THE DIGITAL REVOLUTION, STIMULATING INTELLECTUAL DIVERSITY WITHIN THE COMPUTER SCIENCE DISCIPLINE A CASE IN POINT

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Abstract

Throughout the 20th century, society has witnessed tremendous changes that have been brought about by rapid developments in technology. Because of these developments, the number of Information Technology (IT) professionals needed to support computing and computer technology is on the increase. Colleges and Universities are experiencing an increased enrollment and witnessing the effects of non-traditional students returning to school to learn these new high-demand skills. Students with very different backgrounds, ages, work experiences, and educational levels are returning to school. This "case in point" describes how intellectual diversity in the classroom is growing within the computer science disciplines due to the increased demand for IT professionals.

Throughout the 20th century, society has witnessed tremendous changes that have been brought about by rapid developments in technology. Contributing factors for these changes include the continual advances in the personal computer, the growth in computer networks, and advances in data storage. The "digital revolution" as it is sometimes called (Sterling, 1997), is affecting nearly every aspect of our everyday life. Because of this, the number of Information Technology (IT) professionals needed to support computing and computer technology is increasing. The Bureau of Labor Statistics (1999), projects that between 1998 and 2008, more than 2 million workers will be needed to fill newly created and vacant IT jobs.

Colleges and Universities are also feeling the effects of the digital revolution. The numbers of students entering degree and certificate programs in the computer science disciplines are on the increase (U.S. Department of Commerce, 1999). Both traditional and non- traditional students see promising opportunities in this thriving industry. The School for Professional Studies (SPS) at Saint Louis University (SLU) has experienced this

increase and witnessed, first hand, the effects of non-traditional students returning to school to learn these new high-demand skills. As a result of the non-traditional student returning to college, the intellectual diversity within college classrooms has been enhanced greater than ever before.

The School for Professional Studies at Saint Louis meets the distinctive needs of adult non-traditional learners. The department defines the adult non-traditional learner to be at least 22 years old and having at least 3 years of work experience. The Computer Science Technology (CST) degree program within SPS has grown steadily over the past 3 years. Students with very different backgrounds, ages, work experiences, and educational levels are enrolling in classes for varied reasons. Some students are pursuing a first degree. Others students are making career changes, while still others require computer science skills to enhance or maintain levels of competency at work.

The student population within the CST program at SLU is not only multicultural and demographically diverse it has a varied level of academic intellect. A case in point is the junior-level undergraduate course taught during the fall 2000 semester, CST300– Principles of Event Driven Programming. The course had an enrollment of 15 students whose academic achievements and intellectual diversity ranged from students seeking a first bachelor's degree to student holding doctorate degrees. Fifty three percent of the students in the course had already obtained, at minimum, a bachelor degree. As shown in Figure 1, the levels of intellectual diversity include all the in-between.
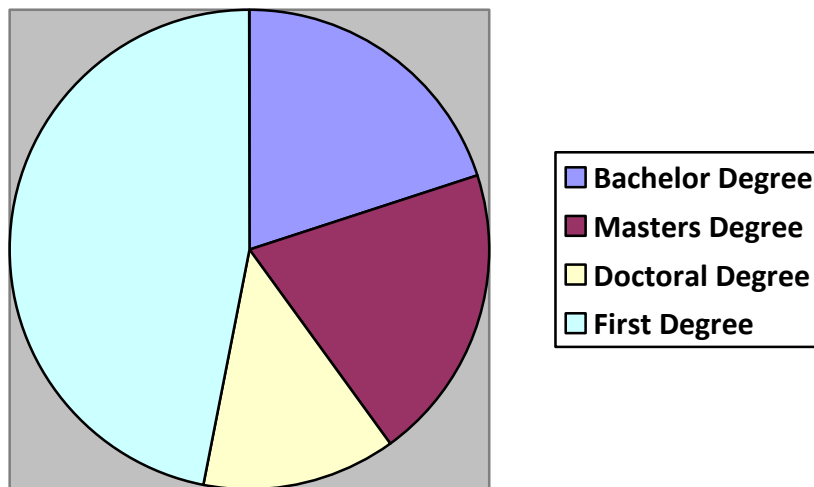
Total students = 15
Figure 1:   Student Obtained Academic Achievement

Technology and its growth are indeed changing the demographics of the college class- room. The trend for continued life-long learning is tied to all levels and groups of people. Students are returning to pursue further studies in the computer science disciplines in order to gain the technical skills that will make them valuable in today's workforce. If this trend continues as predicted in the report released by the 21st Century Workforce Commission (2000), the levels of intellectual diversity in the classroom will surely increase. This type of intellectual diversity can be seen as a powerful resource that affects and enhances the quality of education. An intellectually diverse education promotes a

strong teaching and learning environment and fosters the challenge for academic excellence.

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