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Graduate Students and the Minnesota State Grant Program

Minnesota State Grant Review

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Introduction

The need for an educated and trained workforce has long been recognized as necessary for a healthy and productive economy. Given the broad range of skills, occupations and professions required to support the modern industrial and information economies, the federal and state governments monitor the makeup of the workforce and, if necessary, implement policies and programs designed to shape its composition. Normal market mechanisms usually allocate workers to jobs: wages rise with a shortage of workers in a particular occupation and fall with an oversupply. However, there are times when state and federal governments consider it necessary to influence market forces by providing incentives, such as tax deductions to employers to create certain kinds of jobs, grants to schools to develop training programs, and financial aid to attract students to particular careers.

In Minnesota there is no state-level coordination of education and financial aid policy with the state workforce needs and projections. Individual colleges and universities may be aware of the state's employment projections, but individual departments, campuses and systems are allowed to allocate institutional financial aid as they see fit. This is particularly true in regard to graduate student financial aid. The Department of Employment and Economic Development does not provide state graduate and first profession workforce needs to state colleges and universities, nor do the colleges and universities provide graduate and first professional workforce supply data to DEED.

This report addresses the requirement to "assess the feasibility of expanding the eligibility for state grants to include graduate and first professional students pursuing degree programs deemed to be important to the workforce needs of the state". The content is of this report is broader than this directive and discuses many forms of aid for these students.

The first section reports findings from the current literature on this topic. Section two contains information published by the federal government indicating how graduate and professional students currently pay for their studies. Section three addresses the question of "degree programs deemed to be important to the workforce needs of the state". Section four describes the generic structure of current approaches to incent students into various occupations and improve workforce skills. Section five briefly explains institutional aid programs available at the University of Minnesota and other institutions. Section six describes state level programs at the Health Department. The final section addresses considerations that need to be made to extend the state grant program to these students.

Current Literature: A Brief Review

The current published literature on financial aid for graduate and professional students was evaluated and key findings were identified. This section summarizes four papers in this area.

1. Kenneth E Redd, Financing *Graduate and Professional Education: 2003-2004,* NASFAA Monograph, 2006

- Graduate students generally are 30 years old or older, have a spouse or young children, and consider themselves primarily employees who are attending school part-time to gain new skills for professional advancement or other opportunities.

- Professional students tend to be younger than 30, are unmarried and have no children or other financial responsibilities, are enrolled full-time, and consider their studies to be their first priority.

- Because of these differences, these students should be examined differently by policymakers and the media.

- Even with these differences, most graduate and professional students used loans as the main source for financing their education. More than half of all master's degree candidates and more than 80 percent of those seeking professional degrees received at least one student loan to finance their education in 2003-2004.

- Less than one third of the students in most programs received grants, fellowships, assistantships, or other sources of grant money.

- About half of full-time doctoral and theology students received grants/fellowships, compared with less than one-third of those in law and medical schools.

- And nearly half of full-time doctoral candidates received assistantships, while 45 percent of part-time MBA students were awarded employer-based aid.

2. Susan P Choy, Emily F Cafaldi, *Student Financing of Graduate and First-professional Education, 2003-04: Profiles of students in Selected Degree Programs and Part-Time Students,* NCES Report, 2006

- More than half of all graduate and first-professional students were pursuing master's degrees, most often part time, and about half of all master's degree students were working on degrees in business or education.

- Master's degree students in business and education typically waited a number of years after finishing college before enrolling in graduate school, and about three-fourths of them worked full time while enrolled.

- Many business students received aid from their employers. Master's degree students in fields other than business or education followed a more traditional pattern: they were more likely to enroll full time, less likely to work full time, and more likely to consider themselves primarily students.

- Doctoral students in fields other than education were more likely than master's students to be full-time students and to enroll immediately after earning their bachelor's degree. Most of them received financial aid, often a combination of grants, loans, and assistantships.

- Doctoral students in education were more likely than other doctoral students to delay enrollment after earning a bachelor's degree and to continue to work full time while enrolled.

- First-professional students tended to be younger than master's and doctoral students, to enroll immediately after graduating from college, and to attend full time. They relied heavily on loans to pay for their education.

- About half of all graduate and first-professional students attended exclusively part time. Students in certain fields (notably business and education) and students with work and family responsibilities were especially likely to attend part time. Compared with students who attended exclusively full time, they were more likely to be female, age 30 or older, married with dependents, and white.

