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ABSTRACT

Most states fund their community colleges on a flat grant per pupil basis, though some allocate on an overall appropriation. Variations in district wealth are generally equalized by either full state support or state equalization of local tax-paying ability. Four models of state support are currently in operation: (1) negotiation of state support for community colleges on an annual or bi-annual basis, following no set formula; (2) a unit rate formula based on a workload unit such as credit hours or full-time equivalent (FTE) enrollment; (3) minimum foundation plans; and (4) cost-based program support, whereby state payment varies with program costs. A study was conducted to examine the relationship between state funding models and trends in national FTE enrollment rates and tuition and fees during the 1980's. The data show that the percent change per year in state appropriations has increased with the percent change per year in FTE enrollments. In response to the rising costs of operating community colleges and the fact that FTE enrollments do not bring in enough money to the college, tuition and fees also increased steadily. In turn, changes in tuition and fee policies affect students' willingness to enroll in community colleges. (AC)

A Look at State Financing as it Relates to Enrollment and Tuition Rates of Public Community Colleges

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Running head: A LOOK AT STATE FINANCING AS IT RELATES TO ENROLLMENT AND TUITION RATES

Abstract

The purpose of this study is to examine the effects of national FTE enrollment rates and tuition and fee rates on state appropriations of public community colleges during the 1980-1990 decade. The data shows particularly high positive correlations between year by state appropriations, year by tuition and fees, state appropriations by tuition and fees, and percent change per year for state appropriations by percent change per year for tuition and fees. Further studies must be done on constant dollar cost analyses to determine the required level of state funding for the survival of public community colleges today.

A Look at State Financing as it Relates to Enrollment and Tuition Rates of Public Community Colleges

Historically, the state has been a common denominator in many funding models where the states' sources of funds are usually portrayed as local tax base plus federal support for community colleges. These models, however, emphasized more than the sources of funds. Specifically, the earliest models were funding models, developed to enhance public school financing, but many of the principles inherent in these models were applicable to community colleges. For example, financing community colleges has entailed the acceptance of certain basic criteria:

1. to provide educational programs that meet the needs of the clients, given an open-door policy and programs that range from:
   a. provision of an associate of arts or science degree;
   b. provision of vocational-technical programs leading to a degree or certificate, and covering a wide range of training opportunities;

c. provision of non-degree credit courses and community service activities of both a vocational and a technical nature;
d. provision of remedial programs;
e. provision of general education courses covering mostly liberal studies not requiring a specific major field or occupational choice.

2. to provide counseling services as a necessary prerequisite to meet the needs of the broad range of students and educational interests represented.
3. to allow for equitable distribution of all available funds within the community college system.
4. to promote an equalization of financial support among students.
5. to require equalization of support among disciplines.

Empirically, a survey of community college funding patterns completed by Arney (1969) showed 15 states with state-supported systems and 27 with a combination

of state and local funding (p. 20). Wattenbarger and Mercer (1983) reported that 49 states support one or more community colleges, junior colleges, technical colleges, two-year branches of four-year colleges or universities, or some other similar institutional arrangement at this level of post-secondary education (p. 5).

Most states fund on a flat grant per pupil basis, while some allocate on an overall appropriation. The state's allocation combined with amounts from local property taxes represents the total dollar support for each college. These plans do not, therefore, make allowance for variations among the districts in local tax-paying ability. The flat grant per pupil does have some equalization capacity, since distribution was based on educational need.

The literature highlighted two basic ways of achieving equalization between districts. One was to have full state support, and the other was by state equalization of property tax effort. The net effect of the second approach is to allow all state and local dollars to be available for distribution on the basis of statewide need, as under a fully state-

supported system.

Financial support between disciplines is another major concern of financial planners because cost differentials are known to exist at any institution where a variety of courses were offered. The community college offers courses ranging from the academic through occupational, vocational, developmental, and community services. Hence, the funding for the different types of courses has always been under scrutiny. In order to correct this problem, which becomes acute under any system of flat grants, some states have built in some alternative cost structures. Florida in 1970-1971, for example, funded all occupational programs at a rate of one and one-half times the amount for academic courses (NEFP 1971, p. 51). Michigan in 1970 appropriated $500.00 per college credit full-time equivalent students (FTE), $515.00 per business (FTE), $745.00 for other vocational technical programs, and $800.00 for healthy programs (Appropriations Act, 1970-1971).

