Types of Barriers Maine High School Students May Face in Fulfilling Post-Secondary Educational Aspirations

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Barriers to Fulfilling Post-Secondary Educational Aspirations

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Introduction

Maine policymakers and citizens alike take great pride in our high school completion rates. According to the most recent information, approximately 87 percent of Maine's 9th graders in 1994-95 graduated from high school four years later in 1998. Graduation rates for seniors alone are even higher. National statistics rank Maine 25th in the percent of its seniors who graduate each year.

Unfortunately, however, these high completion rates do not necessarily translate into high post-secondary attendance rates. Each year Maine's high school principals are asked to report the number of graduating seniors who intend to enroll in some type of post-secondary educational institution or program. As shown in Table 1, in 1998 a total

Table 1: 1998 Graduates from Maine Schools Enrolled in Post-Secondary Education or Training

Type of Education	Attending in Maine	Attending outside Maine	Total	Percent of Continuing Students
Post-graduate High School Course	75	22	97	1.10%
Junior College	244	127	371	4.18%
College or University	3247	3619	6866	77.29%
Vocational/Technical School	1126	226	1352	15.22%
Other Continuing Education	117	81	198	2.23%
Total	4809	4075	8884	100.00%

Source: Maine Department of Education

of 8,884 or 62.7 percent of Maine seniors reported they plan on pursuing some type of post-secondary education or training program after graduation, with 6,866 students, roughly 48 percent of all Maine seniors, reporting they plan on attending a 4-year college or university (14).

Post-secondary higher education plans vary considerably among high schools and counties throughout Maine. Table 2 reports seniors' post-secondary plans by county for 1998. As may be seen from the table, while the overall rate is above 62 percent, there is considerable variance among the counties. Six of Maine's counties have rates below

Table 2: Rates of Public High School Graduates Pursuing Post-Secondary Education

County	Rate	County	Rate
Androscoggin	52.8%	**Oxford**	62.1%
Aroostook	67.5%	**Penobscot**	66.2%
Cumberland	71.0%	**Piscataquis**	64.5%
Franklin	63.1%	**Sagadahoc**	54.6%
Hancock	58.2%	**Somerset**	51.8%
Kennebec	63.2%	**Waldo**	58.5%
Knox	63.8%	**Washington**	60.7%
Lincoln	55.4%	**York**	62.4%

Source: Maine Department of Education

60 percent with the lowest rate reported for Somerset County (51.8%). The three highest rates are for Cumberland, Aroostook, and Penobscot counties. And while the overall planned attendance rate is above 60 percent, the *actual* attendance rate is considerably lower (14). Data collected by the National Center for Education Statistics indicates that only about 53.9 percent of Maine's 19 year olds are attending a two- or

four-year institution in the fall after high school graduation (25). This rate, in part, explains why only about 19.2 percent of Maine's citizens 25 years or older had earned a bachelors degree by 1998, a statistic that places Maine 47th in the country (20). As may be seen in Table 3, Maine's rate is more than 5 percent below the national average, and 7 - 8 percent below New Hampshire and Vermont (24).

Table 3: Percentage of the Population, Aged 25 Years Old and Older, Having Attained a Certain Level of Education: March, 1998

State	High School Graduates	Completed Bachelor's Degree or More
United States	82.8%	24.4%
Maine	86.7%	19.2%
New Hampshire	84.0%	26.6%
Vermont	86.7%	27.1%

Source: U.S. Bureau of the Census

All these statistics suggest that while Maine's citizens recognize the importance of earning a high school diploma, fewer than what one might expect are using these diplomas as gateways for pursuing higher education opportunities. This is true even in light of the fact that, nationally, baccalaureate degree holders earn significantly more than high school graduates. Individuals with bachelor's degrees can expect to earn between one-half and one million dollars more than high school graduates over 40 years, and families headed by bachelor's degree holders can expect to earn 1.4 million dollars more. Put another way, the cost benefit ratio is greater for college graduates. For every $1.00

spent attending a public college or university over 4 years translates into approximately a $17.75 increase in lifetime income (19).

Given these statistics, why do only about one-half of Maine's graduating seniors attend a college or university? What barriers to participation in higher education do Maine's students encounter. This report attempts to provide some preliminary answers to this question by reporting findings from the research literature.

The literature on student aspirations is voluminous, and the quality of this literature varies a great deal. A computerized search reveals over 1,600 recent references dealing with aspirations; however, a majority of these references were of limited value in this present review. This was the case for several reasons. First, much of the literature deals with developing aspirations in general, whereas the central focus of this review was on examining barriers to fulfilling aspirations by attending a college or university. Second, while many references report *opinions* **on barriers and how to remove them, few report systematic, hard** *evidence* **documenting the existence of these barriers. Furthermore, even fewer are what one might deem as credible empirical studies in terms of design and analysis. As a result, the original list of 1,676 references was pared down initially to 281 studies that were related to the focus of this review. Further review of these 281 references resulted in the identification of fewer than a dozen studies reporting credible research studies on barriers to higher education participation.**

The remainder of this report briefly describes these studies and summarizes the research findings.

