Abstract

This paper examines the broad concept of college readiness, the research on advanced placement courses in high schools, and recommends that a statewide effort is needed to increase college readiness, college acclimation, college persistence, and college graduation rates. This effort needs to include a shared vision and the inclusion of multiple pathways to increase and measure college readiness. Further the author offers that the numerous national reform movements focusing on high schools can lead to more personalized and relevant learning environments for students—ultimately increasing college going rates and preparing students better for 21st challenges. The author concludes the paper with recommendations that can be employed by any state.

Untangling Our Web: A Statewide Approach Is Needed to Improve/Judge College Readiness and to Increase College Success

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This paper began as an exploration of Advanced Placement, the International Baccalaureate Program, and Honors courses and their effectiveness in improving and judging college readiness. The need for a more seamless transition from high school to college and improved college success provided a catalyst for this exploration. An examination of the routes many students pursue to improve college readiness and their chances of gaining admissions at highly selective institutions pointed towards several trails that were probably intended to go to the same place.

Along the way, there were signposts of where others had entered what was beginning to look like a labyrinth of well-intended educational initiatives, reforms, and programs [*One-Third of a nation: Rising dropout rates and declining opportunities*. (2005), *Policy Evaluation and Research Center, Educational Testing Service*; *Crisis or Possibility? Conversations about the American high school*. (2004), Washington, D.C. Institute for Educational Leadership. National High Alliance; *Dual Enrollment of High School Students at Postsecondary Institutions*: 2002-03, National Center for Education Statistics (2005); Creating a high school diploma that counts. *The American Diploma Project (2004); Building a Portfolio of High Schools: A Strategic Investment Toolkit* (2005), Jobs for the Future; *The real value of teachers: Using new information about teacher effectiveness to close the achievement gap.(2004), The Education Trust; Are today's high school graduates ready? Thinking K-16. (2001),* The Education Trust 5(1)*; Academic and social motivational influences on students' academic performance*, (1998), *Educational Psychology Review* 10(2); *Cumulative and residual effects of teachers on future student academic achievement (1988). In Education Trust, Thinking K-16: Good teaching matters: How well qualified teachers can close the gap.]*

Yet, with all the aforementioned data and efforts, 18 out of 100 ninth grades complete college; for whatever reasons, the majority of our youth get caught up in the seams of our web. Pursuing our numerous disconnected and disjointed efforts, it seemed that these

trails exemplified some of the *governance divide* and underscored that a shared vision and statewide approach are *indeed* needed to improve college readiness, to assess these efforts, and to support students as they progress.

This statewide effort needs the collaboration of all systems, the General Assembly, shareholders, business community, teachers, professors, students, and parents. Ultimately, the statewide effort should be a roadmap, with clearly defined streets, that leads to the development of intellectual capital at all educational levels and a stronger North Carolina. In the Foreword to ***The Governance Divide: A Report on a Four-State Study on Improving College Readiness and Success*** (2005) conducted by The Institute for Educational Leadership, The National Center for Public Policy and Higher Education, and The Stanford Institute for Higher Education Research, the authors state:

> **Our current, fractured systems do not serve students well and are based on the outdated view that only an elite group of students attend college. Now, the majority of students attend some form of postsecondary education after high school, but there are a host of problems confronting them….**
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> **To reverse this course, we must connect high school and postsecondary education standards, policies, and practices. Much of this must occur at the state level. Our research found that there are four policy levels that are particularly promising for states interested in creating sustained K-16 reform: assessments and curricula, finance, data systems, and accountability** (iv-ix).

From many indications, it appears that, like other states, we landed in the AP, IB, and Honors quagmire, in our attempt to assess and sort students. The College Board designed the Advanced Placement Program in 1955 to provide an opportunity for students to take college-level coursework and earn college credit while still in high school. After its inception, the AP Program was used mostly for placement and college credit. The expansion of AP coursework into admission occurred in the 1980s and 1990s and coincides with college access movements. Nationally, highly selective colleges and universities use the AP program to identify students they deem "qualified" and to assist in making admissions predictions about the ability for a specific student to succeed in college.