- Most were enrolled at the master's level or taking courses but not in a degree program. Most worked full time and considered themselves primarily employees rather than students. They were less likely than full-time students to receive financial aid, but the majority received something, most frequently grant aid (which includes employer aid).

- About one-fourth of them borrowed (even when they were working full time). The average amount borrowed increased with tuition, but it was not systematically related to income.

3. Berkner, L., He, S., Lew, S., Cominole, M., and Siegel, P. *2003–04 National Postsecondary Student Aid Study (NPSAS:04) Student Financial Aid Estimates for 2003–04* (NCES 2005–158), 2005, U.S. Department of Education, National Center for Education Statistics. Washington, D.C.

- About three-fourths (73 percent) of all graduate and first-professional students enrolled in the 2003–04 academic year received some type of financial aid. The average amount of aid received was $15,100.

- Forty-two percent of graduate and first-professional students took out student loans in 2003–04, borrowing an average amount of $16,800. Among students in first professional degree programs, 78 percent took out student loans, borrowing an average amount of $26,400.

- In the 2003–04 academic year, 40 percent of all graduate and first-professional students received grants from institutional, state, federal, or private sources, including employers. The average amount received was $5,700.

- Fifteen percent of graduate and first-professional students received aid from teaching, research, or other graduate assistantships in 2003–04. The average amount received from assistantships was $10,000. Forty-one percent of graduate students in doctoral degree programs held assistantships and received an average amount of $13,300.

- Excluding students holding assistantships, 21 percent of graduate and first-professional students received aid from employers in 2003–04, usually as tuition reimbursements. The average aid amount that they received from employers was $3,000. Among part time students, 26 to 29 percent received aid from employers.

4. Jane Wellman, Accounting *for State Student Aid: How State Policy and Student Aid Connect,* 2002, The Institute for Higher Education Policy

- State policies and accountability strategies for student aid are examined in this report for eleven states: California, Florida, Illinois, Minnesota, New Jersey, New York, Ohio, Texas, Pennsylvania, Vermont and Virginia. These states were selected because they are making some of the largest investments in state-funded aid, and because they represent a cross-section of approaches to the governance and administration of student aid.

- The study found that there was often a disconnection between state economic and education policies, and state financial aid policy: namely, that financial aid policy was not developed in the context of overall state policy. Financial aid linked to workforce development was singled out for particular criticism.

- The report found that: “In many states, new programs are added on an ad hoc basis, as student aid is a favorite target for special interest legislation designed to fund niche purposes, such as getting more students into high demand occupations like teaching and nursing. These small aid programs end up having a political half-life that allows them to survive despite weak or nonexistent evidence of their effectiveness.”

- At the same time, most states are under funding their own goals for need-based grant programs, which are suffering for funding despite recent heavy increases in tuitions.

- The report concludes by recommending that states “avoid special purpose programs.”

Current Estimates of Tuition and Other Prices

The national government produces estimates of prices paid by graduate and first professional students and available aid. The following three tables show this information for various characteristics for 2003-04 for the nation. The first table shows the average annual tuition and fees, total price, amount of aid and net access price for full-time graduate and first-professional students and percentage of all students attending full time, by type of aid and program and institutional characteristics. Table 2 shows the percentage of full-time graduate and first-professional students with aid and the average annual amount of aid for students with aid, by type of aid and program and institutional characteristics. Table 3 shows the average annual tuition and fees, percentage with grants and employer aid, average annual amount of grants and employer aid, net tuition after grants for part-time graduate students, and percentage attending part time, by program and institutional characteristics. This information is based on a national survey. Some of this data is available for the state, but given sample size issues the information it is not as complete as the national figures.

Average annual tuition and fees, total price, amount of aid and net access price for full-time graduate and first-professional students and percentage of all students attending full time, by type of aid and program and institutional characteristics: 2003–04

