marginal. Traditionally, the largest decrease in students' enrollment occurs between the ninth and tenth grade. Typically there is a 20-25% drop in class. For early colleges this drop is well below 10% and may be in part the direct result of the higher rates of passing for Algebra 1 and English 1, both of which are given in grade nine. Overall, the graduation rate for all early colleges in North Carolina exceeds 85%, well above the 72% for the rest of the state (NCNSP, 2011). While many factors may contribute to the success of the ECHS (see Edmunds et al., 2010; Kaniuka & Vickers, 2010) demonstrated herein is that one is superior academic performance.

5. Future research

The early college model is a relatively new school reform initiative and research efforts have been few, with

the preliminary studies indicating that there may be good cause to further study this school reform model. It is suggested that future research take two broad paths. First, continue the investigation started by this study and others (Edmunds et al, 2010; Kaniuka & Vickers, 2010; Serve, 2010) as to the effect the early college model has on high school students in terms of achievement, affect, and career choices. This study can be replicated using newer data and dividing the early colleges into groups to reflect the higher educational partnership (types of higher education partnerships) to ascertain if differences exist as related to design.

Second as the first groups of students have graduated and either received a degree or certificate or continued their education, it may be appropriate to begin longitudinal research to ascertain the long-term effects of the model. Additional study is needed to determine the scope and breath of the initiative's impact to go beyond helping students become college ready to realizing college success as a function of the students' opportunity to access more advanced curricula and earn college credit (see Attewell & Domina, 2008). There is some rudimentary research (Jobs for the Future, 2011) to date that supports the notion that the early college model has long-term impact other than helping students become college ready. It remains unknown whether the model does help students acquire a post secondary degree or certificate at rates greater than traditional high school students do.

6. Conclusion

The early college model continues to expand yearly in North Carolina (NCNSP, 2010). Indications from recent research are that the model has potential to be a successful alternative to traditional high school for some students. It is certainty true that successful reforms need to be developed and shared as suggested by Chenoweth (2009). By developing a deeper understanding of successful school reform models we can move from the ***initiative*** phase of high school reform to the ***design*** stage, and actually scale up successful reforms (Cohen & Ball, 2007; Rowan, Correnti, Miller, & Camburn, 2009). However, because of the paucity of research studies and the results presented. Thus far in seeking to scale up the initiative without more understanding of its effectiveness in terms of student outcomes and design features maybe premature.

About the author: *Ted Kaniuka* teaches in the Department of Educational Leadership at Fayetteville State University. He has worked as a district superintendent, associate and assistant superintendents, principal, and classroom teacher. His research interests are high school reform, instructional decision making, and social justice.

7. References:

American Council on Education. (2006). *Students of color make dramatic gains in college enrollment but still trail whites in the rate at which they attend college*. Retrieved from http://www.acenet.edu/AM/Template.cfm?Section=Search&template=/CM/HTMLDisplay.cfm&ContentID=21571

Attewell, P., & Domina, T. (2008). Raising the bar: Curricular intensity and academic performance. *Educational Evaluation and Policy Analysis, 30*(1), 51-71. doi: 10.3102/0162373707313409 <http://dx.doi.org/10.3102/0162373707313409>

Braun, H. I., Wang, A., Jenkins, F., & Weinbaum, E. (2006). The Black-White achievement gap: Do state policies matter? *Education Policy Analysis Archives, 14*(8). Retrieved from http://epaa.asu.edu/epaa/v14n8/

Bill and Melinda Gates Foundation. (2010). *Learning about teaching: Initial findings from the measures of effective teaching project*. Seattle, WA: Author.

Berger, A., Adelman, N., & Cole, S. (2010). The early college high school initiative: An overview of five

evaluation years. *Peabody Journal of Education, 85*, 333–347. doi: 10.1080/0161956X.2010.491697 <http://dx.doi.org/10.1080/0161956X.2010.491697>

Bernstein, L., Millsap, M., Schimmenti, J., & Page, L. (2008). *Implementation study of smaller learning communities*. Cambridge: Abt Associates.

Center on Education Policy. (2009). *State test score trends through 2007-08: Part 3 - Are achievement gaps closing and is achievement rising for all?* Washington, DC: Author.

Chenoweth, K. (2009). It can be done, it's being done, and here's how. *Phi Delta Kappan, 91*(1). 38-43.

Cohen, D., & Ball, D. (2007). Educational innovation and problem of scale. In B. Schneider and S. McDonald (Eds.). *Scale up in education* (pp. 19-36). New York: Rowman and Littlefield.

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, F., Mood, A. M., Weinfeld, F. D., et al. (1966). *Equality of educational opportunity*. Washington, DC: US Government Printing Office.

Cotton, K. (1996). *School size, school climate, and student performance*. Portland, OR: Northwest Regional Education Laboratory.

Cotton, K. (2001). *New small learning communities: findings from recent literature*. Portland, OR: Northwest Regional Education Laboratory.

Commission on the Future of Higher Education. (2006). *A test of leadership: Charting the future of US higher education*. Washington, DC: US Department of Education.

Dee, T. S., & Jacob, B. A. (2006). *Do high school exit exams influence educational attainment or labor market performance?* NBER Working paper Series, Working paper 12199. Retrieved from http://www.nber.org/papers/w12199

Edmunds, J., Bernstein, L., Glennie, E., Willse, J., Arshavsky, N., Unlu, F..... Dallas, A. (2010). Preparing students for college: The implementation and impact of the early college high school model. *Peabody Journal of Education, 85*, 348–364. doi: 10.1080/0161956X.2010.491702 <http://dx.doi.org/10.1080/0161956X.2010.491702>

Gates Foundation. (2006). *Early college high School initiative 2003-2005 evaluation report*. Seattle: Bill and Melinda Gates Foundation.

