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# **Comparison of First-year Salaries for Education Majors to First-year Salaries for Other Majors**

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### **Background**

Reports indicate that many schools in Utah's public education system struggle to find sufficient highly-qualified teachers to fill their staffing needs, particularly in the fields of mathematics, science, or special education. Many studies indicate the importance of having a highly-qualified teacher in the classroom. As such, simply hiring individuals who barely meet the necessary performance qualifications likely does a disservice not only to the students of those teachers but to other students within the public education system who are negatively impacted by students who were not adequately prepared by those teachers.

Many factors influence the market for teachers. The purpose of this report is to highlight salary differences between graduates of different majors and how those differences may be playing a role in creating and sustaining subject-specific teacher shortages. Some individuals who could otherwise become teachers might be pursuing careers which pay higher salaries. In this report, we compare estimated first-year salaries for education majors to estimated first-year salaries for students who majored in various other fields, working in both the public and private sectors. We recognize that the salary schedules for many school districts generally fail to compensate for the differing market demands of graduates with differing majors.

### **Data and Analysis**

Historically, the Utah System of Higher Education (USHE) publishes salary estimates for specific undergraduate fields of study. These salaries are estimated from unemployment insurance wage data. For the purposes of this report, USHE provided first-year salary estimates for students who graduated with a bachelor's degree in the 2013-2014 academic year. Various limitations in the data are noted in the footnote below.<sup>1</sup>

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<sup>1</sup> First-year annual salaries are calculated from Department of Workforce Services unemployment insurance wage data, which reflects the following limitations: (1) Hourly wage is impossible to calculate and also full/part-time status of the employee is unknown and must be inferred; (2) total amount paid is provided, which may include bonuses or other non-wage payments; (3) information about industry and number of jobs an individual has are not known; (4) the data are not adjusted for the cost of living of different geographical areas; and (5) the data do not include those students who work for the federal government, work for non-profit or self-insured entities, are self-employed, or employed out of state.

Table 1 shows the average first-year salary of an education major compared to various other subject-specific majors. The salary ratio shown in the third column identifies the average salary increase or reduction graduates would experience by pursuing a teaching career in public education. This salary ratio is calculated by dividing the estimated annual wage of an education major by the estimated annual wage of the major indicated in that row. Various majors are grouped in relationship to common education curricular subjects. For example, mathematics and engineering graduates are grouped under the Mathematics subject.

**Table 1. Comparison of First-year Salaries by Major for Students Graduating in 2014 Academic Year**

<b>College Majors (Bachelor's Degrees)</b>	<b>Estimated First-year Salary</b>	<b>Salary Ratio – Education Major Versus Other Majors</b>
<b>Teaching</b>		
Education	\$36,577	100%
<b>Mathematics</b>		
Engineering	\$59,616	61%
Mathematics and Statistics	\$56,195	65%
<b>Computer Science</b>		
Computer and Information Sciences and Support Services	\$64,071	57%
<b>Science</b>		
Physical Sciences	\$41,105	89%
Biological and Biomedical Sciences	\$39,300	93%
<b>History</b>		
History	\$39,059	94%
<b>English / Language Arts</b>		
English Language and Literature/Letters	\$39,188	93%
Communication, Journalism, and Related Programs	\$42,776	86%
<b>Physical Education</b>		
Parks, Recreation, Leisure, and Fitness Studies	\$35,696	102%
<b>Special Education</b>		
Family and Consumer Sciences/Human Sciences	\$36,398	100%
Social Sciences	\$58,974	62%
Psychology	\$39,648	92%

This information shows significant gaps between first-year salaries in education and first-year salaries in math-based majors. This information indicates that a 2014 graduate with a degree in mathematics and statistics could anticipate being paid \$56,193, whereas a graduate with an education major could expect an average first-year salary of approximately \$36,577. In other words, had the mathematics graduate gone into teaching, that graduate would likely have experienced a salary 35% lower than that for a non-teaching position<sup>2</sup>. Similarly, a computer science graduate would have experienced a 43% lower salary had the graduate become a teacher rather than a computer programmer. Contrast that with a graduate in parks, recreation, leisure, and fitness studies who would likely experience a higher salary in teaching compared to other non-teaching employment opportunities.<sup>3</sup>

## Summary

Given the significant difference between salary opportunities, the shortage of highly-qualified mathematics teachers may be driven in part by this disparity, not just relative to first-year salaries but for the duration of an individual's anticipated lifetime earning potential. We note that Utah's higher education system generally provides differential pay relative to a professor's background (e.g. engineering versus history) and does not experience similar concerns regarding teacher shortages.

This is by no means an extensive analysis of the labor market for teachers, but points towards an issue that should not be ignored. Policymakers and education professionals should consider how market forces influence earning potential and how the lack of salary differentiation might influence the supply of teachers, particularly in subjects like mathematics and computer science. Those with an inclination towards mathematics have a significantly greater monetary incentive to pursue career opportunities in engineering or mathematics rather than mathematics education. While salary is just one of several factors in choosing career opportunities, it is an important factor for many graduates and students entering college. The public education system should reconsider its compensation practices, particularly in regards to this information and the competing opportunities graduates have.

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<sup>2</sup> While the legislature has created targeted salary enhancement programs, such as the Teacher Salary Supplement Program (TSSP), the salary supplement is limited, appears to lack visibility, and may be overly narrow in its application. For example, an engineering major may not qualify for the salary supplement as a math teacher.

<sup>3</sup> This report relies on wage information because total compensation information was not readily available. It is our experience that teachers, like other government workers, typically receive above-market benefit packages relative to private sector employees similarly situated.