	Average for full-time students (including unaided students)							
Characteristic	Tuition and fees	Total price[1]	Total aid	Grants	Loans	Assistant-ships and other aid	Net access price (total price minus total aid)	Percent attending full time
Master's degree students								
Total	$11,500	$27,400	$14,500	$2,800	$9,500	$2,200	$13,000	20.6
Degree program								
Business administration (M.B.A.)	16,000	33,500	15,400	2,700	11,600	1,100!	18,100	18.7
Education (any master's)	7,900	22,300	11,500	1,600!	9,000	900!	10,700	11.2
Any other master's degree	11,400	27,200	15,000	3,200	9,100	2,700	12,300	27.2
Selected fields of study								
Humanities	10,500	26,400	15,200	4,100	8,600	2,500	11,200	27.3
Social/behavioral sciences	10,900	27,100	18,800	4,700!	9,700	4,400	8,300	34.2
Life and physical sciences	10,200	25,800	14,900	2,500!	7,000!	5,400!	10,900	22.5
Engineering/computer science/mathematics	12,800	28,100	14,800	5,600	3,700!	5,500	13,300	19.1
Institution type								
Public	7,400	21,900	12,200	2,700	6,300	3,200	9,700	20.7
Private not-for-profit	17,400	34,100	17,700	3,300	13,200	1,200	16,400	19.3
Doctoral degree students								
Total	14,400	33,300	23,400	8,300	7,600	7,500	10,000	48.8
Degree program								
Ph.D. (except in education)	14,900	33,600	24,200	10,800	2,900	10,500	9,400	52.8
Education (any doctorate)[2]	10,700	27,900	14,100	5,100	4,600	4,500	13,700	19.2
Any other doctoral degree[3]	14,000	33,900	23,500	3,900	17,600	2,100	10,400	57.5
Selected fields of study								
Humanities	13,400	30,400	16,700	7,800	2,600	6,300	13,700	39.0
Social/behavioral sciences	15,300	33,600	22,700	8,700	8,000	6,000	10,900	52.3
Life and physical sciences	14,700	34,800	26,100	12,100	2,000!	12,100	8,600	60.2
Engineering/computer science/mathematics	15,400	33,400	25,400	11,600	1,400!	12,400	8,000	51.8
Institution type								
Public	10,000	28,600	21,800	8,100	5,700	8,000	6,800	46.2
Private not-for-profit	20,500	40,200	26,400	8,800	10,300	7,300	13,900	52.3
First-professional degree students								
Total	16,700	36,500	26,900	2,800	23,300	800	9,600	78.1
Degree program								
Medicine (M.D.)	17,100	40,400	31,600	2,900	27,400	1,200	8,800	91.6
Other health science degree	16,400	36,400	27,700	1,800!	25,100	800	8,700	89.7
Law (L.L.B. or J.D.)	17,000	34,700	24,000	3,300	20,200	600	10,700	76.1
Theology (M.Div., M.H.L., B.D.)	9,500!	23,900	11,500	5,000!	6,000!	500!	12,400	22.8
Institution type								
Public	9,800	30,300	23,600	2,200	20,500	800	6,700	88.7
Private not-for-profit	22,600	41,900	29,800	3,300	25,700	800	12,200	70.8

! Interpret data with caution (estimates are unstable).

[1] Total price (also known as the student budget) includes tuition and fees, books and materials, and living expenses.

[2] Ph.D. in education, Ed.D., or any other doctoral degree in which education is the field of study.

[3] Examples include D.B.A. (Doctor of Business Administration), D.F.A. (Doctor of Fine Arts), and D.P.A. (Doctor of Public Administration).

NOTE: Table is limited to students who attended for the full year at only one institution in 2003–04 to keep aid and price data consistent. *Full-time* means enrolled full time (according to the institution's definition) for at least 9 months during the 2003–04 academic year; full-time enrollment does not preclude working as well. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Percentage of full-time graduate and first-professional students with aid and the average annual amount of aid for students with aid, by type of aid and program and institutional characteristics: 2003-04

