Gender considerations in courses selected by secondary students

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Gender considerations in courses selected by secondary students

Abstract
Course selection by secondary students has been studied from many different perspectives over the past decade. Intellectual ability, social class, and cultural distinctions have been discussed as causes of segregation in course selection. A less studied causal factor of segregation in course selection has been gender differentiation. Recently, a well publicized concern has surfaced regarding the lack of women entering the fields of mathematics and science, particularly at advanced levels. Investigations have disclosed that even at the high school level, females have not chosen mathematics and science courses. Some researchers argued that it was mathematical reasoning ability that females lacked which caused them not to choose courses in mathematics and science (Benbow & Stanley, 1983). Other (Pallas & Alexander, 1983) disagreed with that conclusion. Certainly, the division was not because females were enrolled only in vocational track courses: many of those same females of high intelligence who were not choosing mathematics and science were choosing advanced foreign languages and English courses in the college track (Gaskell, 1984).
GENDER CONSIDERATIONS IN COURSES SELECTED BY SECONDARY STUDENTS

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Course selection by secondary students has been studied from many different perspectives over the past decade. Intellectual ability, social class, and cultural distinctions have been discussed as causes of segregation in course selection. A less studied causal factor of segregation in course selection has been gender differentiation.

Recently, a well publicized concern has surfaced regarding the lack of women entering the fields of mathematics and science, particularly at advanced levels. Investigations have disclosed that even at the high school level, females have not chosen mathematics and science courses. Some researchers argued that it was mathematical reasoning ability that females lacked which caused them not to choose courses in mathematics and science (Benbow & Stanley, 1983). Other (Pallas & Alexander, 1983) disagreed with that conclusion. Certainly, the division was not because females were enrolled only in vocational track courses: many of those same females of high intelligence who were not choosing mathematics and science were choosing advanced foreign languages and English courses in the college track (Gaskell, 1984).

The segregation of males and females in certain high school college track courses has been intriguing to researchers because they have assumed that there must be an innate factor, such as mental reasoning, for the difference in courses selected by males and females. The differences were said to be vertical by some researchers because
only the college track students were studied (Gaskell, 1984). But the sexual division that appeared in mathematics and science high school courses did not disappear in the vocational track courses. This gender division was thus said to be horizontal, that is, within the academic track and within the vocational track. In the vocational track, females were taking secretarial, business, and home economics courses while males were selecting automobile mechanics and industrial arts courses (Gaskell, 1984).

Educational researchers have examined differentiating factors which might explain gender considerations in course selection. Many of these factors have been beyond the school's control. Cultural norms, educational patterns, legal mandates, and societal roles were the most prevalent factors cited by researchers over which the school had limited control (Licht, 1984; Gaskell, 1984; Frankel & Gerald, 1980; Benton, 1982; England, 1982). These are examined in the first part of the paper.

When the differentiating factor of cultural norms was investigated, several reasons some students chose vocational track courses and others chose academic track courses were disclosed, but ability was not recognized as one of those reasons (Licht, 1984; Gaskell, 1984). No significant discrepancy was found between the ability of vocational and academic students (Licht, 1984). Students believed that they decided which track they wanted to take in high school. Those who chose the vocational track made the decision not to be
in the academic track because they wanted courses which were "fun, easy, and useful" (Gaskell, 1984). They felt school was a waste of time, and they wanted to get out into the world where things made more sense to them. This led Gaskell to suggest that the vocational track was an attempt to ease the discomfort of these particular students.

When one examines educational patterns, it appears girls and boys have reached parity. In fact, the projected numbers of high school graduates ranks females at approximately 51% of the total graduation population (Frankel & Gerald, 1980). Because females have maintained a slight majority of the nation's population, this ranking appears to suggest total equity. Females rank only slightly behind males as recipients of bachelor's degrees and slightly exceed males in receiving master's degrees.

However, this statistical comparison significantly changes when the number of doctorate degrees is examined. In 1980, females received only 28.9% of the doctorates granted (Frankel & Gerald, 1980). This is an obvious discrepancy. Furthermore, the high school, college, and master's degree statistics need to be closely examined. What appears to be parity in actual numbers of graduates breaks down when the majors and degrees of these men and women are examined. Equal number of men and women are enrolled in introductory science and mathematics courses in college, but by graduation, only 29% of the physical science majors and only 13% of the engineering majors are women (Matyas, 1985).
Another factor over which the school had no direct control was the passing of Title IX (United States Code, 1983) and the Iowa Code Law of Unfair and Discriminatory Practices in Education (Benton, 1982). These laws mandated that all students be offered every opportunity available in high school. Yet several years later, the gender gap remained in many course areas. Statistics for the 1984-85 Iowa high school population still showed the discrepancy. In trade and industrial courses, boys dominated the enrollment with approximately 90% of the population. Girls remained dominant in office occupation courses with nearly 85% (Iowa Department of Public Instruction, 1985).

