Are STEM High School Students Entering the STEM Pipeline?

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ABSTRACT

This study compared the career skills and interests for students in two STEM schools to national data. Students completed the KUDER skills assessment and career planning online tools. Results were compared across school, grade level, and sex. The results provided evidence that STEM high school students expressed career intents in predominately STEM-related careers at twice the national rate. Between 42 and 44% of STEM school students hold STEM-related career intents, and these intents resulted in more than half of the School B STEM school students majoring in STEM fields in college (School A will graduate its first class in 2013). This is double the national percentage of high schools graduates pursuing STEM-related college studies, suggesting that STEM high school students are entering the STEM pipeline.

The worldwide demand for science, technology, engineering, and math (STEM) trained professionals has fostered a plethora of responses within the United States as STEM-based economic activities increase. At first, the national response focused on initiatives to support more college graduates in STEM programs (Kuenzi, 2008). Because the results were not encouraging, initiatives emerged to increase the number of high school students entering pathways for STEM professions, sometimes referred to as the STEM pipeline. The focus on increasing high school graduates' STEM interests and skills within the United States is documented in federal and state initiatives (America COMPETES, 2007; Battelle, 2002; Kuenzi, 2008; National Science Foundation, 2007). One response to the initiatives is the creation of STEM specialty high schools. Though high school reform is not a new concept, the development of STEM-focused high schools is relatively new. In 2007 there were only 100 such schools throughout the country (Atkinson, Hugo, Lundgren, Shapiro, & Thomas, 2007; Subotnik, Tai, Rickoff, & Almarode, 2010; Thomas & Williams, 2010); as of 2011, there has been an emergence of many more STEM specialty schools, including charter schools, as well as STEM schools within traditional schools. Furthermore, individual states have launched organizations to increase the number of graduates prepared to enter the STEM pipeline. Indiana, Tennessee, Ohio, North Carolina, New York, and Maryland are a few states that have STEM initiatives, many of which are funded by the Gates foundations or the National Governors Association (NGA) (The National Network of STEM States, n.d.). The goal is to create a National STEM Learning Network as a clearinghouse for advancing STEM policies, best practices, and industry alignment (Miller, 2009).

Longitudinal studies about STEM high schools' impact on the number of STEM-trained college graduates have not yet been published. Legislation and policies are predicated upon the hope that the availability of STEM-focused high schools will increase the percentage of high school students who enter the pipeline anticipating a STEM career and exit the pipeline as STEM professionals. Indeed, it is during high school that students begin to differentiate career intents. Career aspirations emerge in the middle school years but are not fully formed until late in the high school experiences (Low, Yoon, Roberts, & Rounds, 2005). Tai, Liu, Maltese, and Fan (2006) studied the career paths of grade 8 students and found that roughly half of grade 8 students who expected to participate in a science-based career actually did study science at the postsecondary level. The result provided evidence that there is interest in STEM careers at early ages; but do STEM schools further develop these interests? To investigate the question, this study compared the career skills and interests for students in two STEM schools to national data.

LITERATURE REVIEW

Research suggests that exposure to STEM content within the traditional high school (HS) experience does not guarantee students will become STEM professionals. Thomas (2000) compared the majors of college graduates who attended a STEM HS to national percentages of college majors collected by the National Center for Education Statistics (NCES) in 1992–1993. National results indicated that 3% of college-attending traditional HS graduates majored in math or computer science. Meanwhile, 10% of students who graduated from a STEM HS and attended college majored in math or computer science. While the percentage of STEM majors was three times greater for graduates of STEM HSs, it is reasonable to expect the difference would be higher. Interestingly, graduates of STEM HSs majored in the science fields at twice the rate of graduates from traditional HSs, 51% compared to 23%.

The phrase 'enter the STEM pipeline' refers to a student declaring intent in further education or a career in a STEM field. Students enter the STEM pipeline at high school graduation and exit the pipeline as STEM professionals. For the remainder of this paper, the authors will refer to degree completion, career interests and career clusters (a distinct grouping of occupations and industries based on the knowledge and skills they require), rather than entering the pipeline because the actions are more descriptive of the postsecondary actions and decisions.