	Percent				Average (for full-time students with each type of aid)			
Characteristic	Any aid	Grants	Loans	Assistant-ships and other aid	Total aid	Grants	Loans	Assistant-ships and other aid
Master's degree students								
Total	81.0	39.9	57.8	25.9	$17,900	$7,100	$16,400	$8,300
Degree program								
Business administration (M.B.A.)	75.3	38.3	55.6	16.9!	20,400	7,000	20,800	‡
Education (any master's)	72.4	24.9	61.4	12.1!	15,900	6,400	14,700	‡
Any other master's degree	84.6	44.2	57.3	31.8	17,700	7,200	15,800	8,600
Selected fields of study								
Humanities	88.7	52.0	58.0	36.1	17,200	8,000	14,800	6,900
Social/behavioral sciences	90.5	55.8	65.1	47.3	20,700	8,400	14,900	9,300
Life and physical sciences	80.6	30.4!	43.3!	45.3!	18,500	‡	‡	‡
Engineering/computer science/mathematics	85.6	52.8	25.9	53.4	17,300	10,600	‡	10,300
Institution type								
Public	79.2	42.2	48.3	36.3	15,400	6,400	13,100	8,700
Private not-for-profit	83.3	39.1	67.9	16.9	21,300	8,500	19,400	7,200
Doctoral degree students								
Total	92.9	64.7	37.6	53.2	25,100	12,800	20,200	14,100
Degree program								
Ph.D. (except in education)	95.4	74.4	21.3	68.3	25,400	14,500	13,500	15,400
Education (any doctorate)1	79.9	51.4	35.0	41.9	17,700	9,800	13,000	10,800
Any other doctoral degree2	90.6	48.1	70.4	25.7	26,000	8,000	25,000	8,100
Selected fields of study								
Humanities	89.7	68.1	25.7	56.0	18,600	11,400	10,300	11,200
Social/behavioral sciences	93.1	67.0	42.9	48.0	24,400	13,000	18,600	12,600
Life and physical sciences	95.5	78.9	15.8	68.7	27,400	15,300	12,500	17,600
Engineering/computer science/mathematics	97.3	77.7	11.7	78.8	26,100	15,000	11,700	15,700
Institution type								
Public	93.9	69.7	33.5	58.8	23,200	11,600	17,100	13,600
Private not-for-profit	91.1	59.3	41.8	48.7	28,900	14,900	24,500	14,900
First-professional degree students								
Total	92.0	39.7	84.6	15.1	29,300	7,000	27,500	5,500
Degree program								
Medicine (M.D.)	92.0	39.4	84.1	14.7	34,400	7,500	32,600	8,500
Other health science degree	94.0	38.1	87.6	16.9!	29,500	4,600	28,700	4,700!
Law (L.L.B. or J.D.)	91.9	40.0	85.7	14.2	26,200	8,200	23,600	4,000
Theology (M.Div., M.H.L., B.D.)	73.3	53.9!	46.8	11.9!	‡	‡	‡	‡
Institution type								
Public	92.2	42.5	84.3	13.7	25,600	5,300	24,400	5,900
Private not-for-profit	91.8	37.3	85.0	16.2	32,500	8,800	30,200	5,200

! Interpret data with caution (estimates are unstable).

‡ Reporting standards not met.

[1]Ph.D. in education, Ed.D., or any other doctoral degree in which education is the field of study.

[2]Examples include D.B.A. (Doctor of Business Administration), D.F.A. (Doctor of Fine Arts), and D.P.A. (Doctor of Public Administration).

NOTE: Table is limited to students who attended for the full year at only one institution in 2003–04 to keep aid and price data consistent. *Full time* means enrolled full time (according to the institution's definition) for at least 9 months during the 2003–04 academic year; full-time enrollment does not preclude working as well. Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Average annual tuition and fees, percentage with grants and employer aid, average annual amount of grants and employer aid, net tuition after grants for part-time graduate students, and percentage attending part time, by program and institutional characteristics: 2003–04

Characteristic	Average tuition and fees	Percent with grants	Percent with employer aid[1]	Average grants (including unaided students)	Average employer aid[1] (including unaided students)	Net tuition after grants[2] (all part-time students)	Percent attending part time
Master's degree students							
Total	$5,600	41.1	27.9	$1,600	$900	$4,300	44.3
Degree program							
Business administration (M.B.A.)	6,400	58.7	48.7	2,800	2,300	4,200	36.8
Education (any master's)	5,500	36.3	26.3	1,000	500	4,700	52.0
Any other master's degree	5,400	39.3	22.5	1,700	800	4,100	42.3
Selected fields of study							
Humanities	4,900	42.5	18.1	1,800	800!	3,500	46.1
Social/behavioral sciences	4,700	20.8!	10.7!	600!	200!	4,400	40.6
Life and physical sciences	5,700	37.7	13.7!	2,200!	600!	3,800	45.9
Engineering/computer science/mathematics	6,500	43.7	29.9	2,100	900	4,800	48.2
Institution type							
Public	3,700	38.6	24.7	1,300	700	2,800	48.4
Private not-for-profit	8,100	44.5	31.5	1,900	1,100	6,500	42.5
Doctoral degree students							
Total	5,800	48.2	22.7	3,200	800	3,800	32.5
Degree program							
Ph.D. (except in education)	5,500	52.7	17.5	4,200	600	3,100	29.7
Education (any doctorate)[3]	4,800	41.2	27.3	1,700	800	3,600	55.6
Any other doctoral degree[4]	7,700	46.1	29.8	2,700!	1,100!	5,900	24.9
Selected fields of study							
Humanities	5,100	44.3	15.4	3,400	400	3,300	35.8
Social/behavioral sciences	6,700!	46.7	21.2	2,400!	400	5,100	31.7
Life and physical sciences	5,300	73.2	16.6	7,300	600	1,800	25.2
Engineering/computer science/mathematics	7,100	52.1	17.7	4,000	500!	4,600	30.1
Institution type							
Public	4,700	48.4	18.9	3,200	500	3,000	35.3
Private not-for-profit	7,000	43.8	24.1	3,200	1,100	4,800	27.5

