



Developing Pathways to Postsecondary Success

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Executive Summary

Too few Arizona students graduate from high school, and of those who do, many are unprepared for work or further study without costly and time-consuming remediation or training. As the global, knowledge-based economy develops, it is becoming increasingly clear that a high school education is no longer sufficient to qualify for many jobs that will pay a livable wage in the 21st century workplace. A postsecondary educational experience is necessary to attain most of these positions, yet our current system is not adequately preparing all of our students to pursue postsecondary options. Addressing this issue will require system-wide, transformational change of Arizona's education system.

In order to address the lack of relevance and rigor in many students' high school experience, we must create meaningful career pathways that prepare them to earn a livable wage. Importantly, these pathways and reform efforts should be geared towards *all* students, not just a small subset assumed to be on the "college track," and should be concentrated on predictors for postsecondary enrollment and success: academic rigor in the high schools, relevance of high school work to life after high school, and structured support.

In the current educational landscape, programs do exist which allow students to gain postsecondary experiences (dual enrollment, career and technical training that leads to industry certification, Advanced Placement and International Baccalaureate courses, etc.) while enrolled in high school. Pathways would build on existing programs to create a comprehensive, statewide model to serve *all* students.

Pathways to postsecondary would consist of flexible, theme-based, organized structures of coursework, which would prepare students for a certain field or career path. These pathways would integrate rigorous academic coursework with vocational, technical and/or career experience. Every student

would be in an academically rigorous pathway that leads to postsecondary success after high school, whether it is in college or in the workplace.

Ultimately, the success of pathways will require a collaboration between K-12, postsecondary and business leaders in order to determine the skill sets needed and to create opportunities for integration of academic knowledge and real-world experience. Pathways will help combat the current one-size-fits-all concept of the high school experience and instead create multiple options, each of which prepares students for life after high school, whether the workplace or college. All students, but especially at-risk students, will benefit from a career pathways initiative in our public schools.

Introduction

It is well recognized that postsecondary education is now more important than it ever has been. Just as eighth grade is no longer the end point for most students, as in the early and middle parts of the 20th century, high school is no longer a sufficient finishing point. The number of jobs traditionally available to a high school graduate providing a wage sufficient to support a family has been drastically reduced. Accordingly, this fact has not been lost on high school students who are entering postsecondary institutions (community colleges and 4-year universities) at a higher rate than any other period in history (Krueger, 2006). Close to two-thirds of high school graduates enter college directly after graduation (Bailey, Hughes & Karp, 2002). However, this leaves over a third of high school graduates nationally who do not attend any postsecondary directly after high school, many of whom are low-income or minority students.

Educators are not alone in their call for more students to obtain higher education. Many of the fastest growing occupations require some sort

of postsecondary training. In Arizona, 73 out of the projected 100 fastest growing occupations through 2015 require some level of postsecondary training (Arizona Workforce Informer, n.d.). Correspondingly, out of those 100 occupations, 49 out of the top 50 highest paying require an associate degree or higher. However, less than half of Arizona's high school graduating class of 2005 had accumulated the necessary requirements to allow for enrollment in the three state universities (Arizona Board of Regents [ABOR], 2004). Furthermore, in Arizona, only 35% of the state's ninth grade students will graduate high school and immediately enroll in college, while fewer than two in ten Arizona ninth graders graduate high school and then finish college within six years (Arizona Community Foundation, 2008).

High school can no longer be the socially accepted endpoint of a student's education. It is time to work towards a transition between high school and postsecondary that is as seamless as the transition from middle school to high school. Real and perceived barriers to entry to postsecondary need to be addressed, and pathways towards postsecondary education should be created in order to achieve this goal. The current assumption that postsecondary is unnecessary for many students has generated a track for students who are not being prepared for college or for a vocational skill. This general track that does not have a specific purpose or goal beyond graduation from high school does not connect high school to the rest of students' lives and essentially does not prepare them for anything. The creation of a roadmap, so to speak, for all students towards a postsecondary education and meaningful career is the next logical step in the evolution of public schools.

Barriers to Postsecondary Entry

One growing area of research and policy action is in the transition from high school to postsecondary.

