REPORT ON THE ECONOMIC IMPACTS OF A STATE WIDE OUTDOOR EDUCATION PROGRAM IN OREGON

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I was asked by the Gray Family Foundation to analyze the impact on both jobs and income in the state of providing the outdoor education program budgeted for Portland Public Schools and the Reynolds School District next year to the entire state of Oregon.

Executive Summary

I estimate that if the same full week, outdoor education program budgeted for 3,800 PPS students and 725 Reynolds students next year were provided to 50,000 students state wide this would generate, *directly and indirectly*, more than **600 FTE jobs** and more than **27 million dollars of income** in Oregon on an annual basis. The IMPLAN model for the Oregon economy was used to derive the relevant employment and income expenditure multipliers needed.[1]

Methodology

The program being evaluated consists of two parts: It will hire employees of different kinds, who will be paid different wages and salaries, over different time periods. In other words it will have an annual "wage bill." And it will also purchase a variety of necessary goods and services. Obviously, each part will have a direct effect on job and income creation. Less obviously, each part will also have an indirect effect on job and income creation in the state.

It is well known that whenever a government spends more on anything this (1) contributes directly to an increase in demand for those goods or services, (2) which induces increases in production of those goods or services, (3) which increases incomes for businesses and their employees producing those goods or services, (4) which leads to an increase in consumption demand on their part for other goods

[1] Assistance with the IMPLAN model was provided by the Northwest Economic Research Center (NERC) at Portland State University. NERC did not review or endorse the conclusions that were drawn from use of the IMPLAN model.

and services, (5) which leads to yet more production, more income, and more consumption demand, etc. This is referred to in the economics literature as the "income expenditure multiplier" effect. It means that when the government spends a dollar this will not only raise the incomes of those who produce the dollar worth of goods or services by one dollar, it will raise others' incomes as well. The multiplier for wages and salaries paid is somewhat smaller because recipients save part of their increased wages and salaries. And of course, there are "employment" multipliers for the same reason there are income expenditure multipliers.

The size of these "multiplier effects" will depend on a number of factors including how "self-contained" or "open" the economy is, the spending and saving habits of its residents, wage and salary levels, and the degree to which there is excess capacity in the economy. The IMPLAN model is designed to take all these factors into account for the state of Oregon.

Calculations

Estimating the impact on income:

Below is the budget I was provided for the 3800 PPS students plus the 725 Reynolds students. In other words, the budget below is for 4525 students in total.

Wages and salaries:

- 20 field instructors at $425-$500 per week;
- 30 program leaders at $425-$500 per week;
- 5 nurses at $960-$1000 per week;
- 6 cooks at one site at $9.51 - $14.09 per hour for a 40 hour week;
- 5 site supervisors at $34,000-$62,000 annual salary;
- 0.75 FTE lead nurse at $19,000-$29,000 annual salary;
- 4 classified admin support staff (office) at $31,000- $39,000 annual salary

Spending on goods and services:

- Supplies: $40,000;
- Food and food service (including kitchen staff not listed above): $490,000;
- High School student leader transportation (bus): $70,000;
- Printing, postage, repairs/maintenance: $42,000;
- Site rentals (camps): $275,000;
- Rental (warehouse): $18,000

I was told:

(1) All employees listed below would be working 16 weeks during the year.

(2) Hourly employees work a 40 hour week.

(3) In the field of education an annual salary is for 36 weeks of work, so that only 16/36 = 44.44% of any annual salary should be attributed to the program.

(4) The expenditures on goods and services listed were annual expenditures for the program.

Wherever salaries or wages were given as ranges I used the average in the range. For example, for field instructors whose weekly salaries were listed as $425 - $500 per week, I used [$425+$500]/2 = $462.50.

This adds up to an annual wage bill of $670,584[2] and annual expenditures on goods and services totaling $935,000. This alone contributes $670,584 + $935,000 = $1,604,584 a year to income in Oregon.