Not surprisingly, the College Board has heavily promoted use of the Advanced Placement Program, and the program has expanded significantly over the last fifty years. In its ***AP Report to the Nation 2005***, the College Board states that it partners with, and supports, professional development for secondary teachers and colleges and universities in the U.S. and abroad "to develop a curriculum of high academic intensity and quality that will enable students to meet the standards for college-level learning in these subjects. As a result, most colleges and universities in the United States …recognize AP Exam results in the admission process, as a sign of a student's ability to succeed in rigorous curricula (1)." In the same document, the College Board demonstrates that it has been responsive to the requests of educators nationwide and has devised a better metric to

convey the extent to which an institution demonstrates broad access to the AP program. North Carolina is named as one of the states that has "seen the greatest amount of positive change in the percentage of students demonstrating college-level mastery of an AP course."

On its current Website the College Board states that "the AP Program offers 35 courses in 20 subject areas. Nearly 60 percent of U.S. high schools participate in the AP Program. In 2005, 2.1 million AP Exams were administered worldwide. More than 60,000 teachers worldwide attended AP workshops and institutes for professional development last year. Over 90 percent of the nation's colleges and universities have an AP policy granting incoming students credit, placement, or both, for qualifying AP Exam grades."

Even though the College Board states that it provides professional development for secondary teachers, the AP Program does not appear to certify AP curriculum or AP teachers. Nor can it assure that the AP program is implemented evenly in any state. Yet, in order to encourage or reward students for selecting AP courses in their junior and senior years in high school, many high schools around the U.S. award one or two extra quality points for students who complete AP courses and/or obtain a certain score on the AP exam given by the College Board. The four point grading scale with a four equaling an A or excellent work has expanded to a six point grading scale for some schools and some students.

Overall, the College Board portrays the AP Program and exams as indicators of college readiness. The College Board admits, however, that:

> **while much growth has occurred in AP participation and performance, a vast gap still exists between the 57% of the class of 2004 that embarked on higher education last fall and the 13 % of the class of 2004 who were prepared to succeed in college….Strong correlations exist between AP success and college success, and educators attest that part of this is due to the way AP enables students to receive a taste of college while still in an environment that is often more intimate and nurturing than the larger university halls were such introductory courses are frequently taught. Effective AP teachers work closely with their students, giving them each the responsibility to reason, analyze, and understand for themselves. As a result, AP students frequently find themselves developing new confidence in their academic abilities, discovering previously unknown potential to go to college and to succeed once there (p. 6, Advanced Placement Report to the Nation).**

According to its current Web site, the International Baccalaureate Organization (IBO) was founded in Geneva, Switzerland in 1968, and it is a non-profit educational foundation. Its original purpose was to facilitate the international mobility of students by insuring an international standard for secondary education for children of diplomats and other persons stationed around the world. Since then its mission has expanded, and it

now seeks to make an IB education available to students of all ages. There are three international education programs: **the Diploma Programme in 1968, the Middle Years Programme (MYP) in 1994, and the Primary Years Programme (PYP) was introduced in 1997.**

The diploma, or secondary program of the IBO, is much smaller than the AP program, and according to the National Research Council, it was offered in 255 high schools in the United States in 2000. The current IBO Website states that 200,000 students from 122 countries are enrolled in one of the three IBO programs. The International Baccalaureate (IB) Diploma Programme describes the diploma program as "a challenging two-year curriculum, primarily aimed at students aged 16 to 19. It leads to a qualification that is widely recognized by the world's leading universities. Students learn more than a collection of facts. The Diploma Programme prepares students for university and encourages them to: ask challenging questions, learn how to learn , develop a strong sense of their own identity and culture , and develop the ability to communicate with and understand people from other countries and cultures." The curriculum is designed so that students study six subjects and focus on a core described as "extended essay, theory of knowledge and creativity, action, service—are compulsory and are central to the philosophy of the Diploma Programme."

The IBO organization states that teachers are trained by participating in IB teacher-training workshops, attending regional conferences, participating in online discussion formats, and consulting IBO online sources for support materials. Students are assessed by classroom teachers and external examiners. Assessments include standardized tests, student portfolios, written assignments, and student presentations, with standardized tests appearing to carry significant weight. Students who pursue the IB curriculum can also earn additional quality points in many high schools in the United States.