Key Studies of Barriers to Post-Secondary Education Opportunities

Several studies, both outside of Maine and within the state, have examined empirically what barriers students may face in pursuing post-secondary education opportunities. These studies are summarized in this section of the report.

Georgia Studies

The Georgia HOPE (Helping Outstanding Pupils Educationally) Scholarship Program was created in 1993 by the Governor of Georgia and General Assembly in order to provide "incentive for high school and college students to perform well in school." The program has awarded scholarships to those students who graduate from high school with a grade point average (GPA) of 3.0 or better and plan on attending a Georgia public university or college. The scholarship pays college expenses (tuition and a $100/semester book allowance) for those students who maintain at least a GPA of 3.0 while in college. Since 1993, over 358,000 students have earned HOPE Scholarships. The Georgia Lottery finances the HOPE Scholarship and total scholarship outlays now exceed $658 million (3).

The HOPE Scholarship Studies were designed to examine the effects of the scholarship program on Georgia's high school students' post-secondary education aspirations and college attendance rates. A

two-year longitudinal study examined the impact of the program on students. Researchers obtained complete sets of data on 517 students and 555 parents, and analysis of the data revealed that finances, personal preparation, and familial factors all impacted students' pursuit of higher education.

Pennsylvania Study

Researchers in Pennsylvania were concerned about low participation rates in higher education in the south central section of the state. To get a better understanding of the problem, researchers used a series of ethnographic interviews conducted over the course of six months in the late 1980's. They interviewed families with children in elementary school, recent high school graduates who had not gone on to college, school and community leaders, and local people who were currently attending college. All of the informants were members of rural Pennsylvanian towns and were interviewed in their own communities. A total of 44 individuals and/or families were interviewed for the study. Analysis of the data revealed three general factors, family, school, and community, that influenced an individual's decision to attend college or not (4). These findings are referred to later in this report.

Indiana Study

Researchers in Indiana attempted to study which variables impacted senior high school students choice to attend public or private institutions. In the Indiana study, a group of students were followed

from their freshman year until they graduated. Over a period of four years between 1986-87 to 1989-90, a total sample of 482 sets of students and parents were surveyed a total of ten times. The researchers, Hu and Hossler, used this survey data to examine the impact of gender, race and ethnicity, parents' education level, parental income, and students' sensitivity to tuition costs and financial aid on students' college preferences (11).

Kansas Study

Conklin's study uses data derived from surveys conducted in 1987, 1991, and 1994. The researcher surveyed 9th through 12th grade students in six public school districts in the Midwest. One of the purposes of the study was to investigate students' perceptions of their high school education, their long-term career goals, and educational interests and needs. Approximately 11,000 to 13,000 surveys were analyzed for each of the three years (9).

Appalachian Study

The Appalachian Access and Success project, started in 1991, was developed to examine the factors that contribute to the low level of participation in higher education in the Appalachian region of Ohio. The end goal of the project was to identify and remove barriers to accessing higher education. The study developed and administered four surveys in order to discover the barriers in Ohio Appalachia. The four surveys were administered to high school seniors, the parents of these students, high

school personnel, and nontraditional students from Ohio Appalachian schools. Survey results were collected from over 1,500 students, 400 parents, 250 school personnel, and 150 nontraditional college students. The survey found that there are individual, familial, educational, and regional factors that influence a student's post-secondary aspirations (10).

Detroit Study

In an attempt to determine their occupational status sixteen months after graduation from high school, the Detroit public school system sent out 7,395 surveys to 1989 graduates of the public school system. Twenty-three percent of the sample responded with useable surveys. In addition to a demographic profile of 1989 graduates and data regarding current employment or educational status, the survey found that finances were a key factor in the pursuit of post-secondary education attainment (22).

Vermont Study

Kinsley investigated the factors that were likely to influence rural Vermont high school seniors to aspire or not aspire to four-year colleges. A total of 772 Vermont high school seniors completed the survey. The students were drawn from eighteen of Vermont's poorest rural high schools. The survey attempted to explore factors related to how community and school influences, and locus of control impact a student's post-secondary aspirations (12).

FAME Studies

In Maine, the Finance Authority of Maine (FAME) investigated some of the likely reasons that students in Maine are not attending post-secondary institutions in numbers that compare with students at the national level. Two, nearly identical studies, were conducted in 1997 and 1999. Both research projects included three phases. Evidence from the 1997 study is reported more extensively in this review because the data provided in this study is more extensive than the study performed in 1999 (17, 18).

