

Increasing postsecondary enrollments in Maine: Changes needed in higher education policies

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Why does Maine rank so low in higher education participation? What factors may be influencing whether Maine citizens pursue education beyond high school? Much of the debate to answer these questions has focused on students and described the problem as a lack of aspirations. David Silvernail provides another look at this issue. While student aspirations are important, Silvernail suggests that factors related to Maine's higher education system also may contribute to the problem of low enrollment. He compares Maine to six peer states and finds that among a number of factors like cost and program accessibility, Maine ranks poorly. He concludes that a part of the solution lies in changes to higher education and offers his perspective on what changes might make a difference.

Today the evidence is fairly clear that individuals benefit from pursuing higher education. U.S. Department of Commerce information (Smith et al, 1997) indicates that males with a bachelor's degree or higher earn 52 percent more than males with a high school degree, and female college graduates earn 86 percent more than their high school graduate counterparts. And these higher earnings improve not only the economic, physical, and social well-being of individuals, but also contribute to the overall economic and social well-being of the state.

Unfortunately, Maine continues to lag behind much of the nation in the percentage of its citizens who pursue postsecondary education. According to the National Center for Educational Statistics (NCES), Maine ranks forty-seventh nationally in the percentage of its population enrolled in higher education (Smith and Hoffman, 1995). And in a comparative analysis of state higher education systems, Halstead (1996) reports that Maine ranks forty-ninth in student participation in public higher education.

Why does Maine rank so low in higher education participation? What are some of the factors that may be influencing whether Maine citizens pursue education beyond high school? This article explores answers to these questions, first by briefly examining what the national statistics do and do not tell us about Maine. Second, some of the most recent information available on aspirations of Maine's youth is discussed. Third, characteristics of postsecondary participation rates in Maine and other higher education factors are explored by comparing Maine with six states that are demographically similar. Finally, several changes in higher education policy are suggested, changes that would benefit from more systematic exploration and debate in the coming years.

NATIONAL STATISTICS ON MAINE

What does the NCES ranking tell us about Maine participation in higher education? Participation in this case is defined by NCES as the percentage of the state's population enrolled in higher education. More precisely, participation is defined as the total number of students enrolled for the fall semester in any two- or four-year postsecondary institution within the state, divided by

the total population of the state. For the Fall 1993 semester, the reported postsecondary enrollment in Maine was approximately 56,300, or 4.5 percent of the state's population according to the 1990 census. This is a full percentage point below the national average, and higher than the percentage in only three other states; Georgia, New Jersey, and Arkansas. To reach the national average, an additional 12,500 Maine citizens would have to enroll in postsecondary courses.

Although this percentage is low, caution should be exercised in interpreting the NCES statistic. It includes non-Mainers who are attending Maine colleges and universities, a group that makes up approximately 12 percent of the first-time freshman class in Maine's public colleges and universities. More importantly, it includes only students enrolled within the state of Maine. It excludes Maine citizens who are attending postsecondary institutions outside of Maine. In the case of 18-year-olds, this is a significant number. According to state Department of Education information, in 1995 approximately 53 percent of Maine's high school seniors pursuing a college degree beginning in the fall after graduation enrolled in colleges and universities outside of Maine. The Halstead ranking has the same limitations, plus an additional one. It includes only students enrolled in the state's public institutions, not students attending private colleges in Maine. Thus, while national rankings provide some useful information about higher education participation in Maine, they provide an imprecise picture of the percentage of Maine citizens who choose to begin pursuing postsecondary educational opportunities at the undergraduate (two- or four-year) and advanced (postbaccalaureate) degree levels in any given year.

Given the limitations of these two national rankings, do we know precisely what percentage of Maine citizens choose to enter higher education for the first time in any given year, either in undergraduate or graduate programs and either within or outside Maine? Unfortunately, the answer is no, not precisely. It appears the rate is approximately 50 percent for Maine's 18-year-olds, meaning about half of Maine's graduating high school seniors actually enroll in some type of college or university somewhere within the United States in the fall after graduation. Identifying the number of Maine citizens starting advanced degrees beyond the bachelor's in any single year is even more difficult. We know that approximately 10.5 percent of total fall enrollments within the state are advanced degree students, a percentage that places Maine twentieth among the fifty states and about 3 percent less than the national average. But again, this only includes graduate students enrolled within Maine, thereby excluding Maine citizens pursuing advanced degrees in other states. Hence, the information we have on Maine's first-time participation rates in higher education is, at best, imprecise and incomplete. However, most would agree that Maine's postsecondary enrollment rate is less than what is needed to prepare Maine's citizens for new economic opportunities in the 21st century. To explore why it is low, first let's examine what we do know about the aspirations of the state's youth.