The North Carolina Department of Public Instruction has a guide for developing honors courses. The document contains standards for curriculum, instruction and assessment. Additionally, each content area provides resources that may be used to complete the required components of an Honors course. There are currently various honors courses offered in North Carolina and in most other states in the U.S. Despite the diversity in honors courses, university admissions counselors admit that they *know* which courses are more rigorous and which courses should really *count.* Students often earn one or two quality points for passing honors courses in high schools around the U.S. and in North Carolina.

Geiser and Santelices (2004) researchers from the University of California, Berkeley in a paper entitled, "The Role of Advanced Placement and Honors Courses in College Admissions" examine using AP and Honors courses in admission decisions in public universities and argue that while the performance on AP examinations is strongly related to the academic performance of students in college, "the *number* of AP and honors courses taken in high school bears little or no relationship to students' later performance in college." They further affirm that colleges and universities might need to reconsider their use of AP as a criterion in "high stakes" admissions since merely taking "AP or

other honors-level courses in high school is not a valid indicator of the likelihood that students will perform well in college."

Moreover, the authors point out that the current use and emphasis of AP exams in college admissions leaves some students at a disadvantage. The number, quality, and availability of AP courses at a given high school are highly correlated to the affluence of the school. Additionally, students of color attending the same high school might be tracked or discouraged from taking AP or honors courses.

The aforementioned authors base their study on a sample of 81,445 freshmen entering the University of California between 1998 and 2001. The authors suggest that their UC data are probably similar enough to other colleges and universities to suggest that reconsideration be given to how AP and honors courses are used in high stakes admissions. What do our data suggest in North Carolina?

In 1999, the National Research Council (NCR) formed a diverse committee of high school and university educators to study advanced study in math and science in American high schools. Wood (2002) in an article "Advanced High School Biology in an Era of Rapid Change: A Summary of the Biology Panel Report from the NRC Committee on Programs for Advanced Study of Mathematics and Science in American High Schools" relates findings from the biology panel examining the implementation AP and IB courses in America.

The biology panel of the larger NCR committee was charged to evaluate the content, pedagogy, assessment, and outcomes of AP and IB programs. The review of specific disciplines of the advanced placement and IB coursework was part of the larger committee report from the National Research Council (NRC) --*Learning and Improving Advanced Study of Mathematics and Science in U.S. High School.*

The biology panel of university professors, high school teachers, learning theorists, and other educators found that in order to teach in an International Baccalaureate program a school had to ensure that adequate resources would be available and teachers were required to be certified. The panel concluded that overall the content for AP biology lacked adequate quality control. Moreover, the panel found that there was "much room for improvement in the present state of these courses generally and the AP course in particular." Teaching of biology, for the most part, did not take advantage of evidence-based research on how students learn science. Course syllabi for both AP and IB courses were out of date and inflexible. Advanced placement courses were found to overly emphasis the structure of plants and animals.

The panel admitted that while AP and IB programs have improved the teaching and outcomes of advanced biology at the secondary level, there is much room for improvement. Particularly, the biology panel recommended improvement in three areas: 1) establishment of a method for insuring quality control of the content taught in advanced placement courses (including IB), 2) incorporation of more recent knowledge concerning optimal learning conditions for students, and 3) examination of the content of

the advanced courses to insure in depth presentation of knowledge and unifying concepts. The panel further indicated that *efforts to improve AP and IB programs should be part of a broad initiative to improve the teaching of biology from k-16.*

Matthews (2004) seems to believe that many of the issues surrounding accepting and interpreting AP courses revolve around the college's need to continuous raise acceptable AP scores to underscore its competitiveness and the inability of college professors to respect the comparability of AP courses to college courses. Matthews implies that college courses are not good examples of how introductory college courses *could* be taught. However, there are not sufficient data to compare the quality of college introductory courses with AP courses offered in high school.