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STEM High Schools

STEM schools deliver state-mandated HS content with a focus on science, technology, engineering, and math. Generally speaking, STEM schools employ an inquiry-based instructional framework with interdisciplinary content delivery. Students work in either collaborative or cooperative groups to solve problems. The problems are non-trivial and are generated either from students' personal interests and/or from community issues. Consequently, students are more likely to be invested personally in solving the problem; their engagement in and motivation for solving the problems are enhanced. The student-generated solutions are commonly presented to school stakeholders; subsequently, students incorporate stakeholder feedback into their final solution. As such, most STEM schools partner with local businesses and/or Institutes of Higher Education (IHE) in order to provide personal connections between students and those with careers in a STEM field. Some STEM HSs offer early college credits or all college credit classes in the junior and senior years.

Career education in K12 Schools

It is said frequently that careers that will be available for today's high school graduates have not yet been created. As students join the workforce, their experience and knowledge will shape new professions (Haberman & Yehezkel, 2008). Nonetheless, schools continue to provide career education in varying degrees in the middle school or high school. Ideally, students complete personal skills and interest inventories which map into distinct groupings of occupations and industries. The groupings are referred to as career clusters. From this activity, students can begin the process of exploring further the group of careers that matches their interests.

Career selection is a process that takes place over a period of ten or more years as a student matures (Low et al., 2005). Parents, teachers, friends, and neighbors influence the process, as do school counselors. Unfortunately, the actual time performing career counseling duties is minimal according to a state wide study of elementary, middle, and high school counselors (Osborn & Baggerly, 2004). Budget challenges for education that cut or minimize counselor access along with the ever growing counselor responsibilities associated with standardized testing and class scheduling contribute to this situation.

Beyond time constraints, school counselor knowledge influences the ability to guide students in career exploration. School counselors are not and cannot be experts on all career opportunities. In fact, most school counselors work with students to recognize their personal skills and interests and then direct students to additional resources for career options related to these interests (McWhirter, Rasheed, & Crothers, 2000). In a study by McCuen and Greenberg (2009), students reported that school counselors' lack of awareness of emerging STEM-related careers had a negative impact on students pursuing postsecondary STEM interests.

Career Clusters

In 1996 the U.S. Department of Education (DOE), the Office of Vocational and Adult Education (OVAE), the National School-to-Work Office (NSTWO), and the National Skill Standards Board (NSSB) collaborated to develop 16 career clusters or groupings of similar careers (The 16 Career Clusters, n.d.). The purpose was to assist students in planning for the transition from high school to careers or higher education (The work suite: Career clusters, pathways & specialties [thus], n.d.). The attraction for standardizing the career clusters was that the cluster names are familiar to most students. For example, students can relate to the career clusters of Education and Training or Health Science (See Figure 1).

Sixteen Career Clusters
Agriculture Food and Natural Resources
Architecture and Construction
Arts, Audio-Video Technology, and Communications
Business Management and Administration
Education and Training
Finance
Government and Public Administration
Health Science
Hospitality and Tourism
Information Technology
Law
Marketing
Manufacturing
Public Safety, Corrections, and Security
Science, Technology, Engineering, and Mathematics
Transportation

Figure 1. Sixteen career clusters

Career Planning Tools for Students

To assist students in familiarizing themselves with career options related to their interests, numerous career interest and planning tools have evolved. The ACT college entrance assessment offers a career exploration tool for middle school students (EXPLORE) and for high school students (PLAN for 10th graders and the ACT for 11th and 12th graders) (ACT, 2011). An informative career options student report merges ACT academic achievement results and self-reported interest inventories for each student.