STUDENT ASPIRATIONS

Low aspirations often are mentioned as a major reason for Maine's lower participation rates. Yet available evidence suggests it may be more than just low aspirations, at least for Maine's youth. We do not know how many working adults in Maine wish to pursue initial or advanced postsecondary degrees, but, clearly Maine's youth intend to pursue higher education opportunities. When asked recently on a statewide survey about their plans, an overwhelming majority of all Maine eleventh graders indicated they were going to participate in postsecondary

education programs (McCabe, Beaudry, and Silvernail, 1997). As shown in Table 1, more than 70 percent of Maine's eleventh graders indicated they intended to enroll in two- or four-year colleges and another 10 percent in vocational schools. Only 9 percent said they planned to move into the work force full-time immediately upon graduation from high school.

Table 1: Future Plans of Maine Eleventh-Grade Students

Postsecondary Plans	Percentage of Students
Four-year college	63%
Two-year college	9%
Vocational school	10%
Armed services	6%
Full-time job	9%

Many of Maine's youth also intend to pursue more advanced degrees. Table 2 reports the degree-level goals of Maine students who took the Scholastic Assessment Tests (SAT) in 1985 and 1995 (College Board, 1996). As may be seen from the data, the percentage of SAT takers who intend to pursue graduate degrees (master's or doctoral/related) has increased from 29 percent in 1985 to 37 percent in 1995, an 8 percent gain. The actual number of students intending to earn graduate degrees also has increased. Approximately 68 percent of Maine seniors took the SAT in 1995, a 22 percent increase since 1985. Hence, more of Maine's youth aspire to earn advanced degrees in 1995 than did in 1985.

Table 2: Degree-Level Goals of SAT Takers

Goal	1985 Percentage	1995 Percentage
Certificate program	6	2
Associate degree	5	5
Bachelor's degree	40	31
Master's degree	19	24
Doctoral or related degree	10	13
Other	-	-
Undecided	20	23

Intentions and reality differ, however, as is clear from the enrollment figures described earlier. Only about half of Maine's seniors enroll in two- and four-year programs immediately following high school graduation. Theories abound as to why this is the case, such as that some students are ill-prepared academically to pursue college, some merely delay beginning college, some find they cannot afford to go to school in the foreseeable future, and some choose to become part of

their families' small-town businesses. Other theories suggest that some of Maine's youth are not supported and encouraged by their parents to pursue postsecondary educational opportunities, some see little or no benefits in earning power to be gained by earning a degree, and some fear having to leave their hometown to get a job once they earn the degree. Unfortunately, until recently most of these so-called theories were, at best, only folk wisdom. Now we are beginning to get some concrete evidence, such as recent research conducted by the Finance Authority of Maine (FAME), research by the Maine Development Foundation, and ongoing research by the University of Maine's National Center for Student Aspirations (NCSA). Additionally, NCSA is experiencing some success in working with Maine's youth to raise their aspirations and improve their academic preparation. Much more work still needs to be done, including more detailed systematic studies of how students' aspirations develop and how they are changed or actualized as they leave high school. In addition, we need to systematically collect evidence about the aspirations of Maine's working adults. But it is equally important to examine other factors that may be influencing postsecondary participation by Maine's citizens, factors related to public higher education policies.

When examining higher education in Maine, the tendency is to compare Maine with other New England states, particularly New Hampshire and Vermont. In some areas this is appropriate, but, as pointed out in a 1996 Rand study of Maine's education and human resources systems, factors that influence pre-college academic performance of students are considerably different in Maine than in other New England states. Those factors include parental education levels, family size, family income, and ethnicity. Using multiple regression procedures and residual score analysis, Rand concluded that six states are more similar to Maine relative to these factors than New Hampshire or Vermont. Research has shown that these same factors are related to post-secondary participation and completion rates. Thus, the six states may be considered an appropriate group to examine when comparing Maine to other states. These six states are Idaho, Iowa, Montana, Nebraska, North Dakota, and Wyoming.