Gabriel, T. (2010, November 9). Proficiency of black students is found to be far lower than expected. *The New York Times*, p. 22A.

Hoffman, N., & Webb, M. (2009, June 11). Early-college high school: Modest experiment or national movement? *Education Week*. Retrieved from http://www.edweek.org/ew/articles/2009/06/11/35hoffman.html

Honig, M. I., & Coburn, C. E. (2007). Evidence-based decision-making in school district central offices: Toward a policy and research agenda. *Educational Policy, 22*(4), 578–608. doi: 10.1177/0895904807307067 <http://dx.doi.org/10.1177/0895904807307067>

Howley, C. (1995). The Matthew principle: A West Virginia replication? *Education Policy Analysis Archives, 3*(18), 1–25.

Jobs for the Future. (2011). Life beyond early college: Strategies for success. Retrieved from http://www.jff.org/publications/education/life-beyond-early-college-strategies-suc/1208

Jobs for the Future. (2010). *Policies paved the way: Early college innovation in North Carolina*. Boston: Author.

Jobs for the Future. (2009). *A portrait in numbers*. Boston: Author.

Jobs for the Future. (2002). *Early college high schools: Core principles*. Retrieved from http://www.earlycolleges.org/Downloads/CorePrinciples.pdf

Kahne, J., Sporte. S., de la Torre, M., & Easton, J. (2008). Small high schools on a larger scale: The impact of school conversions in Chicago. *Educational Evaluation and Policy Analysis, 30*(3), 281-315. doi: 10.3102/0162373708319184 <http://dx.doi.org/10.3102/0162373708319184>

Kaniuka, T. S., & Vickers, M. (2010). Lessons learned: How early college high schools offer a pathway for high school reform. *NASSP Bulletin*. doi: 10.1177/0192636510384982 <http://dx.doi.org/10.1177/0192636510384982>

Kochanek. J., & Clifford, M. (2011). *Refining a theory of knowledge diffusion among district administrators.* A paper presented at the American Educational Research Association Annual Meeting, New Orleans, LA.

Lee, J. (2006). *Tracking Achievement Gaps and Assessing the Impact of NCLB on the Gaps*. Harvard Civil

Rights Project.

Lee, V. E., & Smith, J. B. (1997). High school size: Which works best and for whom? *Educational Evaluation and Policy Analysis, 19*(3), 205–227.

National Center for Education Statistics. (2009). *NAEP 2009 high school transcript study*. Washington, DC: US Department of Education.

National Center for Education Statistics. (2011). *Condition of education 2011*. Washington, DC: US Department of Education.

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: US Department of Education.

National High School Center. (2007). *Findings from the early college high school initiative: A look at best practices and lessons learned regarding a dual enrollment program*. Washington, DC: Author.

North Carolina New Schools Project. (2011). Retrieved from http://newschoolsproject.org/our-schools/school-models/early-college

North Carolina New Schools Project. (September 2008). *North Carolina new schools project: Design principles for high school innovation projects*. Retrieved from http://newschoolsproject.org/uploads/resources/educator-resource-design-principles-with-indicators-and-evidence.pdf

North Carolina Department of Public Instruction. (2010). *Approval of the five indicators of the new North Carolina school accountability model*. Retrieved from http://www.ncpublicschools.org/docs/stateboard/meetings/2010/revisions/10gcs01revised.pdf

North Carolina Department of Public Instruction. (n.d.). Academic services and instructional support. Retrieved from http://www.ncpublicschools.org/academicservices/

North Carolina Department of Public Instruction. (n.d.). *The multiple-choice test development process*. Retrieved from http://www.ncpublicschools.org/accountability/testing/eog/multiple

Page, L., Layzer, C., Schimmenti, J., Bernstein, L., & Horst, L. (2002). *National evaluation of smaller learning communities: Literature review*. Cambridge, MA: Abt Associates.

Rampey, B.D., Dion, G.S., & Donahue, P. L. (2009). *NAEP 2008 trends in academic progress (NCES 2009–479)*. National Center for Education Statistics, Institute of Education Sciences, US Department of Education, Washington, DC

Rowan, B., Correnti, R., Miller, R., & Camburn, E. (2009). *School improvement by design. Lessons from a study of comprehensive school reform programs*. Pennsylvania: Consortium for policy research in education.

Serve. (2010). *A better 9th grade: Early results from an experimental study of the early college high school model*. Greensboro, N.C.: Author.

United States Department of Education. (2008). *A nation accountable: Twenty-five years after a nation at risk*. Retrieved from http://www.ed.gov/rschstat/research/pubs/accountable/

Warren J. R., Jenkins, K. N., & Kulick, R. B. (2006). High school exit examinations and state-level completion and GED Rates 1972-2002. *Educational Evaluation and Policy Analysis, 28*, 131-152. doi: 10.3102/01623737028002131 <http://dx.doi.org/10.3102/01623737028002131>

Wasley, P., Fine, M., Gladden, M., Holland, N., King, S. M., & Powell, L. (2000). *Small schools: Great strides. A study of new small schools in Chicago*. New York: Bank Street College of Education.