ACT career interest analyses employ the RIASEC scales to identify interests: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (Swaney, 1995). For example, a score close to 'R', 'Realistic', implies that the responder would be well placed in jobs such as mechanical and electrical specialties or engineering. A student with a scale score closer to 'S', Social, would be well suited for education or community services. The scales were finalized by Holland and are sometimes referred to as the Holland scales; they have been supported repeatedly in the literature (Day & Rounds, 1998; Swaney, 1995). Holland (1997) posits a circular model for the RIASEC scale; R (realistic) is most similar to I (investigative) and C (conventional), less similar to A (artistic) and E (enterprising), and least similar to S (social). Prediger (1982) posited that the RIASEC scales can be subsumed into two dimensions (Things/People and Data/Ideas) to characterize further the RIASEC profiles. One dimension identifies careers as focusing on Things or People, such as Engineering for Things, or Education for People; the second dimension is named Data or Ideas, with Regulation or Financial careers related to Data and Arts or Social Sciences related to Ideas. Figure 2 includes a circular model depicting the RIASEC scales merged with career descriptions and Prediger's two dimensions.

Another resource that provides career interest and planning services designed for students is KUDER, an online survey regarding student career skills and interest. The online tool is designed for students as early as grade 7 and for adults at any point in a career (Kuder, 2010). Student skill interest data is mapped to either the RIASEC or the 16 Ca-

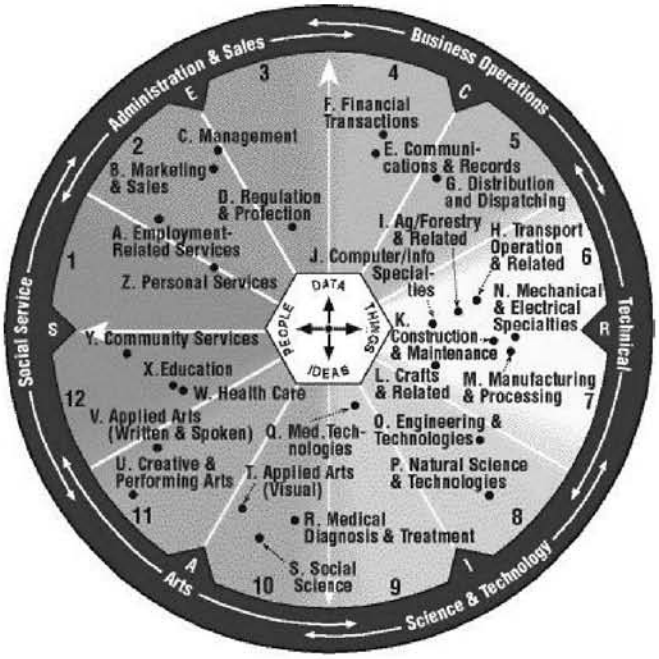

Figure 2. The RIASEC scales merged with career descriptions and Prediger's two dimensions

reer Clusters. For this study, student responses to KUDER assessments subsequently mapped to the 16 career clusters were used.

Student interest stability over time

Longitudinal data from career planning tools have provided insights over time regarding stability and change of HS student skills, interest, and anticipated careers. Tracey, Robbins, and Hofsess (2005) analyzed national ACT data for students at the 8th, 10th, and 12th grades. The researchers analyzed student academic scores and career interests. The results indicated that there was a general upward trend in ACT academic scores for both sexes for all subjects over the three assessments administered in the 8th, 10th, and 12th grades. For career interests, the RIASEC scale scores also increased in magnitude over time, indicating more crystallized interests. Girls' interests were stable. Interests for boys changed from the 10th grade to the 12th grade.

Interestingly, though, Tracey et al. (2005) found there was no relationship between academic scores and subsequent career interests or vice versa. For example, students with high math scores did not necessarily indicate career interests in math-related careers. Students did exhibit more crystallization within career interests as they matriculated through HS; for example, instead of a broad math-related career, a student's interests narrowed to electrical engineering or physics. Interest-career congruency, the match between interest and career intent, was stable from grade 8 to 10 and less stable between grade 10 and 12. For example, between the 10th and 12th grade more students identified careers that did not align with their interests. The researchers suggested that the change in interest-career congruency could be attributed to the major life decisions required in 12th grade regarding college/career choices; more career counseling efforts in 12th grade may be warranted regarding interest-career congruency.

