The Transition Experience from High School to College: A Look at Single-Sex Versus Coeducational High School Female Graduates at the Collegiate Level

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by

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ABSTRACT

THE TRANSITION EXPERIENCE FROM HIGH SCHOOL TO COLLEGE: A LOOK AT SINGLE-SEX VERSUS COEDUCATIONAL GRADUATES AT THE COLLEGIATE LEVEL

by Colleen Keaney

This study examined the impact of the transition to a coeducational (coed) college on female single-sex vs. coed high school graduates on academic achievement, social behavior, and psychological well-being, as well as their gender-related beliefs in college. Previous research has documented that women from single-sex schools benefit from their education academically both during and after high school, and have less gender-stereotypical beliefs than their coed peers. Other research has shown that coed women benefit psychologically over single-sex women because of their high school environment. This study found that single-sex women perform better academically in college than coed women, but experience larger decreases in comfort in their transition to college. However, no significant differences were found in psychological well-being or gender-stereotypical beliefs.
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INTRODUCTION

Most studies examining the benefits of single-sex versus coeducational (coed) high schools have primarily concentrated on academia, and the conclusions largely indicate that single-sex high schools provide an environment that is more conducive to learning for girls (Bryk, Lee, & Holland, 1993; Lee & Bryk, 1986; Riordan, 1990; E. Trickett, P. Trickett, Castro, & Schaffner, 1982). Single-sex high schools also foster a greater sense of achievement and aspiration in their students, which may also have long-term effects (Lawrie & Brown, 1992; LePore & Warren, 1997; Lee & Marks, 1990; Watson, Quatman, & Edler, 2002). In addition, girls attending single-sex high schools have less stereotypical ideals related to gender (Bryk et al., 1993; Lawrie & Brown, 1992; Lee & Bryk, 1986; Lee & Marks, 1990). Although there has not been much research on social aspects, the research that does exist in this area tends to favor coed high schools, as this environment is less stressful and less academically rigorous (Dale, 1974; Schneider & Coutts, 1982).

I am focusing on women because most benefits are found for women rather than men. Since male students tend to dominate in the classroom while female students tend to withdraw and become more passive (Orenstein, 1994), women who have attended single-sex schools may be more likely to experience changes in their social behavior patterns because they may feel more self-conscious or intimidated by men. Based on the previous research, I expected to find that girls who attended a single-sex high school have a more difficult social and academic transition to a coed college than girls who attended a coed high school, while also being less sexist.
The vast majority of studies on single-sex high schools have focused on the advantages they offer high school girls that coed schools do not. Most of this research concentrates primarily on academic areas such as achievement, motivation, and career aspirations. Specifically, Lee and Bryk (1986) found that girls in single-sex schools displayed a greater interest in academics and made greater gains in reading, science and overall educational ambition throughout their high school career than girls who attended coed high schools. Students in all-girls schools were also more likely to associate with peers who have strong academic interests, and they were more likely to be interested in mathematics and English (Bryk et al., 1993). From sophomore to senior year of high school, the positive effects of attending a single-sex high school only increase—gains in reading and science achievement were the most statistically significant (Bryk et al., 1993).

Many studies have also examined time spent on homework and extracurricular activities in both single-sex and coed high schools. Students attending single-sex schools spend much more time on homework—especially the girls (Bryk et al., 1993). Single-sex students also spend more time on homework daily, are more likely to spend time over the weekend on homework, and have less free time for extracurricular activities and in general (E. Trickett et al., 1982). A study examining Catholic single-sex and coed high schools found that in their sophomore year of high school, 60% of girls in single-sex schools spent five or more hours per week doing homework whereas only 45% of girls in coed schools did (Riordan, 1990). Their senior year, 55% of girls in single-sex schools reported spending five or more hours per week doing homework, whereas only 46% of
girls in coed schools did (Riordan, 1990). A New Zealand study revealed similar results to these American studies: Students in single-sex schools were significantly more likely to spend time (both in and out of school) on their homework and studies (Jones, Shallcrass, and Dennis, 1972). They also found that 41% of the girls in single-sex schools wanted to be remembered as a brilliant student, versus only 26% of the girls in coed schools (Jones et al., 1972).

Another major area of study concerning single-sex versus coeducational high schools is related to educational and career aspirations. The proportion of girls at single-sex high schools who thought they would finish college was considerably higher than those who attended coed schools (LePore & Warren, 1997). Similarly, girls who went to a single-sex high school had significantly higher educational aspirations and attended more selective colleges than coed high school graduates (Lee & Marks, 1990). Along with having higher educational goals, girls who attend single-sex schools tend to have both higher ideal and realistic career aspirations (Watson et al., 2002). Girls in single-sex schools also are more likely to want to pursue more prestigious jobs in the future than girls who attended coed schools (Lawrie & Brown, 1992).