! Interpret data with caution (estimates are unstable).

[1] Employer aid is considered a type of grant aid and therefore is included in the estimates for grants as well.

[2] If grants were greater than tuition, net tuition was set to zero. Consequently, average net tuition may be larger than average tuition and fees minus average grants.

[3] Ph.D. in education, Ed.D., or any other doctoral degree in which education is the field of study.

[4] Examples include D.B.A. (Doctor of Business Administration), D.F.A. (Doctor of Fine Arts), and D.P.A. (Doctor of Public Administration).

NOTE: Table is limited to students who attended for the full year at only one institution in 2003–04 to keep aid and price consistent. Too few first-professional students enrolled part time to present their data separately. Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2003–04 National Postsecondary Student Aid Study (NPSAS:04).

Programs Important to the State's Workforce Needs

The legislation requires the agency to identify "degree programs deemed to be important to the workforce needs of the state". This report does not specifically identify particular degree programs. Instead, we rely on occupational demand data produced by the Department of Employment and Economic Development to indicate what occupations that require a graduate or professional degree will be needed in the future.

DEED, in conjunction with the Bureau of Labor Statistics, biannually produces occupational projections for a 10 year period for about 500 different occupations. BLS also attributes educational requirements for these occupations. Significantly, neither DEED nor BLS projects the supply side of the equation; only estimates of demand through a projection of new jobs needed and replacement jobs as people retire from the workforce. The most recent complete report done used a base year of 2004 with projections for 2005-2014 demand. The three tables below show occupational demand by graduate or professional area ranked from highest to lowest. There are a number of provisos attached to these projections that are listed on the DEED and BLS web sites. The three tables below show the top 15 occupations at each educational level sorted by the number of new hires. The occupational label indicates the level of education needed as a minimum to perform the responsibilities of that profession.

Minnesota Employment Projections of 2005-2014 New Hires for Occupations Requiring Doctoral Degrees for Top 15 Occupations

Doctoral Occupation	2004 Employment	New Hires	Percent Change
Vocational Education Teachers, Postsecondary	3,670	1,828	49.8%
Graduate Teaching Assistants	2,657	1,258	47.3%
Medical Scientists, Except Epidemiologists	1,600	952	59.5%
Art, Drama, and Music Teachers, Postsecondary	1,959	927	47.3%
Health Specialties Teachers, Postsecondary	1,686	813	48.2%
Business Teachers, Postsecondary	1,511	744	49.2%
Education Teachers, Postsecondary	1,446	688	47.6%
English Language & Literature Teachers, Postsec.	1,042	501	48.1%
Biological Science Teachers, Postsecondary	786	373	47.5%
Mathematical Science Teachers, Postsecondary	762	359	47.1%
Communications Teachers, Postsecondary	662	321	48.5%
Philosophy and Religion Teachers, Postsecondary	680	320	47.1%
Nursing Instructors and Teachers, Postsecondary	632	298	47.2%
Computer Science Teachers, Postsecondary	563	283	50.3%
Postsecondary Teachers, All Other	611	273	44.7%

Minnesota Employment Projections of 2005-2014 New Hires for Occupations Requiring Professional Degrees for Top 15 Occupations

First Professional Occupation	2004 Employment	New Hires	Percent Change
Lawyers	16,345	4,195	25.7%
Pharmacists	4,058	1,725	42.5%
Family and General Practitioners	3,661	1,560	42.6%
Physicians and Surgeons, All Other	3,780	1,481	39.2%
Dentists, General	3,339	884	26.5%
Surgeons	1,399	618	44.2%
Internists, General	1,187	520	43.8%
Chiropractors	1,082	465	43.0%
Veterinarians	1,096	376	34.3%
Pediatricians, General	756	328	43.4%
Optometrists	700	313	44.7%
Anesthesiologists	684	296	43.3%
Psychiatrists	365	142	38.9%
Obstetricians and Gynecologists	325	134	41.2%
Podiatrists	218	85	39.0%