National Statistics for Bachelor Degrees Awarded

In 2010 68% of the high school graduates enrolled in college and 90% were enrolled full time (US Department of Education NCES, 2011). Twenty-five percent of college graduates received degrees in STEM fields.

Because higher education institutes have different requirements regarding when a student declares a major, it is not easy to determine how many students begin their college career with the intent to major in a STEM field. The National Survey of Student Engagement (NSSE) instruments collect self-report data regarding college students' anticipated major fields of study. For 2010, first year college students across the nation (n = 189,811) indicated that 25% anticipated majoring in STEM fields (Biology, Engineering, and Physics). Twenty percent of a 2010 sample of college seniors (n = 229,713) reported upcoming graduation in STEM fields (NSSE, 2011).

College degree attainment is a more reliable statistic than anticipated college degree fields when determining statistics regarding trends of STEM HS graduates entering the STEM pipeline. For that reason the NCES data is preferred in describing the number of STEM graduates. In 2008, 27% of the attained degrees were in STEM fields ranging from health to computer science to physics. This is very close to the 26.9% STEM-related degrees awarded in 1998 (US Department of Education NCES, 2009b), indicating that recent efforts have to be furthered to bring about more substantial changes. It is interesting to note that NCES 2008 data (27% STEM graduates) is close to the anticipated percentage (25%) reported by NSSE (2011).

Sex Differences regarding STEM-related College Majors

The percentage of college degrees awarded to males and females was fairly constant between 1998 and 2008 (US Department of Education NCES, 2009a). The degree field that has experienced the largest female increase in the ten year period is Security and Protective Services; the largest decrease has been in Computer and Information Sciences, a STEM-related field. In fact, the percentage of females awarded degrees in computer science and engineering de-

School	8th Grade N		9th Grade N		10th Grade N		11th Grade N		12th Grade N		Total
Sex	F	M	F	M	F	M	F	M	F	M	
School A	19	33	18	44	28	39	N/A	N/A	N/A	N/A	181
School B	N/A	N/A	31	34	41	34	21	21	23	36	241
Total N	52		127		142		42		59		422

Figure 3. Descriptive Statistics of Participants Across Grade Level and Sex

clined between 1998 (27%) and 2008 (18%). Likewise, the percentage of females who received degrees in engineering, computer science and biology during 2008 was smaller than those awarded in 1998. In 2008, females had the highest percentages of degrees in Family and Consumer Sciences (87%); Health Profession (85%); and Public Administration and Social Services (82%). Females had the smallest representation in Engineering (16%) and Computer Science/Technology (18%). In contrast to the females, males continued to dominate in the Engineering (82%), Computer Science (73%) and Physical Science fields (60%) (US Department of Education NCES, 2009b).

Summary

Historical data indicate that the numbers of students anticipating and attaining STEM-related college degrees is stagnant. STEM high schools are providing students with skills that are necessary for success in STEM careers. The question remains, though, whether today's STEM high school graduates are selecting STEM fields for careers or higher education. This paper documents a comparison of historical national data regarding STEM Bachelor's degree anticipation/attainment and two STEM high schools students' career interests and aspirations.

METHODS

Participants

Participants included students enrolled in either of two STEM schools in the same Midwestern state. At the time of data collection, School A served students in grades 8-10. The school was in its second year and planned to add grade levels each year, eventually to serve students in grades 6-12. The school represented students from 5 different counties and over 30 school districts. Applicants were required to be on grade level. A lottery system was used to attain equal representation from each of three surrounding counties and across sex. Over-representation was allowed from the three original counties if openings remained.

