Family Factors Influencing Female Aerospace Student’s Choice of Major

Gail Zlotky
Wendy S. Beckman

Follow this and additional works at: https://corescholar.libraries.wright.edu/isap_2009

Part of the Other Psychiatry and Psychology Commons

Repository Citation

This Article is brought to you for free and open access by the International Symposium on Aviation Psychology at CORE Scholar. It has been accepted for inclusion in International Symposium on Aviation Psychology - 2009 by an authorized administrator of CORE Scholar. For more information, please contact corescholar@www.libraries.wright.edu, library-corescholar@wright.edu.
FAMILY FACTORS INFLUENCING FEMALE AEROSPACE STUDENT’S CHOICE OF MAJOR

Gail Zlotky and Wendy S. Beckman
Middle Tennessee State University
Murfreesboro, Tennessee

In an effort to understand the factors that influence female student choice of an aviation career, a qualitative study was undertaken. Female Aerospace students at Middle Tennessee State University were interviewed to determine if there were common factors that encouraged them to pursue education in aviation. A content analysis of the interviews was performed, and the most commonly cited factor was having parents who were supportive of education. It was noteworthy that the majority of interviewed students did not have parents who specifically encouraged aviation as a course of study, but instead were open to their daughter pursuing a career field that interested them. It was also found that most female students did not have family connections to aviation, but were the first in their families to pursue an aviation career. The continued existence of stereotypes regarding male and female roles in the aviation workplace was also confirmed.

The attraction of female students into the traditionally male-dominated fields of science, math, engineering, and technology (STEM) has become a national priority, as evidenced by the America COMPETES (Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science) Act, which was signed into law in August of 2007 (America COMPETES, 2007). Efforts are underway by industry, government, and academia to increase the representation of females in all of these areas, and aviation is no exception (Chavanne, 2008). Some indications point to improvement in this area. For example, Ison found that the number of women pilots in the United States has increased over the past ten years, that there are now more women enrolling in collegiate aviation programs than ever before, and that there are more female faculty members involved in aviation education than there has been historically (Ison, 2008).

Even given this focus of attention and the improvements indicated above, there is still much room for improvement in this area. An examination of the statistics available on the Federal Aviation Administration’s (FAA) website brings clarity to the scope of the problem (Federal Aviation Administration, 2007a, 2007b). For example, there were only 5,349 female certificated Airline Transport Pilots in the United States in 2007, out of a total of 143,953 Airline Transport Pilots. This means that only 3.7% of the pilots at the highest level of certification are women. The Commercially rated pilot numbers are slightly better, but even then only 6.2% of the Commercial pilots are female; similarly, only 6.8% of the nation’s Certified Flight Instructors are women. The maintenance area is even worse, with only 2% of the certificated A&P Mechanics being women. One area that is slightly higher is certificated Dispatchers, where 16.2% of those certified are women; but even this is obviously far below the level of parity with men.
To address the issue of increasing female representation into traditionally male fields, numerous studies have been done. Some of these have focused on arousing initial interest in these fields, while others have focused on retention of students once they are enrolled in a traditionally male program (Turney et al, 2002). Many of these efforts have come to the conclusion that the effect of long-held stereotypes cannot be ignored, but must instead be consciously addressed. Indeed, although recent studies have found that girls are now performing just as well in STEM high school preparatory courses as boys, female students still face the task of overcoming “…stereotypes long held by parents, teachers, and even girls themselves that boys are more suited to math-heavy studies and professions…” (Cavanagh, 2008,1).

The objective of this study was to identify the factors that either encouraged or discouraged female students from enrolling in the Aerospace Department at Middle Tennessee State University (MTSU). The impetus for conducting this study began during the 2007 academic year, when a survey of all graduating seniors in the Aerospace Department at Middle Tennessee State University revealed that only 16.67% of the class was female. Of those female students, 29% indicated that gender stereotypes had influenced their decision-making process when choosing aviation as a career field. This was of concern, as these students were the success stories – the graduating seniors. If nearly a third of the successful female students had experienced the impact of gender stereotypes, what effect did these stereotypes have on students as they chose their academic major? The researchers decided it would be useful to understand what factors led female students to enroll in the Aerospace Department at MTSU, as a first step in identifying a course of action to increase female enrollment. This study attempted to replicate, in limited aspects, a study of female undergraduate engineering students which was done at the University of Oklahoma from 2003-2005, in which efforts were made to identify the factors that effected students’ decisions to move into an engineering department (Walden & Foor, 2008). Instead of looking at all potential factors, the decision was made to limit the investigation to the influence of family members and friends on the decision-making process of selecting an undergraduate major.

Methodology

Approval was granted from the MTSU Institutional Review Board (IRB) on June 26, 2008, to conduct a human research subject interview study of female aerospace students (MTSU IRB # 08-340). Twenty female Aerospace students across all five Aerospace concentrations (Professional Pilot, Dispatch/Scheduling, Maintenance, Administration, and Technology) and of each class standing were interviewed by the researchers. The students responded to either a request made in an Aerospace class or to a sign posted in the Aerospace Department hallway, requesting female Aerospace student volunteers to participate in a short interview. The format of the interview was open-ended, with the following six questions asked of each interviewee:

1. Tell me about your relationship with your mother through your childhood and adolescent years.
2. Tell me about your relationship with your father through your childhood and adolescent years.
3. Has there been another person in your life besides your parents who has been very influential in your growth and development? If so, who, and what is their relationship to you?
4. What do you think influenced your choice to pursue aviation as a career?
5. Did any particular person suggest to you that aviation might be a good career choice? If so, who? What was your relationship to that person?
6. Has there been any important person in your life that did not support your career choice? If so, who? What was your relationship to that person?