Phase 1 involved parent focus group discussions. The 1997 study consisted of groups at locations in South Portland, Bangor, and Presque Isle, while the 1999 study consisted of only two groups (Portland and Bangor). Each focus group was approximately two and a half hours in length. Phase 2 of both studies involved two 50-minute student mini-group discussions at each of three school systems across Maine for a total of six sessions. In 1997, the school systems were in Saco, SAD 3, and Fort Kent, while the 1999 study chose schools in Saco, Addison, and Winterport. In both studies, teachers and administrators at each school selected students on the basis of the students' perceived plans (college bound and non-college bound) after high school (17, 18).

Each study involved a total of 600 structured telephone interviews during the third phase of the project. For both studies, the sample of approximately 300 parents and 300 students was selected from across

the state and was not limited to the areas covered in the focus groups in phases one and two. The structured interviews attempted to collect information about the advantages and disadvantages of higher education, student's plans following graduating from high school, the financing of higher education, awareness of educational financing programs, perceived factors that impact a student's pursuit of higher education, and ways to make higher education more accessible (17, 18).

Maine Aspirations Foundation Study

In 1990, UNUM partnered with the Maine Aspirations Foundation (MAF) of the Maine Development Foundation to develop a program geared toward education reform in the Maine school system. Five school districts were chosen from across Maine to participate in the program. The school districts were chosen in large part because of the school district's willingness to engage community members in the process of improving the schools and raising students' aspirations. The school districts formed community-based aspirations compacts. The study examined the impacts of the five compacts on community, business, and educational involvement in the local schools, academic outcomes, and school and community outcomes (15).

Maine Aspirations Benchmarking Study

The Maine Aspirations Benchmarking Initiative is a ten-year project developed to examine the aspirations of all 6th through 12th grade Maine school children. The data from the study is intended to be used in

public education reform efforts in Maine. Webber Energy Fuels is funding the $300,000 research project directed by the University of Maine and the Maine Principals' Association Research Partnership (8). The Center for Research and Evaluation and the Center for Student Aspirations at the University of Maine is conducting the research. The first phase of the Maine Aspirations Benchmarking Initiative involved gathering statewide data on the conditions that affect student aspirations in Maine (7). In 1999, 12,673 9th through 12th grade students were surveyed from across the state. The data from the *Students Speak* survey referenced later in this review is considered preliminary data, as the final report has not been released at this time (5).

Silvernail Study

Silvernail examined the literature surrounding Maine's low higher education participation rate. While the debate on participation rates has focused on student aspirations, Silvernail suggested that Maine's higher education system, as well as student aspirations, may be contributing to the problem. In his analysis of the available data, Silvernail compared Maine to six peer states (Nebraska, Wyoming, North Dakota, Iowa, Montana, and Idaho) and found that Maine ranks unsatisfactorily in a number of areas. Silvernail chose these states instead of states in New England because research conducted by the Rand Corporation has shown that comparing Maine to other New England states is not always appropriate. In this comparative study, Silvernail studied higher

education costs, program access and availability, and some other areas that may be contributing to lower higher education participation rates in Maine (23).

Findings from Barrier Studies

A review of the findings from the eleven studies previously described suggests there are several key types of barriers students may face in pursuing post-secondary options. These may be categorized as follows:

1. **Financial**
2. **Academic Preparation**
3. **Familial Factors**
4. **Education and Community systems**

1. Financial

The barrier that was of most concern to students and their parents which surfaced in the majority of the studies was perceived ability to pay for higher education. Although this perception, in some measure, may be attributed to a lack of information about college costs and financial aid options, this barrier seemed to be related to both social economic status (SES) and students' plans after high school.

Both FAME studies found that families saved for their children's education and looked into financial aid programs more often as household income increased. Among parents, college cost and the availability of jobs after high school appeared to have more of a negative impact on college attendance for less affluent households (17, 18). Likewise, the 1997 FAME study found that over 50 percent of students

whose parents had not graduated from college were significantly more likely than other groups to report that the cost of a college education was likely to impact their post-secondary education plans. The same study also found that students who were considered "college bound" spoke more often and in greater depth with their parents about the students' college plans than "non-college bound" students. Conversations about higher education between non-college bound students and their parents were described as being "inconsistent" (17). In Ohio, family income was also found to be a strong predictor of students' post-secondary plans. Students whose families were in the highest income bracket were nearly one-third more likely to be planning on attending a four-year college than those students in the lowest family income bracket (10).