Apparently, the least controllable factor for the local school is the influence the society has on gender division. Every institution in the United States has felt the influence of society. Likewise, the school system has been a product of or, perhaps, a victim of society. Students, faculty, and administrators bring to the school predetermined gender roles which play an important part in influencing the school's atmosphere. The gender roles affect the kinds of skills and thoughts appropriate for male and female students (England, 1982). However, to simply say the discrepancy in enrollment of males and females in certain areas was due to these predetermined roles does little to explain the variance. Particular roles for males and females created largely by society (however unintentionally) which affect course selection have emerged from the literature.

Since the middle of the 19th Century, one gender-based social
expectation has been academic achievement. Girls were much more likely to graduate from high school (Gaskell, 1984). Girls received more "A's" than boys in high school (Licht, 1984), and girls were less likely to need remedial work in school (Gaskell, 1984; Hock & Curry, 1983). However, in high school, girls have taken courses, such as clerical courses, home economics, and language courses, which result in lower status, lower paying jobs, and fewer opportunities for advancement (Gaskell, 1984). This has been true of academic track students as well as vocational track students. Girls took fewer science and mathematics courses in high school, which lessened their opportunities to choose science and mathematical careers (Matyas, 1985). The clerical courses have been very attractive for vocational track females because they have offered them new typewriters and job placement. Matyas (1985) believed this to be a subtle yet devastating technique of keeping the girls "down on the farm" and placing them in dead-end jobs.

Although the schools did not have direct control over some factors which contributed to gender-based course selection, the school did have control over others. Perpetuating traditional career choices and the masculine orientation of high schools, teacher expectations, and sexual harassment have been other factors which have contributed to the problem of gender-based course selection (Gaskell, 1984; LaTorre et al, 1983; Brandt & Hayden, 1974; Gaskell, 1985). Because schools have influence over these factors, schools need to be aware of them
and examine them more closely. These factors are the focus of the balance of the paper.

Career choice has been a consideration in gender differences in course selection. This has been particularly evident in the vocational track students. Gaskell (1984) discovered most vocational track girls believed that there were clerical jobs "out there" even though this information was not correct. The girls thought they should take advantage of the opportunities they had to learn to type and take shorthand. Frequently, these girls did not like to type. Gaskell's study concluded that the girls took these courses because they would then always have that skill. Therefore, they believed they would be employable. Also the clerical courses lent themselves to opportunities to work in an office for a short time. This idea appealed to many girls who wanted to work for a few years before they married and had children.

Vocational track boys in Gaskell's study (1984) saw their choices as much more left to chance, citing several contacts who might offer them jobs when they graduated. Their jobs had little to do with the courses they took. One of the main arguments for having the vocational track in high school was to prepare the students who were not going to further their education but go directly into the working world. Goodlad (1984) pointed out that vocational education was virtually irrelevant to job fate. So this belief about job opportunities for the vocational track students existed only in the minds of the students.
Other factors often cited were the role of the teacher and the teacher's expectations. Several years ago, teacher expectancy researchers, Rosenthal and Jacobsen, suggested students' IQ's did not change because of teacher expectations. However, ability was affected by teacher expectations (Rosenthal & Jacobsen, 1968). Their conclusion has been debated and studied passionately by many, including Brophy and Good (1972). Replications of Rosenthal and Jacobsen's study usually showed that performance was influenced by teacher expectations more than IQ scores were. In addition, the sex of the student and the teacher did follow some patterns regarding teacher expectations. Brandt and Hayden (1974) found in their study that generally male teachers enjoyed teaching underachievers while female teachers preferred overachievers. Therefore, underachievers had more success with male teachers while overachievers had more success with female teachers. In schools where there is a predominance of either male or female teachers, students may be at a disadvantage because of their achievement pattern. As underachievers tend to be boys (Hock & Curry, 1983), if the school has a predominance of female teachers, the underachievers would be disadvantaged. This dynamic would make the gender difference even more pronounced.