The responses of the interviewed students were tape recorded so they could be reviewed for a content analysis. Notes were also taken by the interviewers, to supplement the data provided by the audio tape.

Findings

The first focus area of the interview was the investigation of each student’s relationship with their mother throughout their childhood. Content analysis revealed that eleven participants responded with the adjective “close” in their description of their relationship with their mother, six participants indicated within their responses the adjective “supportive”, and three indicated the adjective “good” (note, many participants used multiple adjectives in their descriptions). Only two students indicated that their relationship with their mother was not positive, with one indicating that the relationship was “rough” and the other indicating that they “fought a lot”. Eight participants commented specifically in their response to the first question that their mother had made clear to them the importance of obtaining a college education throughout their childhood years. Only one mother worked in an aviation-related field.

The next area of interest was the student’s relationship with their father throughout their childhood. Five participants responded with the adjective “close” in describing this relationship, while seven others indicated that either their father was “not involved in their lives”, or had worked long hours or been involved in other activities to such an extent during their childhood that they had hardly knew him. Seven participants specifically commented on the fact that their father expected them to obtain a college education.

Twelve of the interviewees indicated that there were people outside their immediate family who had an impact on their growth and development, including their choice of college major. The identified people included extended family (grandparents, aunts, uncles), teachers, godparents, and family friends. While most of these influencing people were indicated to be positive influences, there were three participants that indicated a negative influence was experienced from these individuals.

Questions number 4 and 5 overlapped somewhat, as for many students, what caused them to become interested in aviation turned out to be a particular person who suggested to them an aviation career. Three students indicated that their father had specifically mentioned aviation to them as a possible career, two indicated that their mother had done so, and one student indicated that both of her parents worked in aviation. One had a supervisor at a job mention the possibility of an aviation career to them, and one played soccer for a coach that was an airline pilot. Several
mentioned loving to fly commercially when vacationing as a child, while several others indicated that they had just “always had an interest” in aviation. There were several who responded that they were not sure what caused them to become interested in aviation. Overall, exactly half of the interviewees had experienced a particular person in their life who suggested that aviation might be a good career path for them to follow.

The final question was designed to determine if students encountered any resistance to their decision to major in an aviation field. Ten of the interviewees indicated that they had indeed experienced this negative influence. Three students indicated this resistance was from their mother, two indicated it was from their father, two indicated it was from their extended family (grandmother, mother’s family), two indicated it was from their friends, and one indicated it was from acquaintances. In particular, many of the students who were interviewed talked about the reaction of new acquaintances who learned of their intended major. While some indicated that these new acquaintances (typically other college-aged students) thought it was “neat” and “cool” that they were pursuing an aviation degree, exactly half indicated they often receive negative comments as well. One of the most predominant comments that the interviewees received and perceived as negative was, “Oh, so you’re going to be a flight attendant?” The students did not largely seem to interpret these reactions as being a “negative influence” on their career choice, but instead seemed to view them as a humorous side note.

Discussion

Several themes emerged from the content analysis of the participant interview tapes. First, with few exceptions, the female students characterized their relationship with their mother as being positive. In addition to the general support of their mothers, in many cases the students’ mothers made clear the value of education to their daughters throughout their childhood and adolescence. The female student’s relationships with their fathers were predominantly not described as being as close as the relationship with their mothers, but fathers were also described in many cases as having been supportive of educational endeavors. However, an area of concern to the researchers was whether or not the interviewees were completely candid about their family relationships during the interview. Given the overwhelming positive responses that were received regarding particularly their relationship with their mother, it was wondered if the students were just giving what they perceived to be the “correct” answer to the question. For future research, having female students complete an anonymous survey investigating specifically family relationships and the influence of those relationships may provide more insightful responses.

Second, the majority of interviewees indicated that there had been someone outside of their immediate family that was influential to their growth and development. In some instances, this person turned out to be an individual who had suggested aviation as a career, while in other cases it was just someone who was supportive of their educational efforts. While ten of the students interviewed did have a particular person suggest to them that aviation might be a potential career choice, only six interviewees actually knew someone who worked in the aviation industry prior to enrolling at MTSU. So, for 70% of the students, their college careers were started with very little knowledge of the field of aviation. This number is almost exactly the same as what was found for all Aerospace students in a previous study (Beckman & Barber, 470.
2007). This means that a lack of specific knowledge of the field does not seem to be a factor that discourages young women any more than it discourages young men.

Third, and perhaps most interesting, is the revelation of how predominant negative stereotypes of women in the aviation field still are. While the majority of interviewees indicated that the people influencing their growth and development were supportive influences in their life and had stressed the importance of education, half also reported that a number of these same influential people had negative reactions to their choice of aviation as a major. In addition, while most students seemed to view the casual negative comments of acquaintances with amusement, it was interesting to discover that there is still this level of gender-based stereotypical attitudes prevalent among today’s college-age students. This finding indicates that, as a society, even in the younger generations, we are still not past the historical view of “male” versus “female” work role stereotypes. This indicates that current efforts to make girls aware of their career options from the youngest ages are indeed critical, as the issue is not educational preparation or capability, but overcoming historical attitudes about female career choices. Changing a cultural climate takes time, but it is clear that women who work in the field of aviation need to actively serve as mentors and role models for female students, in an effort to counterbalance societies’ remaining stereotypical attitudes.
References