However, as explained, this does not include the indirect, or induced effects on income we can anticipate. Based on the IMPLAN model NERC provided an income expenditure multiplier of 1.98 for expenditures on educational goods and services, and an income expenditure multiplier of 1.27 for expenditures on wages and salaries. Multiplying the annual wage bill, $670,584, by 1.27 gives $851,642. Multiplying annual spending on goods and services, $935,000, by 1.98 gives $1,851,300. Adding these together gives $2,702,942 as the best estimate of how much the PPS + Reynolds program will contribute to income in the state **both directly and indirectly** on an annual basis.

These estimated impacts on income in the state are for a 6 day 5 night program serving 4525 students (PPS + Reynolds). For a similar, state wide program serving 50,000 students the impacts would be ten times greater. More precisely, we need to multiply the estimated impacts on income above by 50,000/4,525 = 10.0497.

[2] See the appendix for my calculations for wages and salaries for the PPS + Reynolds program.

For a state wide, full week program for an estimated 50,000 students, this gives an estimate of the **direct** contribution to annual income in the state of (10.0497)($1,604,584) = **$16,125,587**[3]**,** and an estimate of the overall, total, **direct and indirect** contribution to income in the state of (10.0497)($2,702,942) = **$27,163,756**.

Estimating the impact on employment:

For jobs in education 36 weeks is the standard for a fulltime job, or one FTE, and for all employees the program provides employment for 16 weeks.

Adding up all the positions gives 20+30+5+6+5+.75+4 = 70.75 jobs for 16 weeks out of a 36 week work year for those working in education. Multiplying 70.75 times 16/36 = .4444 gives 31.44 FTE jobs in education created directly by the program for PPS plus Reynolds. Multiplying 31.44 by 10.0497 gives 315.96 FTE education jobs in a statewide program.

However, the program will also create jobs indirectly, as explained above. And it will do so in two ways:

(1) The 315.96 FTE jobs in the program create income, which when spent, stimulates businesses to hire additional employees to meet this new consumer demand. Based on the IMPLAN model NERC calculated that each FTE job generates an additional .37 FTE jobs indirectly. So the overall, total, direct and indirect impact on employment from the 315.96 FTE jobs is (1.37)(315.96) = 432.87 FTE jobs.

(2) However, besides hiring employees the PPS plus Reynolds program also purchases $935,000 of goods and services. And a state wide program would require spending 10.0497 times $935,000 which is $9,396,469.50. Based on the IMPLAN model NERC calculates that for every 1 million dollars the state spends on goods and services 18.5 FTE jobs are created indirectly. Multiplying 18.5 by 9.3964695 gives an additional 173.83 FTE jobs created indirectly when the state spends $9,396,469.50 on goods and services.

This yields an estimate of 432.87 + 173.83 = **606.7 FTE jobs** the state wide program would generate both **directly and indirectly** on an annual basis.

[3] $16,125,587 is also the estimated cost of a state wide program for 50,000 students similar to the PPS plus Reynolds full week program.

Conclusions

A state wide, week long, outdoor education program like the one budgeted for students in Portland Public Schools and the Reynolds School District for next year could reasonably expect to generate **over 600 FTE jobs** and **over 27 million dollars in income** in the state. While my task was to estimate such a program's direct and indirect effects on employment and income, it is worth noting that these jobs would be primarily located in rural areas where structural unemployment in Oregon is particularly acute, and assuming the program continued to run year after year that these jobs would be permanent rather than temporary.

Appendix: Annual Wages and Salaries for PPS Plus Reynolds Program

20 field instructors at $425-$500 per week
(20)($462.50)(16) = **$148,000**

30 program leaders at $425-$500 per week
(30)($462.50)(16) = **$222,000**

5 nurses at $960-$1000 per week
(5)($980)(16) = **$78,400**

6 cooks at one site at $9.51 - $14.09 per hour for a 40 hour week
(6)($11.80)(40)(16) = **$45,312**

5 site supervisors at $34,000-$62,000 annual salary
(5)($48,000)(.4444) = **$106,656**

0.75 FTE lead nurse at $19,000-$29,000 annual salary
(.75)($24,000)(.4444) = **$8,000**

4 classified admin support staff (office) at $31,000- $39,000 annual salary
(4)($35,000)(.4444) = **$62,216**

Total Wages and Salaries: $670,584