PUBLIC HIGHER EDUCATION CHARACTERISTICS

A factor often mentioned as a barrier to pursuing higher education is cost. In fact, in the 1997 FAME study, more than 40 percent of the parents and a third of the students indicated that a lack of sufficient funds may cause them to change their postsecondary education plans. Some higher education cost characteristics of the six comparable states and Maine are presented in Table 3. The evidence in the table suggests that cost could be a factor influencing higher education participation. According to Hovey and Hovey (1997), Maine's average tuition is \$3,474 per year, a figure that ranks Maine fourteenth in the nation in average tuition costs. This tuition rate is 57 percent higher than the six state average, a figure that, in part, may be attributed to differences in the cost of living and services in Maine as compared to the six states. But more of Maine's higher education revenues, 22.4 percent, come from tuition as compared to the six state average of 14.1 percent, and the impact of these tuition costs on individuals is particularly striking. The availability of financial aid may be used to defray or defer tuition costs, but tuition costs still equal approximately 17 percent of the average per capita income in Maine and the expenses associated with living on campus while attending college are equal to 40 percent of the average per capita income. These percentages are substantially higher than in any of the six comparable states. Thus, it appears reasonable to assume that the cost of pursuing higher education in Maine may be an important factor influencing participation rates in Maine.

Table 3: Higher Education Cost Characteristics

	ME	ID	IA	MT	NE	ND	WY
Average tuition	\$3,474	\$1,892	\$2,565	\$2,387	\$2,182	\$2,248	\$2,005
Tuition as percentage of higher education revenues	22.4%	13.8%	14.3%	13.5%	12.7%	18.4%	11.6%
Average four-year public college tuition as percentage of per capita income	16.7%	8.5%	12.8%	10.9%	9.8%	12.4%	8.4%
Average four-year public college costs as percentage of per capita income	40.1%	28.4%	29.7%	32.5%	24.9%	30.9%	24.8%

Are there other differences in higher education between Maine and the other six states that suggest factors that may be influencing enrollment in higher education? Table 4 presents some other facts about Maine and the six comparison states.

Table 4: Higher Education Program and Student Characteristics

Characteristic	ME	ID	IA	MT	NE	ND	WY
Ranking of enrollment as percentage of state population	47th	28th	14th	42nd	3rd	9th	8th
Enrollment as percentage of state population	4.5%	5.3%	6.1%	4.7%	7.2%	6.3%	6.5%
Percentage of high school seniors starting college anywhere	48.9%	48.4%	61.5%	53.7%	60.2%	67.8%	52.9%
Percentage of high school seniors starting college in public instate institutions	22.0%	30.1%	41.3%	33.9%	40.4%	49.4%	38.8%
Ratio of first-time, full-time college students per 100 18-year-olds counted at location of institution	43.4	57.9	66.7	45.8	55.1	74.3	72.7
Ratio of first-time, full-time college students per 100 18-year-olds counted at students' state of residence	50.4	43.4	56.9	49.7	55.2	57.6	79.8
Percentage of public college students in two-year institutions	13.2%	12.1%	32.5%	9.9%	31.4%	20.1%	58.6%
Percentage of public college students in advanced degree courses or programs	9.9%	13.8%	12.9%	10.1%	12.2%	8.1%	9.9%

One of the first facts noticeable in the table is that all six states rank higher in participation rates than Maine, according to the NCES definition of participation. The percentages are substantially higher for four of the six states: Nebraska, Wyoming, North Dakota, and Iowa. The only state similar to Maine is Montana. Five of the six states also have a higher percentage of their high school seniors starting college somewhere, and all six have a higher percentage than Maine of its seniors starting college in public instate institutions. Thus, all six are doing a better job than Maine of getting their seniors to pursue college upon graduation from high school. Three of the six appear to be particularly successful in this area. More than 60 percent of the seniors in Iowa, Nebraska, and North Dakota start college somewhere, and more than 40 percent of these seniors choose to start college in their home state. Why is this the case? The information in the table does not provide us clear, definitive answers, but it does suggest some factors, in addition to cost, that may influence participation rates.