Minnesota Employment Projections of 2005-2014 New Hires for Occupations Requiring Master's Degrees for Top 15 Occupations

Master's Level Occupation	2004 Employment	New Hires	Percent Change
Clergy	6,824	1,937	28.4%
Educational, Vocational, and School Counselors	4,579	1,860	40.6%
Clinical, Counseling, and School Psychologists	3,401	1,413	41.5%
Physical Therapists	3,622	1,208	33.4%
Mental Health and Substance Abuse Social Workers	2,480	1,107	44.6%
Rehabilitation Counselors	2,200	898	40.8%
Speech-Language Pathologists	2,498	764	30.6%
Substance Abuse & Behavioral Disorder Counselors	1,663	724	43.5%
Mental Health Counselors	1,424	645	45.3%
Instructional Coordinators	1,907	633	33.2%
Social Workers, All Other	1,770	620	35.0%
Librarians	1,925	577	30.0%
Counselors, All Other	1,335	448	33.6%
Health Educators	1,105	438	39.6%
Operations Research Analysts	1,447	425	29.4%

Connecting Student Financial Aid to State Workforce Needs

Federal and state governments have linked workforce development to education in the following three ways, depending on who receives the money. The specific conditions and details vary depending on the program.

1. Public dollars are given to private employers to use for training their workers for specific occupations and skills. Various employer tax benefits or exemptions for training workers are a variation on this theme. The Jobs Skills Partnership program is one example.

2. Federal and state grants are given to higher education institutions to develop specific education and training programs. The joint Ford Motor Company / MnSCU training program is an example of this approach.

3. Financial aid is given directly to students as an incentive to pursue a specified career and/or work in a specified location or for a particular employer. Here again certain tax benefits or exemptions may be used as incentives in place of or in addition to loans and grants.

There are advantages and disadvantages to each approach. Because this paper deals with direct student aid, concerns over the third approach are detailed.

These mechanisms involve grants, scholarships, and fellowships paid directly to students as incentives to pursue a particular major, discipline or career. The financial aid goes to the student prior to entering the workforce. There are several problems with this approach. First, if there are "no strings attached," these programs involve a risk for the funding agency since students may change their minds after graduation. In this case, while the grant may have achieved the desired financial aid goal, it did not provide the desired effect in the labor markets. Given the risk involved for the funding agency, many programs adopted a "Service/Payback" model. In these programs, the student receives the financial aid while in school and agrees to work a fixed number of years in a particular job or geographic region. There may be a number of different conditions attached to the financial aid, but almost all programs now require that the student pay back the financial aid if the student does not fulfill the workforce requirements of the financial support.[1]

Second, questions have been raised whether the grants attract students who otherwise would not have chosen the particular field. In other words, are we paying students for something they would have done anyway? If the goal of the public program is to entice students into a particular field, it's the student at the margin whose change in behavior must be accomplished to meet the objective.

[1] If students are required to pay back the grant in the event they choose not to work in the agreed upon field, then the "grant" is really a loan. "The term 'scholarship' in this instance is a misnomer because the aid is actually a service-payback loan. See Arfin, 1986.

Third, one of the problems students encounter in service or payback programs is that the job market may change and there could be a lack of qualifying jobs for students when they graduate. If there are no jobs, students often feel that they have been misled and are unhappy about having to payback the financial aid.

On-the-job incentives are designed to recruit workers for a particular occupation, employer, government agency, or geographic region from the existing workforce. Incentives are paid to students after their education is complete and they have entered the workforce. Incentives commonly take the form of loan repayment or loan forgiveness. Maplethorpe in her 2001 article "*Advantages and disadvantages of state loan forgiveness and loan repayment programs"* defines the two approaches.