More advantages of attending a single-sex high school have been offered regarding the better educational environment that single-sex high schools can provide for their students. Riordan (1990) found that in all-girls schools, the students perform much better academically than girls who attend coed schools. He also found that girls at single-sex schools show more order and discipline. E. Trickett et al. (1982) also found that the scores of the single-sex schools were higher than the coed schools on the following six
dimensions: involvement, affiliation (with teacher), task orientation and competition, order and organization, and teacher control.

Almost all of this research is limited to these effects and experiences of these female students while in high school. However, a few studies have examined the transition experience of female students from a single-sex high school to college. For example, one study indicates the benefits of attending a single-sex high school in finding that female college first-years who attended an all girls high school showed significantly less of a “fear of success” than those who attended a coed high school (Winchel et al. 1974).

Another study illustrates some long-term benefits of attending a single-sex rather than a coed high school. In Riordan’s (1990) analysis of the National Longitudinal Study of the High School Class of 1972, he found that senior girls in single-sex high schools had a significantly higher cognitive ability in both verbal and math areas. Even after controlling for parental socioeconomic status, there is still a significant difference in cognitive ability of these 1972 graduates, favoring those who went to single-sex schools. Later, in 1979 (seven years after graduating from high school), women who went to a single-sex high school had significantly higher verbal ability and mathematical ability. Attending a single-sex high school may have benefits that last even after transitioning out of that specific environment.

*Psychological Well-Being*

However, emphasis on order and discipline in the concentration on academics has a cost. Specifically, research has highlighted that some indicators of psychological well-being, such as self-esteem and overall happiness, are greater among coed than single-sex
students. For instance, coeducational schools are viewed as being more “affiliative and
pleasure-oriented” (Schneider & Coutts, 1982, p. 902). Also, coed schools (as compared
to single-sex schools) are perceived by their students as “more gregarious, group-
centered, and friendly, more tolerant of noncompliance, spontaneity, and impetuosity, as
more conducive to the development of feelings of self-confidence and self-respect, and as
reflecting less prejudiced and irrational thinking” (Schneider & Coutts, 1982, p. 902).
Students preferred the atmosphere of coed schools and were happier in coed schools
mainly because (as their most common reason given) that there was too much stress
placed on academic work and success in single-sex schools (Dale, 1974).

This element of greater psychological well-being seems to have lasting effects. In
examining the transition for female students from a single-sex or coed high school to a
coed college, Dale (1974) found that among girls educated in a single-sex high school,
20.5% of those who went on to coed colleges were “very happy,” while 55.2% were
“happy” (total of 75.7% happy or very happy), whereas among those who attended a coed
high school and coed college, 37.3% described themselves as “very happy” while 53.9%
described themselves as “happy” (total of 91.2% as happy or very happy). This study
indicates a possibly easier psychological or emotional transition to a coed collegiate
environment for female students who attended a coed instead of a single-sex high school.

Despite this evidence in favor of coed schools in the realm of psychological well-
being, effects appear to dissipate over time. Riordan’s (1990) analysis of the National
Longitudinal Study of the High School Class of 1972 revealed that in 1986 (14 years
after graduating from high school), virtually no difference was found in marital
outcomes, self-esteem, or locus of control between women who attended a single-sex or coed high school.

**Gender-Related Beliefs**

Although there is evidence of greater psychological well-being in coed school students, some studies have found reduced gender stereotyping in single-sex high school students compared to coed high school students. Girls who attended a single-sex high school had less stereotypic ideas during the last two years of high school regarding the woman’s role in the family than girls who attended a coed high school (Lee & Marks, 1990). Four years later, this finding was still true, although the researchers’ focus changed from the role of the woman in the family to the role of the woman in the workplace (Lee & Marks, 1990).

Several other studies have reiterated this idea of decreased gender stereotyping in single-sex schools. Girls in single-sex schools were less likely to have stereotypical ideals of sex roles (Lee & Bryk, 1986). Similarly, students who attended all-girls schools were significantly less likely to hold stereotypic sex-role attitudes than girls in coed schools, and girls who attended single-sex high schools showed a decline in stereotyping from sophomore to senior year in high school (Bryk et al., 1993). In general, girls who attended coed schools gave the most stereotypical responses about gender roles (Lawrie & Brown, 1992).