Other studies have found a similar pattern of a lack of information about financial aid and a lack of communication between parents and their children about their post-secondary plans. A Georgia study examining the effects of the HOPE Scholarship Program found that one-third of the students surveyed reported that they "rarely or never" discussed with their parents how the family was going to pay for the students' college plans (1). In the Appalachian region of Ohio, respondents reported that a lack of information about college costs and financial aid availability, and a lack of information in general about college educational programs, was seen as a major barrier to students' pursuit of higher education. The same study reported that, when asked

how they would finance their education, seniors were uncertain how they would do so (10). While 74 percent in the 1997 FAME study and 80 percent of Maine students surveyed in 1999 indicated that they plan on going to college after high school, less than half of the parents and only about half of the college-bound juniors and seniors surveyed indicated that they had started to investigate financial aid programs (17, 18).

As is to be expected, parents were more likely than their children to consider a lack of access to financial resources as being a barrier, and to have a better understanding of the actual cost of post-secondary education. Senior high school students in Appalachia tended to overestimate the cost of higher education (10). While students in Maine were less significantly less likely than their parents to consider the perceived high cost of college attendance to be a disadvantage, they were also significantly less likely to consider a lack of money as being a reason to change their plans to attend college (17, 18).

While some financial concerns may be attributed to incorrect perceptions or a lack of information, family income can, indeed, be a significant barrier. In Appalachia, family income was the most reliable predictor of students' pursuit of higher education. For students in Appalachia, the high actual cost of going to college, a lack of financial aid information, and students' desire to earn an immediate income following high school, acted as major barriers to their attending a post-secondary institution (10). Likewise, in Vermont, when compared to non-aspirers,

those students who planned on attending a college or university reported having more highly educated parents, and a higher family income. Those students who did not have aspirations of attending a four-year college or university were more likely than those who had college aspirations to disagree with the statement "I would go to college if I had the funds" (12).

In a sixteen-month post-graduation follow-up study of 1989 Detroit public high school graduates, 21 percent of the study participants stated that "lack of money" was the main reason for not currently being enrolled in college (22). Survey results from a two-year longitudinal study examining the effects of the HOPE Scholarship Program in Georgia also found that nearly half of the students surveyed felt that they would not be able to pursue a higher education without either obtaining financial aid or working (1). In Maine, 80 percent of parents and 41 percent of students stated that financial ability was the reason for not saving for higher education. Not surprisingly, a difference between economic levels was found in regards to this matter. For parents who earn $50,000 or more, the number of parents agreeing to the above statement dropped to 62 percent (18).

It is true that dramatic increases in tuition, and moderate increases in median family income have made a college education more expensive for middle and low income students. Over the past ten years, tuition at a public four-year institution has risen 53 percent, and in New

England, tuition and fees have risen 75 percent. This compares to a 51 percent increase nationwide (6). Silvernail reported that Maine's average tuition rate of $3,474 per year, places Maine fourteenth in the nation. In his comparison of Maine's four-year public colleges to six peer states, Silvernail found that Maine's average tuition rate is 57 percent higher than the average for the other six states. The percentage that tuition contributes to the total revenue of Maine's four-year public colleges, at 22.4 percent, is also much higher than the comparison group, of which tuition contributes an average of only 14.1 percent of total revenue (23).

During the past eighteen years, median family income rose only twenty-two percent and, while aid per full-time equivalent student rose 66 percent, this was not enough to keep pace with inflation. For low-income students in 1999-00, it would cost them 61 percent of their family income to attend a public four-year institution, and 162 percent at a private four-year institution (6). Silvernail reported that the average *tuition* of Maine's four-year public colleges as a percentage of per capita income is also much higher than the colleges in the comparison states (16.7% vs. 10.5%). The total costs of attending a public four-year Maine college as a percentage of per capita income, at 40.1 percent, is also much higher than the peer states where the average percentage is only 28.5 percent (23).

With the shift from a grant-based program to a loan-based program, the net result of these changes over the past ten years is that

students who are attending college today are facing higher loan debts than ever before upon graduation. In the FAME studies, parents as well as students were greatly concerned about incurring significant amounts of student loan debt (17, 18). In fact, when asked why they had not saved money for their children's education, some parents stated that they had not finished paying off their own student loans. One parent stated that: "They will let you borrow any amount of money you want to borrow and … they (students) don't realize they're mounting a massive loan so when they get out of school, they'll be borrowing more money than they would to buy a house." Another parent expressed concern that student loans would "dig a hole you'll never crawl out of" (17).

In summary, financial factors may have a serious impact on students who desire to pursue a post-secondary education. Today, a college education costs more than ever before; however, as discussed above, a college education provides one with a lifetime earning potential that far outpaces that of a high school education. Additionally, limited early examination of college costs and little knowledge of sources of financial assistance only add to the difficulty of financing a college education.

2. Academic Preparation

Likewise, inadequate academic preparation has been shown to be a significant barrier for post-secondary participation. In a study that examined the differences between those who were and were not aspiring

to higher education in Vermont, aspirers were more likely, than those who did not plan to attend college, to agree that academics stimulated them to higher learning. Aspirers also reported that their high school coursework was not challenging and were unsure if their high school academic program prepared them for college. Aspirers were more likely than non-aspirers to have taken the necessary coursework for college, to have a higher grade point average (GPA), and to be in a college preparatory track in high school (12).