One factor may be the percentage of students enrolled in public two-year colleges in these three states. In the cases of Iowa and Nebraska, nearly a third of all higher education students are enrolled in two-year colleges. In North Dakota, one in five students enrolled in higher education is enrolled in a two-year program. The percentage is more than 50 percent for Wyoming, but in this case seven of the eight public institutions in the state are two-year colleges. The state has only one public university that offers both baccalaureate and graduate degrees. This is not the case for the states of Iowa, Nebraska, and North Dakota. Even with several four-year options available in public institutions, a large percentage of students in these states are enrolled in associate degree programs. Why is this the case? Are two-year programs less expensive in these states? Are there more two-year programs and colleges available to state residents? Tuition is somewhat cheaper. Public two-year college tuition costs less than 8 percent of the average per capita income in Iowa and North Dakota, and less than 6 percent in Nebraska. In contrast, two-year tuition cost is more than 11.5 percent of per capita income in Maine.

In the case of program availability, the numbers are mixed. Two of the states appear to have more programs, or at least more colleges, available to state residents. North Dakota has the equivalent of one college for every 63,000 residents, and Nebraska has one for every 84,000 residents. However, Iowa, the state with the largest percentage of its higher education enrollment in two-year programs, has the equivalent of one college per 115,000 residents, a ratio only slightly higher than in Maine.

A closer examination of the two-year institutions in these three states does, nonetheless, suggest one major difference between them and Maine's two-year colleges. Only about half of Maine's colleges have transfer associate degrees -- degrees that allow students to transfer into four-year degree programs, bringing with them their associate degrees as equivalent to the first two years of the baccalaureate program. In the cases of Iowa, Nebraska, and North Dakota, virtually all their two-year public colleges have transfer associate degrees. It is easier for students in these states to gain accessibility with credit to four-year degree programs upon completion of their associate degrees.

A second factor that may influence overall participation rates in at least two of the three states is the percentage of students pursuing advanced degrees. Iowa and Nebraska both have percentages considerably higher than Maine. Again, like participation rates in two-year programs, advanced degree program enrollments may be related to accessibility. In the three states with the highest percentage of students enrolled in advanced programs, the percentage of its state institutions

offering advanced degrees is substantially higher than in the four other states, including Maine. Approximately 45 percent or more of the state institutions in Idaho, Iowa, and Nebraska offer advanced degrees, compared to 30 percent or less in Montana, North Dakota, Wyoming, and Maine. And in the cases of Iowa and Nebraska, more of their higher education institutions are authorized to offer doctoral programs as compared to Maine and the other four comparison states.

Program quality and reputation also may influence participation rates, especially at the advanced degree levels. The three states with the highest percentage of total enrollments in post-baccalaureate programs have public institutions known for the quality of their programs. For instance, the University of Iowa is rated as having one of the top fine arts graduate programs, and is known for its exemplary programs in nursing, health service administration, and school psychology. Nebraska is known for its advanced degree physical education and geography programs. Maine, unfortunately, is not well-known nationally for the reputation of its public university programs.

In addition, student migration rates may be influenced by the quality of programs at both the graduate and undergraduate levels. This is especially significant for Maine. Table 4 reports two ratios related to migration. It reports the ratio of first-time students per 100 18-year-olds counted at the location of the institution (state where institution is located), and the same ratio counted at the students' state of residence. If the first ratio is larger than the second ratio, it means more out-of-state students choose to attend universities within the state than instate residents choose to attend universities outside of the state. In this case, the state is an importer of higher education students. As may be seen from the table, Maine is a substantial exporter state as compared to the other six states, particularly Iowa and North Dakota. Program quality and reputation are major factors in determining if a state is an importer or exporter of students. Cost is also a factor. Full-time nonresident tuition in Iowa and North Dakota is 25 to 50 percent less than in Maine.

DISCUSSION

What does this brief analysis of student aspirations and higher education practices suggest as to areas needing the attention of Maine policy makers? Although not definitive by any stretch of the imagination, the analysis nonetheless suggests we may very well need a two-pronged strategy for increasing higher education participation in the state: one strategy for increasing aspirations and one for changes in higher education policies.