The intent of variation in funding models is to ensure that individual colleges are not penalized for

offering high-cost educational programs in important areas of educational need. To this end, Florida's fully state-supported system provides a fair example as the state allocation works on a percentage of total costs basis with adjustments for cost-of-living and changes, federal funds, and student fees.

The theory on financing community colleges includes information on equitable support among students. Equal access and the open-door policies advocated for community colleges focus the question of equitable support for all students. Early literature advocated free tuition (Bogue, 1950; Eells, 1931; Koos, 1925; Wattenbarger, 1961). The American Association of Junior Colleges (AAJC) endorsed tuition free community colleges in 1960, but the 1980s have proved that not only is free tuition improbable, but also increasinag tuition is the true reality. Tuition has been so defined at times in a way that institutions in such states as California and Missouri, can charge registration and other fees while their colleges remain "tuition free." Nonetheless, community colleges have kept their fees low, in keeping with the AACJC (1961)

guideline of keeping tuition below 20 percent of the operational cost per full-time equivalent student.

The most recent theory was provided by Wattenbarger and Starnes (1976) and by Wattenbarger and Mercer (1988). Wattenbarger and Starnes proposed four general models for support, based on surveys on financial plans actually in operation in the United States.

1. State Support. In this model state support for individual colleges is negotiated annually or bi-annually, directly with the legislature or state board, following no set formula. The state would pay a set amount based on a unit rate;
2. Unit-Rate Formula. The formula to be used would be derived from a unit of workload such as credit hours or FTE enrollment;
3. Minimum Foundation Plans. This model is similar to the minimum foundation plans described earlier;
4. Cost-Based Program. This model is a variation of the unit rate approach, however, here the state payment would vary with program costs.

In this study these state financing models for funding public community colleges are considered in conjunction with the trend in tuition and fees at community colleges; since according to the Western Interstate Commission for Higher Education 1982-1983 report (Viehland & Kaufman, 1982), it appears that tuition has a direct bearing on the amount of state appropriations required by the institution or, in some states, the amount of revenue to the state general fund; while, student fees, in contrast, are generally retained by the campus, specifically to fund the activities for wich they are levied (p. 6). As a result of decreases in the college budget and program cuts, and increases in tuition and fees which do not offset the decreases in the college budget, enrollments have in fact declined (Paulsen & Pogue, 1988, p. 281). Presumably, the college's tuition and fees are set high enough to generate, over the long run, the revenue needed to cover costs that are not accounted for in the college budget. However, the literature shows that public community colleges which charge higher tuition and fees are more likely to experience declining

enrollments than those with lower tuition and fees (Puyear, 1987, p. 1). It therefore seems significant to study such patterns, if they can be confirmed.

The primary purpose of this study is to examine the effects of national enrollment rates and tuition and fee rates on state financing costs during the 1980-1990 decade. The analyses will identify and determine the relative impact of the selected factors on state financing costs, enrollment rates and tuition and fee rates. The data treatment will use the following definitions for full-time equivalent enrollments (FTE): "the addition of one-third of part-time students to full-time students" (Loftus, 1982, p. 4); and for tuition and fees: "the basic comprehensive charges that all students are required to pay as a condition of enrollment in the institution in addition to fees charged all students to fund various specified activities and purposes" (Viehland & Kaufman, 1982, p. 5).