**Social Transitions**

Many studies have examined these effects of single-sex and coed high schools, but there is still a big gap in the research dealing with the social transition of single-sex high school graduates entering the collegiate coed environment. The research thus far
mainly emphasizes the academic and psychological effects of attending a single-sex high school, but it largely fails to explore how all girls high school graduates will deal with being in a social and academic environment with the gender composition so starkly different from the one they were accustomed to in high school (see Dale, 1974, for an exception).

Despite the lack of specific research on the transition from a single-sex or coed high school to a coed college, some predictions can be made from theories of social transitions. For example, Ruble and Seidman (1996) define a social transition as a “passage or change from one place, state, condition, style, and so on, to another” (Waite, 1994) and the overall “changes in the relations between persons and context” (831). They emphasize and distinguish four temporal phases: Prior State (time before the onset of the transition), Onset (the time of the actual transition), Change (the short-term response to the transition), and Equilibrium (the long-term impact of the transition).

The first phase in this temporal model is the most salient in the transition from a single-sex high school to a coed college, as it illustrates the role of the previous environment to the contrasting present one. The Prior State involves stable relationships and patterns within the context of the situation before the onset of a transition (Ruble & Seidman, 1996). This background set of experiences is crucial in determining how the individual will cope with the context of the new situation during the transition experience. It will also be the means through which the individual makes comparisons and constructs meaning for his or her new situation. Clearly, then, for women who attended a single-sex high school, this environment may act as an obstacle and hinder
their transition to a new environment that is coed, as this is a “shift from a homogeneous to heterogeneous environment” (Ruble & Seidman, 1996, p. 850).

With the disruption caused by the onset of a transition, people typically experience a sense of loss in their identity, status, or their attachment to others (Ruble & Seidman, 1996). The transition from high school to college is a major life event for all students, as they experience unfamiliar territory and are forced to make new friendships and relationships with others, while they are also trying to assimilate to their new surroundings. However, girls who attended a coed high school are accustomed to being around men in the classroom; therefore, they may experience greater ease and comfort when making the transition to a coed college because their situation is not entirely different from the one they were familiar with before college. On the other hand, girls who attended a single-sex high school may experience more of a disruption in their lives, because the gender composition of the classroom and their daily interactions differs more significantly from that which they formerly experienced in their high school environment. This situation may make the onset of the transition more disruptive for single-sex high school graduates, since the social differences are more extreme in comparison to those for coed high school graduates.

Overview

With respect to single-sex versus coeducational high school graduates attending a coed college, three important areas in particular have been neglected in the literature. Two of these areas include classroom comfort and interactions with male peers. Because women from single-sex schools were not exposed to other male students in classroom settings while in high school, it is important to explore how this change in their school’s
gender composition will affect both their comfort level and the extent to which they interact with their male peers in both a classroom and a social context.

Another important area that has been previously unexamined is drinking behavior. Binge drinking is on the rise (Wechsler & Nelson, 2001) and two strong predictors of college binge drinking are being involved in the Greek system and living in a dorm (Wechsler & Dowdall, 1995). Because these two factors are present at Miami University’s campus as well as many other coed campuses, it is especially important to examine the extent to which women are affected by this type of college climate, and whether or not the type of high school they attended had an impact on their social adjustment.

This study aims to examine the differences in these areas, comparing female single-sex and coed high school graduates in a coed collegiate environment. This study employs a retrospective methodology, examining single-sex and coed high school graduates’ present college experiences as well as how they remember their high school experiences. Single-sex and coed high school graduates will be referred to as single-sex and coed women.

Because of the gender-homogeneous experience of female single-sex high school students and the lack of interaction they may have experienced with male students while in high school, I expected to find that single-sex women will report a bigger change in their behavior and beliefs from high school to college. These expected differences of single-sex women relative to their coed peers include a greater increase in drinking behavior from high school to college, a greater drop in classroom comfort, and a greater increase in frequency of interaction with men, as well as a bigger drop in the comfort
level in interacting with men. With these additions to what has previously been studied, I also expected to find a greater drop for single-sex women in self-esteem, self-efficacy, proactivity, and a less internal locus of control, due to the greater disruption this social transition will cause in their daily activities and interactions. I also expected to find that single-sex women will be more likely to identify themselves as feminists, will more strongly endorse feminist beliefs, and will be less sexist and less gender stereotypical than their coed peers.
METHOD

Participants and Procedure

The participants were 109 women (61 female coed high school graduates, 48 female single-sex high school graduates) who were students at Miami University in Oxford, Ohio. Their ages ranged from 17 to 22 and their grade level varied from first-years to fourth-years. Single-sex women ($M = 19.6, SD = 1.48$) were older than coed women ($M = 19.1, SD = 1.00$), $F (1, 107) = 4.78, p = .031$.1

Eighty-four participants were recruited through the introductory psychology participant pool. Sixty of the coed high school graduate participants and 24 of the single-sex high school graduate participants were obtained through this procedure. Participants received partial credit toward their introductory psychology course for their research participation.