In a recent *Education Week* commentary, "Rigor on Trial" the co-director of the Change Leadership Group at Harvard University's Graduate School of Education, Tony Wagner, in a quest to understand the meaning of the "reform de jour" (2006) asks the question—"How do we create a reform strategy that relies less on mindless, mandated compliance and computer-scored, test-based accountability and more on the development of collaborative problem-solving and reasoning skills?" In his commentary, Wagner affirms that visits to AP classes with principals in Hawaii revealed that "teachers were covering more academic content at a faster pace. But the primary competency students were being asked to master was the ability to memorize copious amounts of information for the test. Teachers' questions to students tended to be almost entirely related to factual recall. In our opinion, not a single one of the AP classes we saw was sufficiently rigorous to prepare students for work, citizenship, and continuous learning in today's world. In fact, in several of the non-AP classes we observed, there was a stronger purpose to the lesson, more thinking being done by students, and assessments that required more analysis."

While acknowledging that today's student must graduate from high school with an arsenal of college readiness, work readiness, and citizen-readiness skills, Wagner affirms he is "deeply troubled" by how college readiness is defined and measured. He highlights that what is needed to get into college is apparently not what is needed to graduate from college. He states:

> **Consider one example: We know that advanced math requirements are one of the most significant contributors to increasing numbers of high school students' dropping out; why, then, should all students have to take these courses for admission to a four-year college, instead of classes that teach more widely used math skills like statistics and probability? Math teachers say that research shows that students who take advanced math are more likely to succeed in college, but the research suggests only an association, not cause and effect.**
>
> **We must also ask what competencies essential for adult success are not being taught because there is currently no college-entrance requirement or national test for them.**

Wagner ends his commentary with a hypothetical situation in which an individual is on trial for his/her life and the jurors are high school graduates who are college ready. He hopes that those jurors can listen with "both a critical mind and a compassionate heart and communicate clearly what they understand…. To seek the truth." The alternative would be the jurors could only demonstrate their ability to memorize information and to respond to short answer or multiple choice questions. Wagner queries, "What does it mean to graduate all of our high school students as "college ready" and "jury ready"?

The Potential for North Carolina

North Carolina has had leadership from the Governor's office and the General Assembly to improve education at every level and to make North Carolina first in education from K-16, yet a true statewide plan is still on the horizon. Even though there is not a statewide plan, there are hints of what could be constructed into a shared vision and statewide effort. In 1983, for example, the General Assembly created the Huskins Cooperative Program to improve articulation and to increase students' college participation rates. The primary purpose of the dual enrollment program was to make available college level academic, technical, and advanced vocational courses not otherwise available to students in their high schools. The law specifies that these programs could only be offered when there is an agreement between the local community college and local school board of education.

Students participating in the Huskins Cooperative Program take college-level courses and must meet the same entry criteria as other community college students. The courses, however, are generally offered for only high school students, and the courses cannot be substituted for the North Carolina Standard Course of Study. There is no cost for college tuition. In order to be eligible for these programs, students must be in good academic standing at their high schools (and there must be a cooperative agreement between the high school and community college). Even though there is no tuition paid by students; they must pay for their books and materials for the community college courses.

In the 2003 Session, the General Assembly passed the Innovative Education Initiatives Act which endorses the overall goal of making North Carolina's education system (K-16) first in America. The Act authorizes the Education Cabinet to set cooperative efforts as its priority and to specifically look for ways to collaborate to reduce high school dropout rates, to increase high school and college graduation rates, to reduce the need for remediation in colleges and universities, and to increase completion rates at the certificate, associate, and bachelor's degree levels.

The Innovative Education Initiatives act moves towards the seamless transition and statewide collaboration discussed by the authors of *Governance Divide* (2005). The General Assembly states that the cooperative innovative initiatives targets should include high school students who would benefit from accelerated academic instruction, and it encourages the shared use of resources, personnel, and facilities between public schools

and community colleges. Additionally, the Act states that educational partners could include a constituent UNC institution, a private college or university, a private business or organization, the county board of commissioners, and local boards of education.