Most states, including Arizona, have numerous "transition programs" which are designed to bridge the gap between high school and college. These programs, such as Advanced Placement (AP), early college high schools and dual or concurrent enrollment have different goals and methods, but all are designed to break down barriers to entry into postsecondary. Some of these barriers include a lack of rigor at the high school level, absence of relevance of high school coursework to students' future lives or careers, disparity between high school graduation requirements and postsecondary entrance requirements, financial issues, inadequate support systems and a lack of understanding of postsecondary academic expectations. Some students navigate the transition with little problem, but many students, especially low-income, minority and first-generation college-goers have much more trouble scaling the barriers to postsecondary.

The difference in expectations for high school graduation and postsecondary enrollment, especially at a four-year university is one barrier that students and their parents may not fully grasp. Until the recent change in high school math requirements for high school graduation, Arizona students could meet all requirements for high school graduation but be ineligible for enrollment in Arizona's three state universities (ABOR, 2007; George & Parker, 2007). Students may not understand the difference between the minimum requirements for high school graduation and minimum requirements for college enrollment and find themselves ineligible for entry.

Academic expectations for high school graduation and college entry are also different. There is a disconnect between high school graduation tests which typically stop at 10th grade knowledge and the knowledge needed to take college entrance exams such as the ACT and SAT (Kirst & Bracco, 2003). In Arizona, successful performance on the Arizona Instrument to Measure Standards (AIMS) is a high school graduation requirement. However,

the test is given for the first time at the end of 10th grade. Tests such as the ACT and SAT, which are a requirement of many four-year colleges, expect students to have skills past 10th grade requirements. Students completing the AIMS successfully may receive the message that they have the necessary skills for high school graduation, and thus college entry, when that may not be the case. While two-year colleges do not use the ACT or SAT for entry, degree requirements at two-year colleges also require more than 10th grade knowledge (Kirst & Bracco, 2003).

The difference between high school graduation requirements and college entry can result in students who meet all requirements for high school completion but who are not ready for postsecondary work (Kirst & Bracco, 2003). Students who are not academically prepared for college courses must take remediation classes in order to improve their skills. The number of students requiring remediation classes is one of the biggest issues in higher education (Immerwahr, 1999). Remediation classes do not typically count towards a degree, which increases the time and cost required for students to finish their degree. Students who take even one remediation class have lower rates of bachelor degree completion than students who do not need remediation (Kirst & Bracco, 2003). While there can be many reasons why a student may need remediation, high school preparation and expectations cannot be ignored as a factor. Aligning high school graduation standards and expectations with college entry requirements may help decrease the need for remediation in college (Plucker, Chien & Zaman, 2006).

Another growing issue is the low enrollment of low-income and minority students in postsecondary institutions. African American and Hispanic high school graduates enroll in postsecondary at a lower rate than their White and Asian counterparts (Education Trust, 2001). A contributing factor to

lower enrollment rates is that African American students, Hispanic students and low-income students regardless of race are less likely than their higher income or white counterparts to be enrolled in the college preparation track in high school (Kirst & Bracco, 2003, Martinez & Klopott, 2005). Only 3% of freshman at the 146 most selective institutions come from the bottom quarter of Americans ranked by income and only 10% come from the bottom half. The national percentage of low-income, minority and immigrant students is also projected to grow. About 85% of growth in the 18-24 age group will come from immigrant and minority families over the next decade and over 40% will come from low-income families (Kirst & Bracco, 2003).

There is also a low rate of persistence in college. Approximately 25% of students in four-year colleges and almost 50% of students in two-year colleges don't enroll in their second year of school (Kirst & Bracco, 2003, Huggins, 2004). While the percentage of students entering college directly after high school has risen close to 70%, the percentage of people with a bachelor's degree or certificate by age 29 has barely changed (Kirst & Bracco, 2003, Baily, Hughes & Karp, 2002).

Some states, including Arizona, have started to increase their standards for high school graduation. Rigorous coursework in high school is considered the most important predictor of postsecondary success (Kirst & Bracco, 2003, Plucker, Chien & Zaman, 2006). The highest level of math attained is also a significant indicator of college success (Kirst & Bracco, 2003). A large majority of high schools offer rigorous coursework through programs such as AP or International Baccalaureate (IB). However, the percentage of students enrolled in those classes tends to be low, especially among low-income and minority students. AP courses are also more likely to be offered in schools on the fringe of an urban area than in urban or rural schools (Waits, Setzer, Lewis & Green, 2005).