Eleven participants were volunteers from a sorority and not compensated for their time. The remaining 14 participants were recruited from flyers posted on campus and paid $10 for their time.

A female surveyor distributed informed consent forms and questionnaires to participants and informed them that all answers were completely voluntary and anonymous, and that they were free to cease participating at any time without penalty. The survey took approximately 40-45 minutes to complete, and participants were debriefed orally and given a written debriefing once everyone had finished.

Questionnaires

Participants answered all questions on a 5-point scale, with higher levels indicating greater frequency or endorsement of the given variable, unless otherwise
noted. The first half of the questionnaire dealt with their high school experiences, behaviors, and beliefs, and the second half dealt with college.

*Academic achievement.* Participants reported their ACT score as well as their current college GPA.

To measure the level of classroom comfort, participants rated 7 items about their perceived encouragement/discouragement by teachers and fellow classmates, level of comfort and willingness to volunteer answers in class, as well as level of embarrassment in getting high grades in both high school and college. Internal consistency for this measure was acceptable in high school (alpha = .73) and in college (alpha = .68).

*Drinking behavior.* Participants completed the Alcohol and Other Drugs Abuse -- Adolescents Test (Knight et al., 1999), which is a measure of substance use problems among adolescents. Any mention of other drugs was omitted and replaced or left with just alcohol to measure strictly for problematic drinking behavior. Participants rated their frequency of each behavior for high school and college. Internal consistency was high for both high school (alpha = .84) and college (alpha = .80) measures.

Participants also reported average number of nights drinking during the week, drinks consumed in a night, and drinks consumed in an hour in high school and college. These numbers were averaged to obtain one score for overall frequency of drinking. Internal consistency was high for this measure in high school (alpha = .75) and college (alpha = .82). Participants were also asked at what age they began drinking on a regular basis.
Interaction with men. Participants rated their comfort level and frequency of interacting with men in both high school and college. Two types of interactions, drinking and not drinking, were assessed.

Psychological well-being. To measure proactive attitudes, participants completed the Proactive Attitude Scale (PAS; Schmitz & Schwarzer, 1999), which is a measure similar to psychological measures of optimism. Participants completed the 9 items for both high school and college. Internal consistency was high for both high school (alpha = .81) and college (alpha = .82) measures.

For self-efficacy, participants completed the General Self-Efficacy Test (Schwarzer, 1992). Participants responded to 10 items for both high school and college. Internal consistency was very high for both high school (alpha = .87) and college (alpha = .91) measures.

To measure self-esteem, participants completed an adapted version of the Self-Esteem Scale (Rosenberg, 1965) for both high school and college. Five items were included from the original version, and two similar items were added. Internal consistency was very high for both high school (alpha = .92) and college (alpha = .94) measures.

Gender-related beliefs. To measure both benevolent and hostile sexist attitudes, I used the 22-item Ambivalent Sexism Inventory (Glick & Fiske, 1997). Internal consistency was high for benevolent (alpha = .77), hostile (alpha = .80) and overall (alpha = .80) sexism measures.

Participants also rated how likely the ideal man and woman are to possess gender-stereotypical traits. The different dimensions included items from positive personality,
cognitive, physical, and negative personality categories (Diekman & Eagly, 2000).

Internal consistency was high for ideals about women (alphas = .73-.82) and men (alphas = .84-.85).

Participants answered questions regarding attitudes toward feminism. Questions were answered on a scale of 1 to 7, with a higher number indicating greater agreement. Internal consistency was high for this measure (alpha = .78). A separate question, asking “Are you a feminist?”, was answered “yes” or “no”.

Demographics. Participants provided personal information such as age, year in college, and type of high school (single-sex or coed) attended.
RESULTS

Academic Achievement

Single-sex women reported a higher GPA ($M = 3.20$, $SD = 0.42$) than coed women ($M = 2.97$, $SD = 0.53$), $F(1, 75) = 4.60, p = .035$, and marginally higher ACT scores (Single-sex: $M = 27.7$, $SD = 2.97$; Coed: $M = 26.6$, $SD = 3.52$), $F(1, 90) = 2.52, p = .116$.