In August 2003 after several months of discussions with various stakeholders, Governor Mike Easley received an 11 million dollar grant from the Bill and Melinda Gates Foundation to launch the New Schools Project in North Carolina. The New Schools initiative was designed to create more effective, smaller schools, closer K-16 curriculum alignment, and seamless transitions from high school to community colleges and universities, and theme-based schools that responded to the economic development needs of North Carolina. Collaborations between community colleges and universities allowed some high school projects to be located on community college or college campuses. Ultimately, the New Schools Project is part of a larger high school reform movement and is designed to explore ways public high schools, community colleges, and universities can work together better with a more seamless transition for students.

In September 2004, Governor Easley announced the Learn and Earn High School Program. This initiative built on the New Schools Project and would allow high school students to earn an associate's degree and prepare for high skills jobs while still in high school. Commenting on the Learn and Earn High School Program, the Governor stated, "We have made great strides over the past several years in increasing our college-going rate…. However, we are still losing too many students between grades nine and 12 who drop out. This plan will give high school students another option that provides them with a marketable degree that prepares them for the workforce….There is a real demand for skilled workers in our transitioning economy…Our schools have done a tremendous job providing rigorous course work to prepare students for college…. However, what is needed is a more relevant educational experience that will prepare them to compete in the global marketplace." The New School Project high schools and Learn and Earn schools have been strategically spread throughout North Carolina.

In April 2005, Governor Easley announced that North Carolina would be the first 21st Century Skills Center in America. This 21st Century Skills Center is a public-private partnership and would follow the framework of The Partnership for 21st Century Skills, the national advocacy organization focused on infusing 21st century skills into education. The Partnership emphasizes competencies such as information and communication technology, literacy, critical thinking, communications, collaboration, global awareness, business, and economic and civic literacy. The North Carolina Center is expected to be a national model in dissemination of research and strategies to "*bring a powerful vision for 21st century education.*" The Center is expected to collaborate with school systems, community colleges, and teacher education institutions in the state to develop and pilot new programs. Partnership member organizations include Agilent Technologies, American Association of School Librarians, American Federation of Teachers, Apple, Bell South Foundation, and Cable in the Classroom, Cisco Systems, Inc, Corporation for Public Broadcasting, Dell, Inc., ETS, Ford Motor Company Fund, SAP, Texas Instruments Incorporated, Time Warner Cable, and Verizon.

Moreover, in 2005, Governor Easley jointed the board of Achieve, a bipartisan, non-profit organization that was founded in 1996 at the National Education Summit to help states raise academic standards, improve assessments, and strengthen accountability with the ultimate goal being to prepare youth better for postsecondary work and citizenship. Through the American Diploma Project, Achieve is working nationally to help states determine specific skills high school students need to succeed in high performance jobs and postsecondary education. In North Carolina, there is an America Diploma Project team working to strengthen alignment between secondary and postsecondary institutions.

Synopsis:

There is already considerable national action regarding high school reform, the need for more relevant and rigorous instructional programs, and the need to increase graduation rates in higher education. North Carolina has numerous innovative initiatives to ease the transition from high school to college, but a shared vision and statewide plan have yet to be articulated and implemented. North Carolina's participation in the American Diploma Project holds great promise for further alignment of the various educational systems.

Dual enrollment programs have been authorized since 1983 by the North Carolina General Assembly. Further analysis and expansion of the Huskins Cooperative Program, The New Schools Project, The Learn and Earn High Schools Program, and the 21st Century High School initiatives can create more of a statewide seamless transition for many of our youth who want to pursue specific careers or educational opportunities. These programs give students an opportunity to get college ready within a context of more options than the current admissions, AP, IB, Honors quagmire. With a shared vision, educational systems can create policies, practices, and territorial boundaries that would be more transparent to students, as they attempt to move from one system or level to another.

The college going rate has increased in North Carolina, yet only 25 percent of our residents have obtained college degrees. It is hard to make overall generalizations on the quality of the AP, IB, or Honors Programs and their results in improving college readiness or predicting future college success since their implementation is dependent on numerous variables including the experience and professional development of the individual teacher. The IBO program has a broader overall educational purpose, a defined core, and is meant to be used as a stand alone diploma program.