Research is finding that academic preparation alone is not enough. Social support, access to information about planning for and attending college, parental involvement and knowledge about college, and clear financial aid information are all predictors of success in enrolling in and staying in college (Martinez & Klopott, 2005). A study of students in the Chicago Public School District, who are generally low-income, first-generation college-goers, found that students at all academic levels, including very high performing students had trouble effectively participating in the college application process (Roderick, Nagaoka, Coca & Moeller, 2008). First generation students, particularly Latino students, were especially dependent on the high school and other non-familial resources for information and support in completing the college application and enrollment process. However, in many high schools, structured support was lacking and most students had to rely on friends or teachers for help, many times resulting in inaccurate information and advice. The study also found that applying for financial aid is one of the most important steps for low-income students in their college application process. Students who successfully completed and submitted a Free Application for Federal Student Aid (FAFSA) were much more likely to be enrolled in a four-year college in the fall.

Academic Rigor and Support as Keys to Postsecondary

What can be done? High schools are no strangers to calls for academic reform and are currently dealing with changing standards and requirements at both the state and federal levels. If we believe that “the primary mission of our public education system is to give every student the opportunity to live a meaningful and productive life, which includes earning a wage sufficient to support a small family,” (ACT, 2006, p.2) all students must be prepared to a higher level than currently experienced. Reform efforts should be geared towards all students, not

just a small subset assumed to be on the “college track”. Reform efforts should also be concentrated on the predictors for postsecondary enrollment and success: academic rigor in the high schools, relevance of high school work to life after high school, and structured support. The term “postsecondary success” can refer to success in college or in the workplace.

Academic rigor reform should start with the curriculum. High schools should implement a core curriculum emphasizing rigorous coursework and eliminate “general” tracks that do not prepare students for work or for college (Martinez & Klopott, 2005). Using college admissions requirements as a guide will help to eliminate that barrier for students (Lerner & Brand, 2006). Equitable access to academically rigorous programs such as AP or IB (Lerner & Brand, 2006) and creating a college-going culture for all students in the high school through rigorous coursework and student support (Roderick, Nagaoka, Coca & Moeller, 2008) are recommended.

Structured support reforms should concentrate on coordinated support to help students through the steps of researching, applying and enrolling for college as well as support in career paths research. Increased access to transition programs such as dual enrollment, early college high schools and AP or IB coursework, especially for under-represented students can help with the issues of negotiating the high school to college or work transition (Plucker, Chien & Zaman, 2006). Structured assistance with financial aid and college applications can help students who are reliant on non-familial relationships for postsecondary information (Roderick, Nagaoka, Coca & Moeller, 2008). Because many low-income students significantly over-estimate the real costs of college, accurate financial aid information should help eliminate this barrier for students who need it the most.

On the Road to Relevance – The Pathways Concept

Reform should be not focused solely on college-goers, but instead on increasing the academic skills of all students. Students who plan to join the workforce directly after high school cannot be ignored or shuffled into a lower track at the high school. There is evidence that students who are not college-bound need college-level skills, especially in mathematics and reading, in order to enter a career that can support a family and has room for advancement (ACT, 2006). Relevance is also extremely important to address. Many students who drop out of high school report a lack of understanding of how their high school experience will be relevant to their future (Bridgeland, DiIulio & Morison, 2006).

Importantly, reform should also address the needs of students who plan to join the workforce directly after high school graduation or who are at risk of dropping out of high school, as these are the students who have the most to gain from participation in a career pathways program at the middle and high school level. This is because the income advantages of an Arizona high school graduate over a high school dropout are not as great as one might expect, and are shrinking. While it remains true that those with a bachelor's degree or graduate degree have the greatest earning power, it has been found that taking some college courses, or obtaining an associate degree or occupational certificate, can make a striking difference in the quality of life of an individual and his or her family (George, Hamman & Parker, 2007).

One method gaining traction is the concept of seamless “pathways”. A pathway implies a clear route towards an endpoint: in this case, postsecondary education. The primary goal of the pathways would be to create a transition between high school and postsecondary that is as seamless as the transition from middle school to high school.

As mentioned earlier, there are current programs designed to create this pathway between secondary and postsecondary education. Early college, dual/concurrent enrollment and AP classes are all examples of programs designed to assist in the transition. The pathways concept suggested here takes those existing programs and builds on them to create a comprehensive model that will serve all students, not just a small subset.