Much of the teacher expectancy which has affected gender-based course selection has been subtle and somewhat subconscious. There have been many times when teachers unconsciously made decisions which influenced the lives of the male and female students. Some of the
subtle decisions teachers made have influenced gender differences in science and mathematics course selection by high school students (Matyas, 1985). Science and mathematics teachers must be particularly aware of the gender problem. Matyas' research demonstrated that science classrooms with a bias-free atmosphere included three general characteristics: (1) The teacher's expectancy was the same for boys and girls. (2) The teacher provided career information which included both male and female role models. (3) The textbooks and materials selected were gender balanced (Matyas, 1985). Even though these characteristics were developed for science and mathematics classrooms, any subject area could use these ideas to produce a bias-free atmosphere. These characteristics make it possible for both male and female teachers to provide an equitable classroom environment.

Another factor which contributed to the gender division of course selection was the predominantly masculine orientation of the secondary school. A study conducted by LaTorre and others (1983) attributed the discomfort felt by seventh grade girls to the more masculine orientation of secondary schools. Testing at the beginning of the school year indicated that there was little difference in discomfort and alienation between boys and girls. However, at the end of the year, the girls had developed alienation and neuroticism. LaTorre attributed these differences to the masculine orientation of the school.
The masculinity of secondary schools did not come about merely because of the number of male teachers in these institutions. The predominance of male teachers made an impact on secondary schools just as the predominance of female teachers made an impact on elementary classrooms. But both female and male teachers in secondary schools contributed to the masculine atmosphere by giving attention to boys while constantly disciplining them (England, 1982) and by talking generally more about men than about women in the classroom (Marland, 1983). By disciplining the male students more, the time spent with male students was unequal to that spent with female students. To compete with males for the teacher's attention, Hock and Curry (1983) found masculine behavior in females contributed to successful academic achievement. Many girls in this study who achieved high academic scores perceived themselves as similar to their fathers. In order to achieve academic success in the masculine setting of the high schools, the girls imitated their fathers. This perpetuated the masculine orientation of the high schools.

Another cause which was cited occasionally as a reason for the gender division in course selection was sexual harassment. Although this factor has been given media attention in many arenas, surprisingly it was not mentioned often in this situation. Gaskell (1985), however, discussed this harassment as subtle but deadly. The only girl in an automotive class would be tolerated by male teachers, yet viewed as a unique entity in the class. This subtle harassment
could prove to be destructive in the performance of this girl and a deterrent to other girls interested in taking the course.

Rosenbaum (1976) also reported that schools made it more difficult for females than males in college track courses. He found no difference between ability and effort among male and female students. He discovered only 23% of the total female population was enrolled in college track courses while 36% of the total male population was enrolled in college track courses. Because Rosenbaum found no variance in ability or effort of boys and girls, he suggested that the division was due in large part to the way females were treated in the college track courses.

Parents were not considered a significant factor in determining course selection. Students saw the choice as theirs, not their parents (Gaskell, 1984). This was true no matter how much the school influenced the students' decisions. Even though students did not perceive their parents as significant in course selection decisions, most students perceived themselves as very similar to their parents (Hock & Curry, 1983). Obviously the parental role in helping to shape the lives of their students was more significant than students thought. However, by the time the students were making decisions about course selection, the parents were not a direct influence in the decision.

One of the most evident themes throughout the literature of gender-based course selection was that more studies and research
need to be done. Most studies which have looked at differences in course selection have dealt with decisions students made between academic and vocational track courses. Why do working-class students choose vocational courses? Other studies have researched race as a factor of course selection. Gaskell (1985) pointed out that gender as well as race and class should be studied because of its high relationship to the courses students take. Course selection has been researched by West for the National Center for Educational Statistics (1985). He cited four distinct course taking patterns, but nowhere was there mention of gender distinction in course selection. As women's and men's roles evolve, perhaps schools should look at their roles in balancing course enrollments by addressing and examining each factor concerning gender-based course selection.

Equally important to the decrease of the gender distinction in course selection is the need for schools to change the traditional and limiting roles which they have been assigned girls and boys. Only then will schools be able to reflect the broadening roles of males and females to allow them to venture into arenas which have had gender-biases attached. Once the school redirects traditional male and female roles, the teachers, students, and society could place equal value on the students and allow them the freedom to explore any avenue of education.
References


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