Data were submitted to a 2 (time) × 2 (type of high school) analysis of variance. Classroom comfort decreased from high school to college, $F(1, 107) = 92.96, p <.001$. However, coed women were even less comfortable in the classroom than single-sex women, $F(1, 107) = 3.92, p = .05$. The overall decrease in comfort over time was marginally moderated by school, $F(1, 107) = 3.53, p = .063$. While single-sex women, $F(1, 47) = 56.92, p <.001$, and coed women, $F(1, 60) = 35.37, p <.001$, decreased in classroom comfort from high school to college, coed women experienced less of a decrease than single-sex women from high school to college. Also, single-sex women were more comfortable than coed women in high school, $F(1, 107) = 7.22, p = .008$, but they were not significantly different in college (see Table 1 for means).

Drinking Behavior

Single-sex women ($M = 17.6$, $SD = 1.48$) started drinking at a marginally older age than coed women ($M = 17.1$, $SD = 1.34$), $F(1, 83) = 2.60, p = .110$.

Data were submitted to a 2 (time) × 2 (type of high school) analysis of variance. Overall, problematic drinking behavior significantly increased from high school to college, $F(1, 106) = 14.58, p <.001$, and this increase over time was moderated by school, $F(1, 106) = 4.75, p = .031$. Although single-sex women showed a significant increase in
problematic drinking behavior from high school to college, \( F(1, 46) = 26.44, p < .001, \) coed women did not. Despite these differences in change over time, comparisons between single-sex and coed women were not significantly different within high school or college (see Table 2 for means).

Frequency of drinking also increased from high school to college, \( F(1, 106) = 51.39, p < .001, \) and this increase was marginally moderated by school, \( F(1, 106) = 1.90, p = .170. \) Although both single-sex women, \( F(1, 46) = 38.23, p < .001, \) and coed women, \( F(1, 60) = 17.22, p < .001, \) showed significant increases in frequency of drinking, single-sex women had a somewhat greater increase than coed women from high school to college. As with problematic drinking behaviors, single-sex and coed women were not significantly different in frequency of drinking in both high school and in college (see Table 3 for means).

*Interaction with Men*

Frequency of interactions with men were analyzed in a 2 (type of high school) × 2 (time) × 2 (type of interaction) ANOVA, with the last two factors manipulated on a within-subjects basis. Overall, frequency of interaction increased from high school to college, \( F(1, 76) = 6.13, p = .016, \) and the frequency of interaction with men was marginally greater while not drinking than while drinking, \( F(1, 76) = 2.84, p = .096. \) The significant Interaction Type x Time effect, \( F(1, 76) = 16.82, p < .001, \) showed that frequency of interaction with men while drinking increased from high school to college, \( F(1, 77) = 13.40, p < .001, \) but frequency of interaction with men while not drinking did not (see Tables 4 and 5 for means).
Also, the increase over time in frequency of interacting with men was marginally moderated by school, $F(1, 76) = 3.09, p = .083$. Single-sex women significantly increased in frequency of interactions with men from high school to college, $F(1, 34) = 6.70, p = .014$; however, coed women did not. Both in high school and in college, single-sex and coed women did not report significant differences in their frequency of interaction with men (see Table 6 for means).

Comfort in interactions with men was analyzed in a 2 (type of high school) × 2 (time) × 2 (type of interaction) ANOVA, with the last two factors manipulated on a within-subjects basis. Overall, women were more comfortable interacting with men while not drinking than while drinking, $F(1, 76) = 5.41, p = .023$. Although there was not a significant difference from high school to college, the Interaction Type x Time interaction, $F(1, 76) = 7.36, p = .008$, reflected a nonsignificant decrease over time in comfort in not drinking interactions and a nonsignificant increase over time in comfort in drinking interactions (see Table 7 for means).

*Psychological Well-Being*

Proactivity, self-efficacy, and self-esteem did not differ in single-sex versus coed women.

*Gender-Related Beliefs*

Single-sex and coed women did not differ in benevolent, hostile, or overall ambivalent sexism. There also was not a significant difference in their attitudes toward feminism or in their likelihood to identify as a feminist.