The AP program provides an option for students to take more rigorous, *college level*, courses will still in high school, but does not claim to be equivalent to a complete high school experience. The College Board admits that the correlations between participating in a AP Program and college success can be explained, in part, by the more intimate and nurturing environment of the AP classroom versus the typical high school classroom.

The College Board's discussion of a "new confidence" students might acquire from a nurturing environment might suggest that the State's initiatives to redesign high schools to make them more relevant, more rigorous, sources of significant relationships, and

overall smaller and more personalized might also influence the college readiness and the college going rate of students. It is possible that college readiness could also be derived from other meaningful, academic high school experiences such as enrolling in dual enrolled programs, theme-based high schools, college athletics, study abroad, entrepreneurial activities, participation in the National Honor Society, and earning a place on a high school honors roll. How does the *new confidence* from participation in AP, Honors, or IB influence college retention, persistence, and graduation rates? *In the 21st century, what is college readiness and college success when viewed in North Carolina or when viewed on a global stage?*

It is not clear how college readiness translates to college retention, college acclimation, college graduation, and success in a career. Possibly these are symptoms of the *Governance Divide*. In North Carolina there has already been sufficient friction between the educational systems regarding the awarding of extra quality points for specific honors courses and college courses taken while students are still in high school. It would appear that this friction will continue unless a statewide pathway with numerous options is designed which includes a standard for AP, IB, and Honors courses and which is owned by representatives of all systems and is a result of input from members of the General Assembly's and business community.

Recommendations:

1. Design a statewide plan for improving college readiness, college acclimation, college retention, college persistence, and college graduation which reflects a shared vision of key stakeholders and includes flexible pathways for students.

    1.1 This plan has to be developed by representatives of all the systems and by representatives from the various initiatives: New Schools Project, 21st Century Partnerships, Department of Public Instruction, community colleges, private and licensed institutions, the America Diploma Project, and so forth. One goal of this plan should be to increase the alignment of the systems' programs, assessments, and outcomes.

2. Examine relationship between AP, Honors, IB, and college retention, college persistence, college graduation, and career success. Identify practices and policies that support (rather than constrain) the success of students. How do other high school opportunities and activities support college readiness and college success (such as dual enrollment, theme-based high schools, Learn and Earn schools, career academies, 4-H Clubs, ROTC, athletics, and so forth)? How can these activities be improved for students? Map a statewide strategy to insure that access to various educational and career pathways are available to all schools in the state by some means.

2.1 Design pathways for students that help them excel and explore specific affinities from K-16 such as: creative arts (music and art), computer and information technology, health sciences, sciences and technology, and so forth.

3. Examine the relationship between dual enrollment opportunities and college readiness and college success.

    3.1 What do we know, and what can we infer from participation in dual-enrolled courses? Are there any lock-stepped programs that are emerging? How can the theme-based high schools be converted into lock-stepped academic programs that fulfill the needs of the state?

    3.2 Examine participation in dual enrolled courses (primarily high school students enrolled in college or university courses) and devise ways to identify policies, practices, and barriers to expand successful completion of these activities.

3. Collaborate with other systems to design a media campaign to disseminate information about the shared vision and a host of statewide options (depict them as lock-step activities from high school to a specific career including college/university study and continuing education renewal, once in a career).

4. Examine how we use AP, IB and Honors courses in the admission process on college and university campuses.

    4.1 Using courses to inform admissions decision could lead to accusations that colleges/universities are not sensitive to the inequity and availability of these courses in high schools around the state. Do they support or constrain increasing the college completion rate in the state?

5. Collaborate with the College Board and state public education organization to establish a certification or standard for AP and Honors courses taught at high schools to insure that students statewide are receiving a quality experience, rigorous content, and instruction that employs research on designing optimal learning conditions.

    5.1 Establish a list of courses (and possibly instructors like graduate faculty on campuses) that has been approved by a rigor and relevance

committee with representatives from the university, colleges, and public schools.

6. Offer AB, IB, and Honors curriculum online for all students in the state to level the playing field and insure a quality standard

    6.1 Coordinate with other organizations that offer online instruction.
    6.2 Online courses should include mastery-learning modules, graphic representations of concepts, online discussion formats, online quizzes, and include evidence-based practice regarding designing optimal, online learning environments.

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