There is some evidence in Maine suggesting that many students may not be completing courses necessary for preparing for college. Table 4 reports the estimated percent of students statewide who will have completed selected mathematics courses by high school graduation. In a recent survey of Maine's high schools (16), principals reported that two-thirds or more of Maine's students will have completed Algebra I and

Table 4: Percent of Maine Students Completing Mathematics Courses by Graduation

Mathematics Courses	Percent (%) Taking Course by Graduation
Review Mathematics	25%
General Mathematics	28%
Pre-algebra	52%
Algebra I/Integrated Math I	78%
Algebra II/Integrated Math II	59%
Geometry	65%
Trigonometry/Pre-calculus	25%
Calculus	11%
AP Calculus	4%
Statistics	12%
Computer Science	36%

Source: Maine Public School Census Survey, 1998-99

Geometry, and three out of five will also have completed Algebra II. However, only one-third will have completed a computer science course, one-fourth a Trigonometry/Pre-calculus course, and only about one in ten high school students will have taken a Calculus course by the time he or she graduates, courses one may argue students should have taken in order to be well prepared for college (16).

The same is true in the case of science courses. Course completion patterns for science appear in Table 5. Approximately three-fourths of Maine students will have completed an Earth Science course

Table 5: Percent of Maine Students Completing Science Courses by Graduation

Science Courses	Percent (%) Taking Course by Graduation
General Science	45%
Physical Science	72%
Earth Science	81%
Environmental Science	41%
Integrated Science	51%
Chemistry	49%
Physics	33%
Technology (taught as a science course)	14%
AP Biology	9%
AP Chemistry	3%
AP Physics	3%
Other	82%

Source: Maine Public School Census Survey, 1998-99

and a Physical Science course by graduation time, but only about one-half will have completed a Chemistry course, and only about one in three will have completed a Physics course. Chemistry and Physics are important prerequisites for college work (16).

The lack of academic preparation also shows up in the need for remedial courses once students begin college. The need for remedial

education at the college level has been a significant concern for some time. A study of 1994-95 recipients of the HOPE Scholarship in Georgia found that nearly 21 percent of all HOPE scholars needed some form of learning support. The same study found that nearly 37 percent of those students who were considered "borderline" needed learning support in college (2).

Another study surveyed Midwestern high school students in 1987, 1991 and again in 1994. This study found that while the percentage of students who planned on going on to college increased each year, the percentage of students who were in a college-preparatory track *decreased* **each year. Although many students feel they are adequately prepared for college, many of these students are required to take remedial education courses once they attend college (9). A study of remedial education found that one-third of all high school students entering college needed remedial education, and nearly fifty percent of all students nationwide who had earned ten or more credits had taken at least one remedial course (13).**

In Maine, students indicated that grades, curriculum and overall preparedness would have the most positive influence on college attendance. Maine parents reported that curriculum, overall preparedness, and teachers were likely to have the greatest influence on students going on to higher education (17). A high percentage of Maine 9th to 12th grade students (81.5%) reported having high levels of

confidence in their abilities. A large number of Maine high school students (86.8%) also reported that hard work leads to success (5). One can take some measure of comfort in these findings because the last two personal qualities are vital for success at the college and university levels. However, if students are not academically prepared for college they may not even attempt college, and if they need substantial academic remediation once they arrive on college campuses, they are far more likely to dropout during the first year.

Thus, academic preparation, or more accurately, the lack of academic preparation, may serve as a significant barrier to attending a college or university. If students do not take appropriate college level courses they will be less competitive on college entrance examinations and in admissions decisions, and less well prepared to perform at the college level. Consequently, if admitted they will more likely have to complete remediation courses, and will be more likely to dropout early in their collegiate career.

3. Familial Factors

For students who may be considering going to college, some parental characteristics may act as a barrier. Some of these characteristics are noted earlier, but one of the most notable parental characteristics that may impact their children's participation in higher education is their own participation, or lack thereof, in post-secondary education.