Gender ideals were analyzed in a 2 (trait) × 2 (target sex) × 2 (school) ANOVA, with the first two factors manipulated on a within-subjects basis. Feminine traits were
rated more highly than masculine traits in the ideal person, $F(1, 105) = 160.19$, $p < .001$. This effect was moderated by the gender of the target, $F(1, 105) = 100.64$, $p < .001$. Feminine traits were rated significantly higher than masculine traits in the ideal man, $F(1, 107) = 10.28$, $p = .002$, and especially in the ideal woman, $F(1, 106) = 480.64$, $p < .001$. Women from coed and single-sex schools showed similar patterns (see Table 8 for means).
DISCUSSION

*Academic Achievement*

The results of this study supported the research that single-sex women have a higher academic achievement in high school (Bryk et al., 1993; Lee & Bryk, 1986), as reflected in their higher ACT scores, and this greater academic achievement has lasting effects after high school (Riordan, 1990), as shown in their significantly higher college GPA. These results can probably be in part explained by more time spent on homework in high school (Bryk et al., 1993; Jones et al., 1972; Riordan, 1990; E. Trickett et al., 1982), as well as being exposed to a more orderly and academic environment in high school (Riordan, 1990, E. Trickett et al., 1982)

Despite the advantage of having a higher GPA in college, single-sex women experienced a greater decrease over time in classroom comfort. While both single-sex and coed women decreased from high school to college, this drop was even more significant for single-sex women, as they may have been more greatly affected by the transition to college. This big change for single-sex women shows that the advantage they had in high school in being much more comfortable than their coed peers has now diminished as single-sex women are very similar to coed women in their classroom comfort level in college.

Even though single-sex women experienced a greater drop in classroom comfort over time, they were much more comfortable in high school than their coed peers. These results may be explained by the greater comfort and more supportive environment single-sex women may have originally experienced in high school through being more involved and affiliated with their teachers (E. Trickett et al., 1982). Some of their involvement and
confidence from high school may have carried over for single-sex women to college, although the difference between single-sex and coed women in college was not significant.

From these findings in classroom comfort, it is important to note that being in a supportive environment in high school with all women may be beneficial to its students, but these effects may only be significant while in that specific environment. Single-sex women’s comfort level may have dropped as much as it did because single-sex women had a higher level of comfort in high school than coed women. This greater level of comfort in high school may have been due to the gender-homogenous classroom environment that single-sex women experienced, that in college, no longer exists. The level of comfort that students experience in the classroom may be vital to the success of their college career, as emotional health is strongly related to school performance (Pritchard & Wilson, 2003).

**Drinking Behavior**

The results of this study also supported the hypothesis that single-sex women will experience a greater change in their social life from high school to college, as seen in their larger increase in drinking behavior. To begin with, single-sex women did not start drinking until a slightly older age than coed women. The lack of experience single-sex women had with drinking in high school may have made them more vulnerable to the transition to college, as they may have experienced a greater and faster increase in drinking behavior from high school to college in order to be similar to their coed peers in college. They may also have had less time before college to learn how to control their drinking behavior. For instance, problematic drinking behavior (e.g., driving while
 intoxicated, forgetting things while drunk, drinking alone, etc.) significantly increased for single-sex women from high school to college, although it did not for coed women.

Similar patterns were also found in frequency of drinking. While both single-sex and coed women significantly increased from high school to college, this increase was even more extreme for single-sex women, but they end up being comparatively similar in college.

These findings are very important, since there are very serious consequences and physical health risks associated with binge drinking, drinking and driving, and other problematic drinking behaviors. Social health factors are related to both student performance and retention (Pritchard & Wilson, 2003). In order to help control for the greater increase in drinking among single-sex women, programs should be put in place for incoming first-year students that will highlight the dangers and risks associated with binge drinking. However, because single-sex and coed women reported similar drinking behaviors in college, these programs could help all of these women (not just single-sex women) become more knowledgeable about the consequences of drinking before they are wholly immersed in that new environment when they are most susceptible to engaging in new and risky behavior.

Interaction with Men

The results also supported the hypothesis that single-sex women would experience a greater increase in frequency of interaction with men. Not surprisingly, while single-sex women greatly increased in their frequency of interaction with men (in both not drinking and drinking conditions), coed women did not. Clearly, being in a coed school environment had a greater impact on single-sex women’s daily interactions with
men. Overall, both single-sex and coed women experienced a greater increase in frequency of interaction with men while not drinking than while drinking, which may be explained by being around men on more of a daily basis in coed classrooms as well as in coed dorms.

Also, women were more comfortable with men while not drinking than while drinking. This effect may be due to a number of reasons and possible risks associated with interacting with men while drinking, including fear of being sexually assaulted or feeling self-conscious in being in a social situation.