School B was a STEM-focused, early college academy that served students in grades 9-12. College level courses were taught at the school during junior and senior years. An educational council representing the entire region of local school districts operated the school. Students in each of the participating districts applied for the STEM/Early College program; admittance was based on a lottery system. School B had graduated two classes. Over 50% of their graduates declared their major field of study in STEM-related fields.

All students at each school were asked to participate in the study. Participation rate was approximately 85%, with 422 participants out of the 498 students enrolled across both schools. Participant grade level and sex are presented in Figure 3.

Measures

To examine the research question, student skills and career intent were studied. For skills, the KUDER Skills Assessment (KSA16) maps students' skills within the framework of the 16 career clusters described previously. Participants provide one of the five following responses to 170 statements describing activities, such as 'planting a garden to make a salad': Cannot do at all; Slightly certain can do; Moderately certain can do; Very certain can do; and Completely certain can do. The internal consistency (Cronbach's alphas) of the KSA16 are high (Zytowski, D'Achiardi, & Rottinghaus, n.d.), ranging from 0.78 to 0.85 for each cluster.

For career intent, the KUDER Career Survey (KCS) provides data regarding the inventory-taker's similarity with groups of employed people in the sixteen career clusters identified in Table 1. Students rank order responses to 60 forced choice triads using Most-, Next Most-, and Least-preferred as a ranking scale. The activities within each triad are described as a simple verb and an object, such as 'take dance lessons'. Cluster scores are generated by means of a system of unique weights obtained by multiple regression analyses of the attitude preference scales on cluster membership. Reliability studies indicate the instrument is both reliable and valid. Ihle-Helledy (2001) found Cronbach alphas for cluster scores ranging from .65 to .86 with a median of 0.77, and temporal reliabilities ranging between 0.83 and 0.92, with a median of 0.87. Recent studies regarding the validity of the KCS found satisfactory concurrent validity evidence for the majority of career clusters (Kelly, 2002; Zytowski, n.d.).

Students completed the online KSA16 and KCS using school computers during two 50 minute advisory periods in March, 2011; those who did not complete the online assessments during advisory time completed the surveys at home using personal computers between April and May, 2011. Upon completion, each student received a summary profile that included suggested steps for continuing career exploration and links for exploring options for additional career study. KUDER provided summarized skill and career data by grade level, sex, and school to the authors. Microsoft Excel pivot tables were created to investigate differences in skills and career intents by grade levels, sex, and school responses.

Career Cluster	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Hospitality	42%	31%	27%	37%	23%
Information Technology	23%	27%	31%	37%	35%
Education and Training	16%	22%	23%	7%	13%

Figure 5. Percentage of Students Skillsets in Most Populated Career Clusters by Grade Level

RESULTS

STEM career cluster and STEM careers

The STEM cluster within the 16 National Career Clusters Figure 1 includes jobs and careers focused in engineering; the cluster does not represent all careers that require STEM training. For this study, to better identify the sample's STEM career intents, the authors defined 'STEM-related' careers to include Health Services, Architecture, Information Technology, and Arts Audio-Video Technology and Communications clusters. Given this expanded definition of STEM-related careers, the career interests of the majority of the students in both schools were STEM-related. The results are described in two sections: skills and careers.

Skills inventory

Skills inventory data represent students' responses about their current skillsets. The skillsets are aggregated into the 16 career clusters described previously. The skill clusters identified from the student responses for the two schools were similar; therefore, the results are reported for a merged dataset containing School A and School B responses.

Career Cluster	Percentage of students with skillsets in Career Cluster
Hospitality	31%
Information Technology	30%
Education and Training	19%

Figure 4. Percentage Students with Skillsets in Most Populated Career Clusters

Students reported their current skillsets were focused in the Hospitality and Tourism (31%) and Information Technology (30%) clusters; the Education and Training was the third highest populated (19%) cluster. Figure 4 contains the percentages of students whose skillsets were mapped to the three most populated career clusters. Skillset/Career clusters mappings to 3 or fewer students are not reported causing the total percentages not to equal 100% in Figure 4.