> "In a loan forgiveness program the state "forgives" (i.e., repays) a certain dollar amount of the loan for each year of service that the student performs in the qualifying field of study. If the student does not complete the total amount of service required, the student must either repay the remaining 'unforgiven' portion of the loan or the entire loan amount (the exact provisions vary from state to state." (Maplethorpe, 2001)
>
> "An alternate but less often used incentive program (is one) that repays the educational loans (both principal and interest) that a former student has accumulated when he or she works in the designated field of service. These programs are usually referred to as "loan repayment programs." Loan repayment programs may cover all of the borrower's educational loans or they may be restricted to certain qualifying loans (e.g., specific federal loans)." (Maplethorpe, 2001)
>
> "These mechanisms eliminate the risk that students may change their minds. However, loan 'forgiveness' programs require significant administrative overhead involving tracking borrower's employment for many years and regularly certifying eligibility for 'forgiveness.' Loan 'repayment' programs do not require as much administrative overhead; the employer simply makes the student's loan payments as long as the student is an employee." (Maplethorpe, 2001)

In effect, loan repayment programs amount to salary increases for the students. It should be noted that, in this case, the cost of paying the loan is shifted from the student to the employer, and may involve shifting the cost from the taxpayer to a private employer. However, in some cases private employers may lobby for a "loan forgiveness" program where the burden of paying for the loan is shifted to the taxpayer.[2]

[2] Under certain conditions loan amounts "forgiven" by the lender or paid by the employer are taxable as part of the student's income.

Institutional Graduate Student Financial Aid

It is important to distinguish financial aid paid directly to graduate students from financial aid paid to graduate students by the college or university they are attending. The Minnesota State Grant Program does not provide direct grants for graduate study. However, graduate students are eligible for federal subsidized and unsubsidized student loans.

Minnesota First Professional (Law, MBA, MAED, other) graduate students rely mainly on loans to pay for their graduate education, with some help from employers for MBAs. Teachers can recover some of the cost as salary increases after completion of the graduate work.

For graduate students (academic MA and Ph.D.) financial aid in the form of institutional and departmental grants, fellowships, assistantships and tuition waivers is often available directly from the university attended rather than from the state financial aid program. Though considered as a form of financial aid, the teaching and research assistantships and some fellowships are treated as jobs rather than grants, with the student receiving wages and benefits in return for work. Some assistantships are supplemented with tuition waivers with the amount of tuition waived proportional to the number of hours worked. For example, the University of Minnesota College of Pharmacy Web site provides the following financial aid information for graduate students:

> "Virtually all graduate students in pharmaceutics receive financial assistance in the form of fellowships, teaching assistantships and research assistantships. Most first-year students are teaching assistants. All teaching and research assistants receive tuition waivers (any student with a quarter-time or greater appointment is considered a Minnesota resident for tuition purposes). As a result of this program, no pharmaceutics graduate student pays tuition.
>
> We also award graduate fellowships to high-achieving students. Fellowships are supported by the University, College of Pharmacy endowments and the pharmaceutical industry. Some fellowships are awarded through University-wide competitions, and their stipends vary. In some cases, fellowships may permit concurrent assistantships. As with TAs and RAs, fellowships also provide tuition waiver and health insurance. Some are restricted to U.S. citizens and permanent residents."

A second example is taken from University of Minnesota American Studies Graduate Program. Their Web site lists the following forms of graduate student financial assistance:

1. Graduate School Fellowships
2. Endowed Fellowships
3. Dissertation Fellowships
4. Other Fellowships
5. American Studies Grants
6. Graduate School Ph.D. Dissertation Special Grant
7. TA/Fellowship Funding
8. Research Assistantships

9. Teaching Assistantships, Tuition Waivers and Resident Rates
10. Federal Loans and Grants

While these examples are typical of the forms of financial assistance available to graduate students at the University of Minnesota, the amount and kind of financial assistance will vary from department to department, depending on endowments and funding.

Current State Programs in Minnesota

For the most part, Minnesota has chosen not to link financial aid to workforce development but instead allow students to make education and career choices guided by personal preferences and labor market conditions. Neither the State Grant Program nor the Department of Employment and Economic Development fund any graduate or first professional financial aid programs linked to workforce development.

Minnesota's programs that do exist are concentrated in the Department of Health and fund healthcare-related occupations and professions, which include some graduate-level work in medicine, dentistry, pharmacy and nursing. The following is a list of these programs:

1. Allied Health Care Tech Faculty Loan Forgiveness
2. Dentist Loan Forgiveness
3. Nurse Faculty Loan Forgiveness
4. Nurse Loan Forgiveness
5. Rural Midlevel Practitioner Loan Forgiveness
6. Rural Pharmacist Loan Forgiveness
7. State Loan Repayment
8. Urban Physician Loan Forgiveness

The Department of Health Loan Forgiveness Programs were evaluated by an outside evaluator and the results published in a report, *Bringing Health Care to the Heartland: An Evaluation of Minnesota's Loan Forgiveness Programs for Select Health Care Occupations*, April 2007. The evaluation found that:

- After almost 17 years of operation and growing from an annual state appropriation of $320,000 to $1.295 million in 2007, the Minnesota Loan Forgiveness Programs have also served over 300 health care facilities and educational institutions from throughout the state. In the past seven years, Minnesota has invested a total of $7.789 million in the Loan Forgiveness Programs.