Psychological Well-Being

The results did not support the hypothesis that single-sex women would experience a greater drop in proactivity, self-efficacy, or self-esteem. Although there have been a few studies to support the idea that coed women benefit psychologically as a result of their coed schooling (Dale, 1974; Schneider & Coutts, 1982) and that these effects may diminish over an extended period of time (Riordan, 1990), this study suggests that these effects may very quickly dissipate once going to college. Leaving home and having to meet new people may change women’s former views of the self and how they relate to others, and may consequently change their psychological well-being and sense of self. However, it is not known whether coed women are decreasing or single-sex women are increasing in psychological well-being from high school to college.

Gender-Related Beliefs

The results also failed to support the hypotheses that single-sex women would be less sexist, have more supportive attitudes toward feminism and would be more likely to identify themselves as feminists. Despite the research showing that single-sex women
have less gender-stereotypical ideals while in high school (Bryk et al., 1993; Lawrie & Brown, 1992; Lee & Bryk, 1986; Lee & Marks, 1990), these effects may diminish by the time they are immersed in a coed environment with others who may not share these same beliefs and ideals. Another possible interpretation is that coed women may instead increase in their nontraditional beliefs, since they are newly exposed to a collegiate environment that is much larger and more diverse than their high school environment.

Interestingly, both coed and single-sex women rated feminine traits more highly than masculine traits, and feminine traits were rated especially higher over masculine traits in the ideal woman, although both single-sex and coed women value feminine traits in the ideal person more than masculine traits. These effects may indicate that women perceive stereotypical feminine traits as being more highly valued by society than masculine traits, which is consistent with positive evaluations of these characteristics as found by Eagly and Mladinic (1989).

Limitations

This sample was taken from a public Midwestern university that is primarily upper middle-class and white; therefore, these findings are not highly generalizable. Also, due to time constraints, this study was retrospective--limited to asking present college students about how they remember their experiences, behaviors, and beliefs in high school.

Future research should examine single-sex women while in high school and later while in college in order to obtain a more accurate assessment of their high school experiences in comparison to college. However, it is expected that a longitudinal study would probably yield similar results to this one, as their memories of high school should
be relatively accurate since the time in which they are recalling is no more than four years ago.

Conclusions

Overall, single-sex and coed women generally showed the same pattern within high school and in college. However, single-sex women reported being significantly more comfortable in the classroom in high school than their coed peers. Although the single-sex environment may be beneficial for women while they are in high school, some of these effects may only be present while they are in that gender-homogenous context. For instance, although single-sex women may benefit academically from their high school education (as seen in their higher ACT score and college GPA), they experience a greater drop in their classroom comfort level in comparison to their coed peers, where they become much more similar when in the same coed collegiate environment. Little research has examined the effects of attending an all female high school and making the common transition to a coed college. These social aspects of drinking, classroom comfort, and interactions with male peers are very important to women’s health and adjustment during this period of growth. They need to be studied further in order to learn what precautionary steps need to be taken to prevent new and risky behaviors, as well as how to prevent or lessen these drops in comfort level when transitioning to college.
### Table 1  
*Classroom Comfort of Single-Sex and Coed Women in High School and College*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Single-Sex</th>
<th>Coed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M)</td>
<td>(SD)</td>
</tr>
<tr>
<td>High School</td>
<td>4.36(_a)</td>
<td>0.47</td>
</tr>
<tr>
<td>College</td>
<td>3.76(_c)</td>
<td>0.49</td>
</tr>
</tbody>
</table>

*Note:* Measure was completed on a scale of 1 to 5, with a higher number indicating greater comfort. Means within the same row or column with different subscripts were significantly different, \(p < .05\).  

### Table 2  
*Problematic Drinking Behavior of Single-Sex and Coed Women in High School and College*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Single-Sex</th>
<th>Coed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(M)</td>
<td>(SD)</td>
</tr>
<tr>
<td>High School</td>
<td>1.67(_a)</td>
<td>0.54</td>
</tr>
<tr>
<td>College</td>
<td>2.01(_b)</td>
<td>0.64</td>
</tr>
</tbody>
</table>

*Note:* Measure was completed on a scale of 1 to 5, with a higher number indicating greater frequency in problematic drinking behavior. Means within the same row or column with different subscripts were significantly different, \(p < .05\).
Table 3

*Frequency of Drinking for Single-Sex and Coed Women in High School and College*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Single-Sex</th>
<th>Coed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>High School</td>
<td>1.82&lt;sub&gt;a&lt;/sub&gt;</td>
<td>1.41</td>
</tr>
<tr>
<td>College</td>
<td>2.98&lt;sub&gt;b&lt;/sub&gt;</td>
<td>1.59</td>
</tr>
</tbody>
</table>

*Note:* Measure was open-ended and numbers were averaged across for number of drinks consumed in an hour, number of drinks consumed in a night, and number of nights during the week spent drinking. Means within the same row or column with different subscripts were significantly different, $p < .05$.