Skills inventory by grade level

The three clusters represented in Figure 4 were also the most populated career clusters by grade level; however, the percentage of students with skillsets mapped to the three clusters varied with grade level (Figure 5). For example, Hospitality mappings decreased from 8th grade (42%) to 12th grade (23%) while Information Technology increased from 8th grade (23%) to 12th grade (35%). The third most populated skillset cluster, Education and Training, remained relatively consistent between 8th and 12th grade.

Career Cluster	Boys	Girls
Hospitality	22%	41%
Information Technology	44%	13%
Education and Training	11%	27%

Figure 6. Percentage of Student Skillset Clusters by Sex

Skills by Sex

Skillset mappings to career clusters are different when summarized by sex (Table 5). Boys' self-reported skillsets were mapped into Information Technology as first (44%); Hospitality and Tourism as second (22%); and Education and Training as third (11%). Girls' self-reported skillsets were mapped into Hospitality and Tourism as first (41%); Education and Training as second (27%); and Information Technology as third (13%). The sex differences regarding skillset mapping to career clusters were consistent across all grade levels.

Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
Education & Training	Business	Human Services	Manufacturing	Manufacturing
Finance	Human Services		Marketing	
Hospitality & Tourism	Transportation			
Human Services				
Transportation				

Figure 7. Career Clusters not populated by Grade Levels

Career clusters

Even though the top six career clusters were the same for both schools, the percent students mapped to the career clusters differed. The top two career clusters for School A are STEM-related; the top three career clusters for School B are STEM-related. The most frequently identified cluster for School A is STEM; the most frequently identified cluster for School B is shared between STEM and Arts Audio-Video Technology and Communications. The least frequently identified cluster for School A is Arts Audio-Video Technology and Communications; the least frequently identified cluster for School B is Information Technology.

Career clusters by Grade

There was no discernible trend regarding specific career clusters identified by grade levels. However, there was a slight trend regarding the number of career clusters represented in each grade level. In grade 8, 5 of the 16 career clusters were not identified as likely for any students. By the 12th grade, every career cluster except Manufacturing was identified as a likely career cluster for at least one student (Figure 7).

Careers by Sex

Figure 8 and 9 present career cluster percentages by sex for each school. For School A, overall differences were found between boys and girls among the top six career clusters, with boys mapped to STEM and girls mapped to Health Science. No girls were mapped to Information Technology.

There were three career clusters heavily populated by girls in School B: Arts Audio-Video Technology and Communications (20%), Health Science (16%), and Agriculture (14%). For boys, the most frequent career clusters were: STEM (11%), Architecture (11%), Information Technology (7%) and Health Science (7%). No girls in School B were matched to the Information Technology cluster.

DISCUSSION

Careers that require STEM skills are not limited to engineering; Architecture, Health Science, Audio-Video Technology and Information Technology career clusters are part of a constellation of STEM-related careers. Using an expanded definition of STEM careers to include STEM-related careers, girls and boys in this study were predominately matched to STEM careers with different career clusters for boys and girls. The difference in career intents by sex is supported in the Tracey et al. (2005) research regarding sex and career interests.

The most frequently mapped skillsets included one STEM field: Information Technology. The other two most frequently identified skillsets, Hospitality and Tourism, and Education (See Table 3) may reflect high school student skills developed as a result of exposure to work in the service market or school settings. These skillsets are typical for high school students who work in sales or service jobs during high school. The result that two of the three most

Career Cluster	Girls	Boys
Agriculture, Food, and Natural Resources	9%	10%
Architecture and Construction	5%	10%
Arts, Audio-Video Technology, and Communications	6%	7%
Health Science	22%	7%
Information Technology	0%	9%
Science, Technology, Engineering, and Mathematics	8%	21%