- The Loan Forgiveness Programs were effective in getting health care practitioners into high need locations.

- A majority of health care practitioners who complete their service obligation remain in similar practice settings in Minnesota to continue their practice.

- The Loan Forgiveness Programs examined in this report and administered by the Minnesota Department of Health are successfully meeting their program goals and increasing the number of health care providers and educators in rural Minnesota and specialty locations.

Findings and Considerations

Mechanically, the existing structure of the Minnesota State Grant Program could be applied to graduate and first professional students. A recognized amount of tuition and fees could be established. A living and miscellaneous expense allowance could be set as well. These could be the same as used currently for undergraduates or set at different levels for graduate students. The FAFSA and Federal Need Analysis is designed to accommodate all students. Adjustments to the results could be made as done currently for applicants for Minnesota State Grants. As outlined in the next section, many of the issues of relating financial aid to workforce needs are not answered by the structure of the Minnesota State Grant Program

A number of general considerations suggest themselves regarding the feasibility of aid programs for first professional and graduate students.

Proposed programs should be developed in the context of and consistent with state education, financial aid, economic and workforce development policies. Significant background information and data are required before making a decision to establish an incentive program**.** In particular, satisfactory answers must be provided to the following questions:

1. Have potential employers been systematically contacted to determine the extent of the alleged labor shortage? Very often predicted labor shortages based on weak or anecdotal evidence turn out to be wrong. Given the difficulty of accurately predicting workforce shortages, close coordination with potential employers is critical for the success of any WCFA program. (Veneri, 1999)

2. What are the reasons for the labor shortage? Why are students not attracted to the target career or discipline? The problem may be low pay, undesirable working conditions or lack of career advancement. In these cases grants or scholarships may not be effective, or these disadvantages may cause students to change their minds upon graduation.

3. Who is the target market for the program? What students or potential students are the programs designed to attract? Can this target group meet the academic requirements of the training program?

4. How will the program be marketed? Some WCFA programs fail due to insufficient or ineffective marketing. For example, few teachers are aware of loan forgiveness programs for teachers that are part of the federal Stafford and Perkins loan programs.

5. Are the incentives (and penalties for non-compliance) sufficient to attract and retain students or employees? For example, given the widespread availability of student loans,

will the promise of a loan, without loan forgiveness or repayment, be enough to attract students?

6. Is the proposed funding enough to make a difference? For example, last year the Department of Health was able to fund loan forgiveness for only seven pharmacists, even though many more students had qualified and applied. When few people receive the benefit, students may not respond to the program's incentives.

7. Do the target academic or training programs produce graduates with the training and skills that the employers want and are willing to hire? Not only must the funding agency work closely with potential employers, but educational institutions must also work closely with employers to insure that their graduates are meeting the needs of the employers.

8. Is there state-level coordination of education and financial aid policy with state workforce development policy? The respective policy goals of these two sectors of state government are not necessarily consistent with each other, and care must be taken to insure that programs designed to implement one set of policy goals does not interfere with the attainment of the other.

9. Finally, are there ways of alleviating the labor shortage other than WCFA that may be more effective? Are there other ways of providing student financial aid that better meet student needs and state financial aid policy goals?

10. The "strings attached" Service Payback Model incorporating some form of loan forgiveness or loan repayment is the most common form of these programs. Given the lower administrative overhead, a loan repayment program is preferable to a loan forgiveness program. While increasingly popular, there is little research or data providing evidence either for or against the effectiveness of the programs.

11. Minnesota's programs are designed to provide health care professionals for rural areas, are administered by the Minnesota Department of Health, and were recently evaluated as effective. These programs should be reviewed periodically to determine the effectiveness of and continuing need for the programs.

12. The programs should be created with a sunset provision, to insure that they do not continue beyond their useful life. These programs are often established as ad hoc solutions to perceived labor shortages, without considering these "solutions" in the larger context of state financial aid, education and workforce policy.

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