As the relationship between social economic status (SES) and education level is strong, it can be assumed that as the level of education increases so does SES. And consequently, as SES increases, so does exploration of financial aid programs, and saving for college. Likewise, according to the FAME study, over 50 percent of students whose parents had not graduated from college were significantly more likely than other groups to report that the cost of a college education was likely to impact their post-secondary education plans. Both parents and students from more affluent households were significantly more likely than others to agree that a college education provides a competitive edge for job opportunities, and that continuing education is a necessity today (17). While only 78 percent of parents without a college education reported that their children will go on to college, 84 percent of college-educated parents expected their children to pursue higher education. Of those parents surveyed in 1999 who had earned two-year technical degrees, only 70 percent expected their children to continue their education. Although the trend seems to be that those parents who have a higher education level expect their children to continue their education past high school more often, there is no statistically significant difference between college-educated and non college-educated parents (18). Eighty-one percent of students with at least one college-educated parent planned to attend college, while only 63 percent of students without a college educated parent had post-secondary education plans (17). In the

Appalachian region of Ohio, parents without college experience reported being less able to help their children with the complex college and financial aid processes. Not having a college education, these parents could not model the benefits of higher education (10).

Approximately two-thirds (64.7%) of high school students in Maine indicated that their families had "a lot" of influence over their future plans. Only 5.4 percent of high school students in Maine indicated that their families had no influence over their future plans (6). Parental support, or a lack thereof, for post-secondary education seems to be very important for children during the decision making process. Parents' encouragement, expectations, and family tradition all appeared as reasons for students' plans after high school (17).

Another Maine study found that the vast majority of Maine's high school students perceived both that their parents think that college is important for them (88.9%), and that their parents care about their success in school (91.4%). Only 3.8 percent of Maine students surveyed indicated that they perceived their parents as not believing in the importance of college for them, and less than three percent of the same group of students felt that their parents did not care about their success in school (5). However, some students who were not in a college preparatory track indicated that their parents did not take the time to talk to them about their plans following high school or "simply didn't care" (17). Students in Vermont were more likely to report that their

parents and relatives supported their plans after high school *if* they were planning on attending a college or university. Those students in Vermont who did not plan on pursuing higher education did not report the same level of support for their plans following graduation from high school (12). The Ohio study reported that high school personnel believed that the lack of parental encouragement is a major barrier to college enrollment. This is unfortunate considering that the same study found that parents have the greatest influence on students' decision to attend college (10). A student in Pennsylvania reported that his parents did not support his decision to attend college: "They just laughed at me.... they were very unsupportive. They didn't make fun of me or anything. It was just the way they thought you couldn't make it" (4).

Students who have at least one parent who is a college graduate are more likely to have consistent and reliable information about college, and more support for their pursuit of a college education. Having been educated themselves, college-educated parents are more likely to understand the sometimes complicated college and financial aid application process. Children of these parents have a potential advantage over those students whose family has no or limited college experience.

4. Education Systems and Communities

While it is clear that some students may not be sufficiently prepared academically for college, it is unclear how much of this may be

attributed to problems in the education system and how much should be attributed to students' own conscious decision. If the resources and opportunities to learn are available in the public schools, students may excel and be prepared for post-secondary opportunities. Unfortunately, this is not always the case. It appears that the school system many times may be creating barriers for students in their pursuit of a higher education.

In some cases there may be a lack of support on the part of school personnel for students to attend higher education. One study in Maine found that while 73.3 percent of Maine's 9th-12th grade students feel that their teachers expect them to succeed, 7.6 percent felt that their teachers did not expect them to succeed, and another 19.1 percent stated that they did not know what their teachers expected of them. While it is troubling that nearly eight percent of Maine's high school students feel that their teachers do not expect them to succeed, it is equally troubling that nearly twenty percent of high school students in Maine do not know how their teachers feel about them. With what seems to be a lack of connection between some teachers and their students, it is alarming that many students perceive school to have a great deal of influence over their decisions about the future. Over two-thirds (62.4%) of the students in the Maine Aspirations Benchmark study reported that school had "a lot" of influence over their future plans. The same study found that while 65.7 percent of Maine high school students indicated that their teachers

help them to succeed, 16.4 percent either disagreed or strongly disagreed that their teachers help them to succeed, and another 17.9 percent did not know. When asked if their teachers praised them for trying their best, 21.5 percent of all Maine 9th to 12th grade students surveyed disagreed or strongly disagreed, while another 15.9 percent did not know. A substantial percentage of the same group of students (15.1%) indicated that they felt that their teachers did not care about their success in class and, in what seems to be a troubling trend, 25.1 percent stated that they did not know if their teachers cared about their success in class. (5).

With so many Maine students reporting what seems to be a lack of a personal connection with their teachers, it is highly probable that some students in Maine are not receiving the encouragement, support, and the information they need in order to make the necessary decisions that will determine their future. The Maine Aspirations Benchmarking Study found that 26.2 percent of male high school students and 14.6 percent of female students surveyed felt that they did not need to go to college to get a good job (5). Research reported by Silvernail indicates that males with bachelor's degrees earn 52 percent more than those males with only a high school degree. The disparity is even greater for females, where women with bachelor's degrees earn 86 percent more than those women with only a high school degree (23). With this in mind, it is of great concern that so many of Maine's students do not seem to see the value of

higher education, and that our schools may be contributing to this perception.