Pathways would consist of theme-based, organized structures of coursework, which would prepare for a certain field or career path. These pathways would integrate rigorous academic coursework with vocational, technical and/or career experience and would be geared towards all students. The pathways could be broad in concept, for example, a college preparatory pathway similar to an International Baccalaureate program. The pathways could also be narrower with a specific focus such as engineering or health care. Connecting career plans with skills learned in high school should help to address the importance and relevance of high school coursework. Pathways should be created based on collaboration between K-12, postsecondary and business leaders in order to determine skill sets needed and to create opportunities for integration of academic knowledge and real-world experience. Students should be able to move through and between pathways easily. If each pathway is grounded in the same academic concepts but with different applications, this goal should be able to be accomplished with detailed planning and preparation. Pathways should also include a dual/concurrent enrollment component where students can earn college credit while still in high school. The important idea is that every student is in an academically rigorous pathway that is intended to lead to something tangible.

Pathways will help combat the current one-size-fits-all concept of the high school experience. Instead, pathways would create multiple options,

each of which prepares students for life after high school, whether work or college. The inclusion of a dual or concurrent enrollment option can expose students to college-level work as well as to specific vocational training. Two-year colleges are a major provider of education and training for careers that do not require a bachelor's degree as well as a major provider of preparation for students planning to attend a four-year college. Harnessing both components of two-year colleges in high school can give high school students relevant experience for work or further schooling (Stern, 1999).

Pathways should connect and engage students in concrete ways to life beyond high school. Connecting academic concepts with real world experience or college-level classes can foster a sense of relevance and accomplishment. It can also assist with students considering possible careers and the skills needed for those careers. Some students, especially those who would be the first in their family to attend college tend to have incomplete and/or inaccurate information about requirements for careers in which they are interested (Roderick et al., 2008).

What Does a Pathway Look Like?

As mentioned earlier, pathways should be flexible and have a focus. Because there are many options for the creation of a pathway, there is not a specific picture of a pathway. However, all pathways should incorporate certain aspects, regardless of their focus, and should also utilize existing resources wherever possible. The groundwork for a pathway should start earlier than high school, perhaps as early as sixth grade. Beginning the process of considering career and educational goals before high school can set the stage for decisions made in high school, as well as ensure that any grade-level academic deficiencies can be identified.

In Arizona, the step of laying the groundwork has recently become more concrete and is required for all high school students. In February 2008,

the Arizona State Board of Education approved the creation of Education and Career Action Plans (ECAP) for all high school students starting with the class of 2013 (Arizona Department of Education, 2008). ECAPs are to start no later than the student's freshman year and should document the student's academic career, postsecondary and extra-curricular goals. The important aspects of the ECAP plan must be incorporated into the support systems of the pathways, namely ensuring students complete their ECAP, providing feedback to the plan and continual monitoring and adjustments.

Once students have entered high school, there should be an emphasis on academic coursework and correcting any deficiencies for the first two years. Upon completion of a certain set of coursework, students would take a test similar to the AIMS or even perhaps the PSAT. This test would normally be administered at the end of tenth grade but could be taken earlier. The test should determine whether students have mastered skills to their grade level and are ready for more rigorous classes, even college-level classes for the second part of their high school career. It is important that students are prepared for college-level classes in order for the transition to go smoothly between high school and postsecondary. The test should not be considered a barrier to postsecondary, but rather a measurement to ensure students are ready for the work ahead. It could also serve as a motivator because once students pass the test, they would be eligible to take college classes and perhaps other types of classes or internships. What is most important is that if a student does not pass the test, there are significant support structures in place in order to help them attain the skills they need, not just to pass the test, but to be successful in their subsequent classes.

Once a student has passed the gateway test, there should be many different options from which to choose, all of which continue to be academically rigorous and reinforce skills necessary for the

workforce. One such path could be a five-year program where a student would earn a high school diploma and an associate degree by taking community college classes during high school. This model is similar to many early college high school models where students earn enough credits during high school to have completed a year's worth of an associate degree program and thus have only one year left towards a degree upon graduation from high school.