Data

Upon comparing the relevant statistics on state appropriations, FTE enrollments and tuition and fees for all public two-year institutions for fiscal years

1980 through 1990 we found that:

- State appropriations and tuition and fees increased steadily.
- Overall state appropriations increased by 66% during the ten-year fiscal period.
- Overall tuition and fees increased by 94% during the ten-year fiscal period.
- FTE enrollments increased relatively by 6% from 1980-1983, decreased steadily by 8% from 1983-1986, and rose once again by 9% from 1986-1990.
- Overall FTE enrollments increased by 12% during the ten-year fiscal period, where the highest increase occurred from 1989-1990. (Source of Data: US Department of Education National Center for Education Statistics (1980-1990). Fall Enrollment in Colleges and Universities. Washington, DC.)

PERCENT CHANGES: 1980-1990

- The greatest percentage change per year occurred for tuition and fees followed by state appropriations and then by FTE enrollments.

As mentioned earlier, although state appropriations and tuition and fees increased steadily in the ten-year

fiscal period, one notices from the graph below (Figure 1) that there was a peak in the percent change per year for tuition and fees in 1983-1984; followed by a peak in the percent change per year for state appropriations in 1984-1985. During this period, 1983-1985, FTE enrollments decreased steadily. After 1985, the percent change per year for state appropriations decreased until 1987 and then rose; while the percent change per year for tuition and fees decreased until 1987, then decreased after 1988, slightly, and finally rose again minimally.

Insert Figure 1 about here

Pearson correlation coefficients for the percent change per year of the three variables show a strong positive correlation (.85) between the percent change per year in FTE enrollments with the percent change per year in state appropriations. This is further evidenced by the graph in Figure 1 approximately, that except for 1983-1986; when percent change per year for state appropriations increased or decreased, a similar change occurred for the percent change per year for

tuition and fees.

CORRELATIONS BETWEEN THE VARIABLES

Pearson correlation coefficients of the three variables show particularly high positive correlations between year by state appropriations (.99); between year by tuition and fees (.99); and between state appropriations by tuition (.98).

REGRESSION EQUATIONS

The regression equation in which tuition and fees is the independent variable and state appropriations is the dependent variable further confirms the high positive correlation (.98) between the two variables:

$$Y_{state} = 6572.4X_{tuit/fees} + 1355241.7$$

There is a small observed significance level (<.00005) associated with the slope (= 6572.4) in the regression equation, which further supports that tuition and fees and state appropriations are linearly related for the ten-year fiscal period of 1980-1990. In particular, an $R^2 = .96$ shows that the given regression model fits the data well, i.e., nearly 96% of the observed variability in state appropriations can be explained by tuition and fees.

If we add FTE enrollment as another independent variable in the model the R^2 = .99 which is a slight increase from the previous R^2 = .96. Particularly, this confirms the weak Pearson correlation between state appropriations and FTE enrollment (.30), and tuition and fees and FTE enrollment (.17). Thus, tuition and fees correlate more highly with state appropriations than with FTE enrollments.

As a result of these correlations one finds that year and state appropriations are found to be linearly correlated (.99); and year and tuition fees are found to be linearly correlated (.99). These relationships could be helpful when one is interested in determining future projections for both state appropriations and tuition and fees to public community colleges.

Results

The data shows that the percent change per year in state appropriations has increased with the percent change per year in FTE enrollments for public community colleges during 1980-1990. However, this increase may not be due to the costs of running the public community college. In response to the rising costs of operating

the public community college, and the fact that FTE enrollments do not bring in enough money to the college, we find, as a result, that tuition and fees are increasing steadily. In return, changes in the institution's tuition and fees policies affect the students' willingness to enroll at the public community college.

Further studies must be done on constant dollar cost analyses to determine the required level of state funding for the public community college's survival.

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Author Notes

This paper does not project the views of the American Association of Community and Junior Colleges.