Studies at the national level show similar results as those found among Maine students. Students in Vermont reported that teachers had different expectations of their students depending on which academic track the students were in. When compared to those who did not have college aspirations in Vermont, aspirers were more likely to report that guidance counselors provided the information necessary about which courses were needed in order to meet college admission requirements. These same students (aspirers) reported that teachers, school administrators, and guidance counselors *did not* influence their postsecondary plans, but that school personnel *did* support the plans they had made (12). In Ohio, high school staff reported that they did not feel that the majority of their students were prepared for college, although they also reported that most of them should go to college. Participating Ohio school staff were less likely to encourage a post-secondary education for those they did not see as capable of succeeding (10).

A quote from a student in Pennsylvania helps to illustrate the problem of a lack of communication between school staff and students in regards to students' plans after high school. A woman reported:

"I can only remember two 2-minute meetings with counselors. 'What are you doing? Are you going to go to college? O.K., you're

fine.' I was doing O.K. but maybe a little push would have been needed" (4).

This 31-year-old woman obviously needed a bit more encouragement and support from her school counselors because it took her thirteen years to begin her college education.

A Maine parent also discussed the importance of teachers in a student's life and in developing a lifetime enjoyment of learning:

> **"I think it all depends on the moral support they get in school too, through teachers and everybody – teachers giving them self-confidence, making it likable to go to school. I think that will help a lot. It makes a big difference" (17).**

One can assume that those students who find school enjoyable and supportive are more likely to continue their education.

In some cases, students are forced to make the decision of whether they will go to college or will go into a general preparation or vocational track early in their schooling years, in their middle school or early high school years. For such students, being in a non-college track can be a significant barrier to further education because the curriculum in such programs is often less difficult than college preparation classes. A Pennsylvania student who was in the vocational track in high school made the following comment about her experience in a vocational track:

> **"I knew I didn't have the background (for college). All the classes were just general. I felt like I wasn't getting enough.... a lot of**

teachers think you are not as smart as the other kids…. Vo-Tech students should be treated like all other students and given a chance" (4).

Her experience is important because in Pennsylvania of the 25 to 33 percent of the overall student population who entered the vocational track in 9th grade, only 5 percent eventually attend college (4).

Much like the student from Pennsylvania, a parent in Maine reported that his or her step-daughter also felt like she was treated differently than college-bound students because she had chosen a different path:

"…she has always been interested in hair design, but [she] always felt somewhat inferior because she was interested in hair design and not interested in going on to college. So when she didn't take interest in all the academic subjects and didn't seem to have the spark that the other kids had, she did feel that she was sort of discriminated against" (18).

Another Maine parent expressed similar concerns:

"These kids now, from fifth grade onward, if you haven't decided by fifth grade that you are going to college, you're already on the outside. …they've already pigeon-holed you. This is a kid who is going to be a voc-ed student, this is a kid who is going to work at McDonalds, and these kids are going to go to Harvard or Berkeley" (17).

Turning to another component of the education system, the impact of peers on students' higher education aspirations is less clear then one might expect. Vermont students who chose to attend college reported that personal relationships would not influence their decision to leave their communities in order to seek higher education and employment following graduation from college. They also reported that, while their boyfriend or girlfriend supported their decision to attend college, they did not influence the students' plans after high school. When one considers why it might appear to be the case in Vermont that peers have little influence over other students' post-secondary plans, it is important to note that the vast majority of college aspirers also have friends that aspire to higher education (12).

The results of peer influence in Maine also appear to be somewhat mixed in nature. According to the Maine Aspirations survey, while 43.6 percent of high school students reported that their friends influenced their plans for the future "a lot," a similar percent (42.8%) indicated that peers only have "a little" influence. Only 10.7 percent reported that their peers had no influence over their plans after high school (5). The FAME study in Maine found that while 46 percent of the parents felt that their childrens' peers would increase their likelihood of attending college, a significantly lower percentage of students (37%) felt that their peers would have the same impact on them. Less than half of the parents and over half of the students reported that students' peers would have no

impact on their post-secondary plans. And less than ten percent of both groups felt that peers would decrease a student's chance of attending college (17). Again it is important to note that the majority of the students in both Maine studies planned on attending a college or university as did their peers. From the data, it is unclear how peers influence or do not influence post-high school plans for students who either do not have plans on pursuing a post-secondary degree or are unsure of their plans.

Thus, students may face barriers in the educational system that inhibit their chances of attending a college or university. Inadequate academic preparation may be one of the greatest barriers that students may face, some students may encounter a lack of support for their plans after high school on the part of school personnel, or they may be designated as "non-college bound" and may not receive the same quality education as "college bound" students. While the majority of students report a connection and an adequate level of communication with their teachers about higher education, a substantial minority of high school students indicate very little connection and communication with their teachers. It is this minority that is at greatest risk for not attending a college or university.