Table 4

*Frequency of Interaction with Men for Single-Sex and Coed Women in Not Drinking and Drinking Conditions in High School and College*

<table>
<thead>
<tr>
<th>Interaction and School Type</th>
<th>Single-Sex</th>
<th>Coed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Not Drinking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>4.43&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.73</td>
</tr>
<tr>
<td>College</td>
<td>4.43&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.84</td>
</tr>
<tr>
<td>Drinking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>3.97&lt;sub&gt;b&lt;/sub&gt;</td>
<td>0.92</td>
</tr>
<tr>
<td>College</td>
<td>4.66&lt;sub&gt;c&lt;/sub&gt;</td>
<td>0.79</td>
</tr>
</tbody>
</table>

*Note:* Measure was completed on a scale of 1 to 5, with a higher number indicating greater frequency of interaction with men. Means within the same row or column with different subscripts were significantly different, $p < .05$. 
### Table 5

*Frequency of Interaction with Men in Not Drinking and Drinking Conditions in High School and College*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Not Drinking</th>
<th>Drinking</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>M</strong></td>
<td><strong>SD</strong></td>
<td><strong>M</strong></td>
</tr>
<tr>
<td>High School</td>
<td>4.49&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.69</td>
<td>4.09&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>College</td>
<td>4.44&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.76</td>
<td>4.56&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Overall</td>
<td>4.46</td>
<td>0.72</td>
<td>4.32</td>
</tr>
</tbody>
</table>

*Note:* Measure was completed on a scale of 1 to 5, with a higher number indicating greater frequency of interaction with men. Means within the same row or column with different subscripts were significantly different, p < .05.

### Table 6

*Frequency of Interaction with Men for Single-Sex and Coed Women in High School and College*

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Single-Sex</th>
<th>Coed</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>M</strong></td>
<td><strong>SD</strong></td>
<td><strong>M</strong></td>
</tr>
<tr>
<td>High School</td>
<td>4.20&lt;sub&gt;a&lt;/sub&gt;</td>
<td>0.58</td>
<td>4.38&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>College</td>
<td>4.54&lt;sub&gt;b&lt;/sub&gt;</td>
<td>0.70</td>
<td>4.44&lt;sub&gt;ab&lt;/sub&gt;</td>
</tr>
<tr>
<td>Overall</td>
<td>4.37</td>
<td>0.64</td>
<td>4.41</td>
</tr>
</tbody>
</table>

*Note:* Measure was completed on a scale of 1 to 5, with a higher number indicating greater frequency of interaction with men. Means within the same row or column with different subscripts were significantly different, p < .05.
Table 7

*Comfort in Interaction with Men in Not Drinking and Drinking Conditions in High School and College*

| Type of School | Not Drinking | | | Drinking | | |
|--------------|-------------|---|---|-------------|---|
|               | M    | SD | M    | SD |
| High School  | 4.50a | 0.80 | 4.12b | 0.85 |
| College      | 4.33a | 0.80 | 4.30ab | 0.86 |

*Note:* Measure was completed on a scale of 1 to 5, with a higher number indicating greater comfort in interaction with men. Means within the same row or column with different subscripts were significantly different, p < .05.

Table 8

*Rating of Feminine and Masculine Traits in Ideal Man and Woman*

| Trait  | Man | | | Woman | | |
|--------|-----|---|---|-------------|---|
|         | M    | SD | M    | SD |
| Feminine| 3.61a | 0.47 | 4.00b | 0.38 |
| Masculine | 3.35c | 0.59 | 2.92d | 0.46 |

*Note:* Measure was completed on a scale of 1 to 5, with a higher number indicating greater likelihood of the target possessing feminine or masculine traits. Means within the same row or column with different subscripts were significantly different, p < .05.
REFERENCES


FOOTNOTES

1 When entered as a covariate, age slightly weakened the effects for drinking measures, but overall patterns and relationships between the variables were mostly unaffected.

2 Participants also completed an adapted version of the Health Locus of Control Scale (HLC; Wallston, Kaplan, and Maides, 1976) to refer to success and overall good fortune, as opposed to sickness and health, for high school and college. Internal consistency for this measure was very low in high school (alpha = .27) and in college (alpha = .37); therefore, no conclusions can be drawn from the results on this scale.