Figure 1

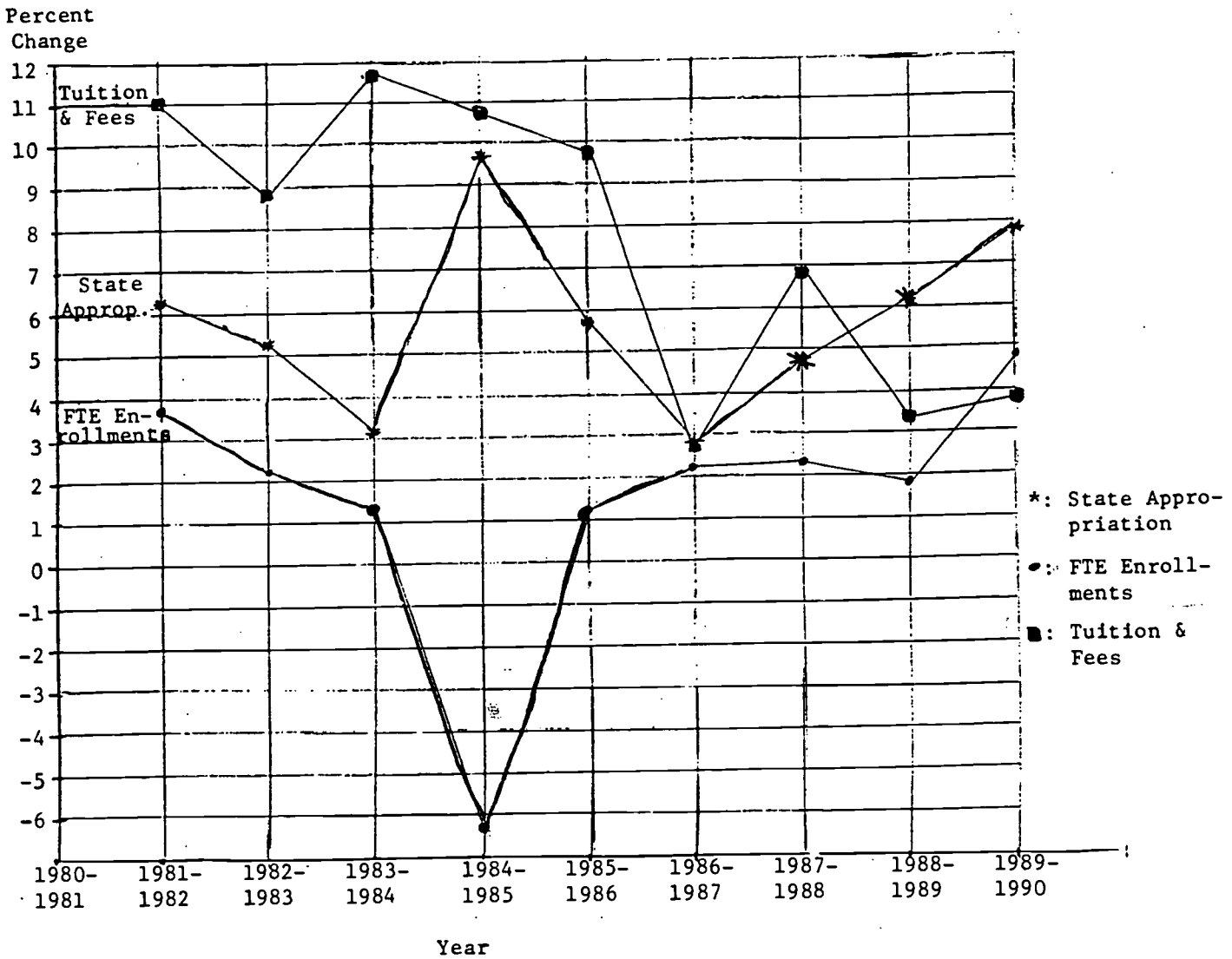
Percent Change
12
11
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
Tuition & Fees
State Approp.
FTE En-rollments
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
Year
*: State Appro-priation
•: FTE Enroll-ments
■: Tuition & Fees

Figure Caption

Figure 1. Percent change per year as a function of year.

Total figures for each of the years 1980-1990 were received by summing the appropriate figures representing state aid to public community colleges or similarly named as indicated above in the manual State Tax Funds for Operating Expenses of Higher Education: 1980=1981, 1981-1982, 1982-1983, 1983-1984, 1984-1985, 1985-1986, 1986-1987, 1987-1988, 1988-1989, 1989-1990: National Association of State Universities and Land-Grant Colleges.

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