We are far from understanding how students acquire and solidify their future aspirations. We have some evidence that many of Maine's youth intend to pursue higher education opportunities, but far fewer actually earn postsecondary degrees. As mentioned earlier, continued work with our youth like that of the Maine Development Foundation and the National Center for Student Aspirations is needed desperately. But in addition, research is needed regarding older Maine citizens. Do they aspire to earn more advanced degrees? If so, what are the barriers they encounter in pursuing advanced education and training?

Increasing the aspirations of Maine's citizens, both young and old, is important, but several areas of public higher education policy also need attention. One area is the cost of higher education. Clearly, the cost to individuals for pursuing postsecondary degrees in Maine is considerably

higher than in many comparable states. Many citizens cannot afford to spend one-fifth or more of their disposable income on higher education. Ways need to be found for reducing higher education costs.

Costs may be reduced in a number of ways. One way to cut the cost for individuals is to increase the state's subsidy of Maine's public institutions. Higher postsecondary funding levels reduce the need to raise tuition rates to cover the cost of education programs. Unfortunately, just the opposite scenario has been occurring in Maine during the past decade. State subsidies, while substantial in dollar amounts, have not kept up with program costs. In the last seven years, the state's share of the university system's budget has declined from approximately 72 percent to 61 percent. As a result, the university system has had to increase tuition rates. Recent actions by the state Legislature to increase the university budget is a hopeful sign, but still the system has had to increase tuition to cover program costs. Significant increases over several years will be needed to bring about real reductions in the cost for Maine's citizens to participate more in higher education.

A second way to reduce costs, and one discussed periodically in hushed tones, is to reduce the number of campuses in the University of Maine System. Up to now, Maine policy makers have chosen to provide geographic access to higher education by maintaining campuses in some fairly sparsely populated regions of the state. In so doing, it has traded off certain cost efficiencies for greater access. As Duchesneau and Wihry (1997) so aptly put it in their analysis of higher education finance trends:

When a state chooses to have a large number of public institutions relative to its population, it chooses, de facto, to have relatively small institutions and relatively high expenditures per student for a given level of educational quality. With stable state appropriations, this means higher tuition charges that limit access for lower income families and individuals, (p. 152)

In theory, by reducing the number of campuses, the funds saved could be used to offset systemwide costs, thereby reducing tuition rates on the remaining campuses. This may be true, but it is important to recognize that these regional campuses are not just educational institutions. They are very important to the economic development of these regions. They are major employers. Thus, closing some of these campuses may not only have an impact on educational access, but also on the economic and social well-being of several regions in the state.

This does not mean cost savings may not be found in a university system of regional campuses. Each campus attempts to provide a complete package of services and programs offered by traditional four-year colleges and universities. However, it's time to re-examine if each of these campuses should be all things to all people. Two areas in which savings can be realized are in administrative structures and programming. For example, full administrative and management staffs are not necessary at all the regional campuses, which in some cases are in relatively close geographic proximity. This alone would not result in major cost savings, but it would contribute in a meaningful way over time to reducing educational costs.

Substantial savings, on the other hand, may be found in the programming area -- more precisely, in reducing the number of programs offered on each of the regional campuses. Each campus offers a fairly complete complement of liberal arts programs. However, because of low enrollments, many of these programs are very costly. An alternative would be to have different

campuses specialize in different programs. Then each campus could be responsible for delivering its specialized programs via instructional television and various electronic technologies to other regional campuses. This could result in considerable savings while maintaining regional access to a wide variety of undergraduate educational programs.

Another area of education policy needing attention is two-year programs. It is time to reconsider the development of a more comprehensive community college system in the state. There are a limited number of traditional two-year liberal arts and professional degree programs available in the state, and even fewer that are transferable to four-year degree programs. The availability of these types of programs is important because they not only expand the program options for two-year terminal degrees, but also provide an avenue for students to continue pursuing more advanced degrees if they choose to in the future. Like many of the other strategies, developing a community college system will require a significant investment of new resources. However, much of the needed infrastructure for such a system may already exist in the state's technical college system. Expanding the mission of this system, and investing the resources needed to expand programming on these regional campuses, should be given serious consideration as a way of increasing participation in two-year terminal degree programs and transfer programs.