Another option could be earning a high school diploma and concurrently earning a state license or industry certificate. At the end of the student's high school experience, they could go directly into the workforce with the skills and credentials necessary for success as well as having accurate information about their chosen industry. With rigorous coursework, and community college classes providing the path to licensure, students would not only have a strong foundation, but would be confident they could do college-level work and be prepared if they wanted to go back to school at a later time in order to move through different steps of their career. Community colleges and Joint Technological Education Districts (JTEDs) in Arizona already provide this option. Expanding the availability of this option to all students as well as improving articulation agreements and dual or concurrent enrollment agreements would create an effective pathway for students interested in joining the workforce directly after high school or entering a career that requires postsecondary training but does not require a bachelor's degree. Creating a connection between high school coursework and job training where possible, similar to a career academy, should also be defined.

Another pathway could be a general college-prep pathway. In this case, students would take AP, IB or dual or concurrent enrollment classes to earn college credit while still in high school. These classes could be centered on a career choice such as engineering

or health care, or could be a broader college-prep curriculum. The student could then graduate from high school and enter a 4-year college with some of their credits already completed.

One national pathway plan that is receiving significant attention is the educational reform model of the *Tough Choices or Tough Times* report from the National Center on Education and the Economy (NCEE). While the full agenda of reform from *Tough Choices or Tough Times* covers a wide range of educational issues, from teacher compensation to per-pupil funding, the concept of a pathway to postsecondary is a clear goal of this reform. With a focus on addressing the entire educational spectrum, the *Tough Choices* model proposes a rigorous common core of academics for all students, an internationally benchmarked test determining skill mastery to verify preparedness for college-level work, and the ultimate goal of at least 95% of students graduating high school ready for college-level work without remediation. This model would allow students to move toward postsecondary education when they are ready based on mastery of material, with some transferring to college-level work after 10th grade and others selecting from multiple educational options based on their chosen career and educational pathway.

Pathways – What They Aren't

The availability of multiple pathways for students does not indicate multiple sets of standards or tracks (Callan & Finney, 2003). Whether we like it or not, the current system sets students on one of three tracks: a college-prep track, a general track and a vocational track. Once a student is on one of the tracks other than college-prep, it is very difficult to move to the college-prep track because they may already be behind in their coursework as a result of the traditional lack of rigor in the general and vocational tracks. While a vocational track may prepare students for work, many times the

academics are not rigorous, thus under preparing the student for future work and study in their career. The general track simply prepares students to meet high school graduation requirements and nothing more.

It is important to understand that the pathways concept is not a silver bullet. When high school reform is discussed, the focus inevitably moves from high school to preparation during middle school, elementary school and even early childhood. Improving student preparation and academic success in the elementary grades is important as well and cannot be ignored, especially because research shows that the seeds of disillusionment with school can start in the elementary grades and lead to dropping out of high school (Bridgeland et al., 2006).

The idea of pathways is also not a radical reform. Many schools have programs such as AP and IB, or have agreements with JTEDs and community colleges. However, the radical portion of this concept is the idea that *all* students would be on a clearly defined and flexible path to postsecondary success. Support structures would be in place for students who need those supports in order to ensure they are not behind their grade level when they enter high school or when they're about to take the gateway test. Supports would also be in place to assist with determining career options and the most beneficial pathway for that career. With the continuation of rigorous classes regardless of the selected pathway, students could switch from one to the other. For example, a student on a practical nursing pathway taking licensure classes at a JTED or community college and still taking rigorous math and science courses who decided to move into the college-prep track in order to prepare for a pre-med major at a four-year college could do so because she would not be behind in her coursework. The hands-on experience at the JTED or community college may confirm the student's decision to join the health care field but at a higher level.

Conclusion

There is no doubt that there is a gap between aspirations and reality. Most students report an aspiration to go to college but fewer than 70% actually go to college directly after graduation and significantly fewer finish a bachelor's degree by age 30. Yet the reality is that some postsecondary education is required for most of the fastest growing and best-paying careers. Too many students lose their way in high school and end up in a track that does not lead to postsecondary or to an upwardly mobile career. While creating pathways is not a silver bullet, it addresses issues that have been called for in the literature, namely breaking down barriers between high school and postsecondary. These barriers consist of a lack of academic rigor, a lack of relevance to students' post-high school plans, and a lack of information about college classes and the ability to succeed. Pathways need to have a level of support that meets each student's needs and each path must be academically rigorous with an embedded postsecondary aspect.

High schools cannot do this alone. There must be support from the entire system from pre-K through postsecondary as well as from the business community. There must be specific and informed dialogue concerning the types of skills students need for postsecondary and beyond as well as support for navigating the process. The pathways should be clear and distinct and all students should have access to each pathway.

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