Figure 8. School A Career Clusters by Sex

Career Cluster	Girls	Boys
Agriculture, Food, and Natural Resources	14%	5%
Architecture and Construction	2%	11%
Arts, Audio-Video Technology, and Communications	20%	6%
Health Science	16%	7%
Information Technology	0%	7%
Science, Technology, Engineering, and Mathematics	3%	11%

Figure 9. School B Career Clusters by Sex

frequently identified skillsets did not include STEM skills should motivate policy makers to develop initiatives for STEM businesses and professionals focused on providing STEM experiences for elementary, middle and high school students. Tracey et al. (2005) documented that there was a relationship between skills and interest, and consequently between interest and careers. Earlier exposure (before and during middle school) to STEM environments instead of sales and service jobs could increase the number of students who develop STEM skills before high school. Earlier exposure could also lead to increased skills, awareness and preferences for STEM careers. Without the exposure, some who may be excellent candidates for a STEM field career may never recognize that such a field would be a match for their abilities and interests.

For career mapping, boys tended to match with STEM and Information Technology careers; girls tended to match with Arts Audio-Video Technology and Health Sciences. School B data indicated the greatest boy/girl disparity (Tables 7, 8). One reason for this could be the fact that School B includes 11th and 12th graders. Tracey et al. (2005) analyses documented the trend for boys to alter career intents between the 10th and 12th grade. School A's boy/girl disparity could have a similar disparity once the school provides services for grades 11 and 12. Other reasons could include the fact that School B is an early college academy whose 11th and 12th graders take college level classes that may introduce additional career options to students.

Five of the six most populated career clusters are included in the constellation of STEM-related careers, though the order was slightly different for students in the two schools. This is in spite of the fact that students were distributed over 15 of the 16 clusters by 12th grade. As more clusters were populated, it was possible that STEM-related careers would not have been among the most populated mapped careers for students. The results show otherwise.

Younger students were mapped to fewer career clusters (11) than the older students (15). This trend is supported by Tracey's (2005) finding that career interests tended to change between the 10th and 12th grade as decisions about postsecondary options become realities.

NSSE data from 2010 indicated that about 25% of first year college students anticipated majoring in STEM careers, but a survey of senior college students reported only 20% anticipated graduating with STEM degrees (NSSE, 2010). NCES data (2011) indicates that about 27% of college degrees are awarded in STEM-related fields. Students in all grade levels from the two STEM schools studied have a far greater percentage (44% and 42%) anticipating STEM-related careers after graduation. These career intents should not change much according to the Tracey et al. (2005) research regarding stabilization of career intent by grades 9-12.

LIMITATIONS

Students in the two STEM high schools represent at least two groups: students with interests in STEM-related fields as well as students who shared in focus groups and personal conversations with the researcher that they desired to 'try something new.' Though some may minimize the findings of this study because portions of the students in the sample already have demonstrated an interest in STEM, the authors do not see this as a limitation. The research question was to determine if STEM high school students were anticipating STEM careers. Future research should address the question regarding whether STEM high school students anticipate STEM careers at a greater rate than students in traditional schools.

CONCLUSION

If the nation remains committed to increasing the number of high school graduates who enter the STEM pipeline, policy makers need to realize that initiatives to increase pre college students' exposure to STEM-related experiences should include students younger than high school age. Moreover, policy makers should design programs that take into account that girls and boys are interested in STEM fields but in different clusters of STEM-related careers.

This study provided evidence that STEM high school students expressed career intents in predominately STEM-related careers. Data from two graduating classes from School B provided evidence that these interests translated into college studies in STEM fields. In the first graduating class for School B (2010), over 50% of the graduates entered college to pursue STEM fields. In 2011 64% of the graduating class entered college to pursue STEM fields.

The findings from this study of students in two STEM schools suggests that between 42 and 44% of STEM school students hold STEM-related career intents, and that these intents resulted in more than half of the STEM school students majoring in STEM fields in college. This is double the national percentage of high schools graduates pursuing STEM-related college studies, suggesting that STEM high schools are increasing the number of students entering the STEM pipeline.

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