A third area of education policy that needs attention is program availability and accessibility at the graduate level. On one hand, access to baccalaureate programs is currently available on each of the regional campuses. Yet regional access to advanced degree programs is severely limited in the state. For example, within the University of Maine System only two institutions are authorized to offer master's-level degree programs, and only one may offer doctoral-level programs (with the exception of one program). Furthermore, relative to those in many of our comparable states Maine citizens wishing to pursue advanced study can do so in a limited number of areas. More programs are needed and these will require the investment of substantial new resources. But developing graduate programs on each of the individual regional campuses is not the answer. The cost would be prohibitive. Instead, the university system needs to put in place strategies for increasing access to existing and new degree programs. Two strategies with which the university system has some experience and success are mobile graduate programs and instructional television. Mobile graduate programs are complete degree programs that are moved into a region of the state for a specified period of time to meet higher education needs. Once needs are met, the program may be moved to another region. This strategy increases access and availability to advanced degrees, uses limited faculty resources wisely, and saves money by not building permanent program structures. However, it is important to note that even these mobile programs have additional costs. They are less expensive than permanent infrastructures but still can be a drain on the existing resources of the campus delivering the mobile program. Incentives and additional financial support are needed to make this a regular, viable strategy to provide graduate programming for geographically place-bound citizens.

The same is true for the expanded use of instructional television and other distance learning technologies to deliver graduate programming statewide. If used wisely, these electronic media can be valuable tools for providing access to quality instruction and advanced study. But high-quality distance learning technologies are not cheap, especially instructional television. It, too, can be a drain on existing resources, both in terms of funds and faculty time, for the campuses delivering the programs and courses over television. In addition, instructional television is most cost-effective with large enrollments in high-demand programs. The relatively small population base from which to draw in Maine suggests that increasing accessibility by instructional

television only within the geographic confines of the state will not be cheap. Broadcasting Maine's instructional television programs beyond the state's geographic boundary is one way to reduce these costs. A second strategy is for the state to develop the infrastructure and policies needed to encourage out-of-state institutions with instructional television systems to deliver degree programs to Maine.

Last, and by no means least, the development of high-quality, exemplary programs at all degree levels needs to be considered. The reputations of exemplary, high-quality programs attract students -- resident students and out-of-state students. These programs encourage state residents to remain in state rather than enroll in programs in other states. And these high-quality programs are attractive to out-of-state students, students who pay higher tuition rates. Maine policy makers must decide how important it is to increase enrollments by retaining more state resident students as well as importing students from other states. If this is deemed important, the public universities and colleges must invest the resources needed to develop exemplary programs. Programs targeted for quality enhancement will have to be selected very carefully, and some lower-quality, low-enrollment programs would need to be phased out of existence in order to fund the program enhancements. However, before it is embarked upon, this strategy needs considerable analysis. Maine competes for students with a large number of institutions in New England -- many very prestigious, and many with high-quality programs. To compete effectively in this market will require substantial directing or redirecting of resources.

An alternate strategy, one it appears Maine may have adopted, albeit somewhat inadvertently, is to rely on out-of-state institutions to educate Maine's youth. Presently, about half of all graduating high school seniors leave the state to pursue higher education. The state may consciously choose to support this practice by not developing competitive, high-quality programs within the state, but the strategy is not without its costs. Students who receive their college education in other states are more likely to live and work in those states after graduation. An incentive plan is needed to encourage these students to return to Maine once they have obtained their postsecondary degrees. Such a plan should involve the state in underwriting low-cost educational loans that are partially forgiven if the student returns to live and work in Maine for a specified time period.

CONCLUSION

Uncovering why more Maine citizens are not pursuing higher education opportunities is not an easy task. Neither is the task of identifying ways to increase participation rates. Some possible explanations and some suggested solutions have been discussed in this article. It is too early to know which of these, as well as others not discussed here, will provide the needed answers. But it is definitely not too early to explore these in more detail, to discuss and debate them openly, and to begin developing a comprehensive long-range plan for increasing aspirations and altering public higher education policies and practices so more Maine citizens may achieve their aspirations. Such a plan is needed as we enter a new century, not only for the well-being of Maine's individual citizens, but for the entire state.

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