Community support may also have an impact on student aspirations. Vermont students who planned on attending a college or university not only reported that they had the support of their families

but also that of their community and clergy as well. Those students who did not plan on attending college did not report the same level of support for their decision (12). A study from Ohio reported that demographic characteristics of a community, such as the education level and SES of the population, may influence the level of participation in higher education by setting "precedents" for children in the community (10). Those communities that, overall, have a lower level of educational attainment, have a difficult time promoting the benefits of higher education.

Communities may have a profound impact on a student's choice to pursue or not to pursue higher education. Some communities show greater support for continuing education than others. Students from communities that support education are more likely to pursue higher education. For some students, a community may decrease their chance of attending a college or university.

Closing Comments

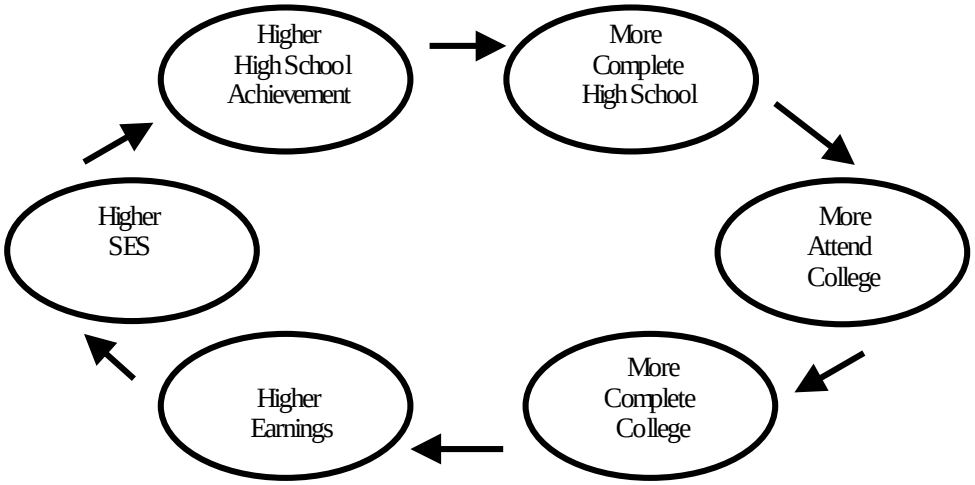
In summary, students may face many barriers in their attempts to pursue higher education. Post-secondary education is more expensive than ever before and the majority of higher education financing is now in the form of loans with the end result that many students are faced with the burden of large amounts of debt upon graduation from college. While financing higher education is of great concern for some students and their families, many may not have accurate information about college

costs and financial aid programs available to them. Students who are not prepared academically face great challenges when applying to and succeeding in post-secondary institutions. Students whose parents have limited exposure to higher education may face difficulties because a college education, while not actively discouraged, may not be considered an option for them. The educational system may also inhibit students' aspirations. Some students have limited support from school personnel when it comes to making choices about their future. Students who are tracked into non-college bound programs in schools may or may not receive the academic preparation necessary for admission to and success in college. The evidence surrounding peer influence on post-secondary aspirations is not entirely clear. On-the-one-hand, the majority of students report that their peers have very little influence on their plans; however, most of these students' peers are also planning on attending college. Likewise, community impact on students' aspirations is difficult to determine from the research. Any impact that a community has on student aspirations is likely to be systemic in nature and difficult to isolate from familial and educational influences.

What is clear is that familial socio-economic status (SES) and income play a critical role in higher education. In fact, it may be characterized as a SES cycle. As shown in Figure 1 on the next page, children coming from higher SES families achieve more in high school, and more attend college. More of these children complete college, enter

higher paying careers, and provide a higher SES for their children – who in turn achieve more in high school, and so on. The key question facing Maine policy makers, communities and organizations is how to help more children break into this cycle.

Figure 1
Socio-Economic Status (SES) Cycle



One final note. It would be remiss on our part if we did not make a comment about college persistence. As Mortenson says:

> **To complete a college degree, a student must apply to college – to be in the game, the game to use the baseball metaphor. If he or she gets a hit or walks to first base (access) there arises a real chance of eventually scoring (graduation). But three bases or years of college remain. Getting from first to second base (persistence), like getting from the first to the second year of college is tough. Not all who get to first base make it to second (dropout),**

and unless the player reaches second base there is not chance of ever scoring a run (21).

Helping students overcome barriers to attending college is only part of the battle. Children from families with high incomes are 8 to 10 times more likely to complete college than children from middle and lower income levels. There is a considerable body of research on what factors and strategies influence college persistence. Thus, it is also important for Maine policy makers and post-secondary education officials to implement strategies that will lead to greater persistence and graduation rates for Maine students.

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