

# Single-Sex Education in Wisconsin

**Sara O'Connell**, author

Dr. Stephen Szydluk, Mathematics, faculty adviser

Sara O'Connell graduated from UW Oshkosh in December 2012 with a degree in secondary education mathematics and a minor in Spanish. Her research began as a paper in an advanced composition course and later became the topic of her senior Honors thesis.

Dr. Stephen Szydluk is an associate professor of mathematics. He earned his doctorate in mathematics from the University of Wisconsin–Madison and has been teaching at UW Oshkosh since 1996. His research interests include student conceptions of the nature of mathematics and mathematical applications of social choice theory, especially in sports.

## *Abstract*

Single-sex classes in America's K–12 public educational system have been on the rise in the past decade in an effort to close academic gaps between male and female achievement. Studies of single-sex classes in several states show that although outcomes vary, results are generally encouraging. Wisconsin is relatively new to the single-sex education trend, and there are virtually no published studies on the experience of local schools with single-sex education. The study described here is designed to be a step toward addressing this gap, by documenting (1) teachers' and administrators' experiences with and attitudes toward single-sex education in Wisconsin schools that currently offer single-sex classes, and (2) teachers' and administrators' experiences with and attitudes toward single-sex education in Wisconsin schools that once offered single-sex classes but no longer do. Themes observed in this study include the improved learning community in single-sex classes, better relationships between students and teachers, increased student confidence levels, and higher rates of student participation, with the only major drawback being scheduling issues.

## *Introduction and Background*

Wisconsin schools that are contemplating single-sex class options currently have little information to look at regarding single-sex education in Wisconsin. For such a school to make an informed decision on whether to undertake this change it is important to understand other schools' experiences with single-sex education, including why they chose to start a single-sex program, how the program affects students, how parents and the community respond to the program, how enthusiastic teachers are about teaching single-sex classes, if there is an added cost to the district from offering these classes, and if they were able to speak with other schools offering single-sex classes prior to beginning their own program. Moreover, it is important for Wisconsin schools contemplating single-sex classes to consider why some schools have already abandoned the program. The purpose of the study described in this paper was to explore these issues from the perspectives of both teachers and administrators.

Single-sex education has been around for a long time. Prior to 1972, these educational settings were established in ways that encouraged gender-based stereotypes. Before the amendments of Title IX, which prohibit exclusion from

educational activities based on sex, some schools separated boys and girls so each sex could focus on skills “necessary to prepare girls and boys for the disparate roles they would assume as adults” (Pollard 1999, 1). This provided unequal opportunities to each sex, and Title IX of the Education Amendments uses federal funding to keep schools from returning to this style of segregated education. In recent years, however, schools have begun considering and experimenting with the benefits of single-sex classes, this time with much different goals in mind. This new push for segregated schooling incorporates three main goals: addressing the academic achievement gap, improving classroom behavior and organization, and creating culturally centered models of education (Pollard 1999, 1). Although single-sex education has been viewed negatively in the past, this recent trend has gained momentum due to different goals and outlooks for the programs.

Every district implementing single-sex programs seems to have slightly different goals in mind. The main, and most obvious, reason to start a single-sex program is to bridge achievement gaps between boys and girls, both in situations where boys are not excelling and where girls are not excelling. According to Dr. Leonard Sax, founder and current director of the National Association of Single Sex Public Education (NASSPE), many schools choose single-sex programs to help girls increase participation and self-confidence in subjects such as engineering and physics, or to encourage boys to try poetry and art classes (Bonner and Hollingsworth 2012). A study done in Australia investigated the effect of single-sex classes on boys’ *underachievement* in academics, but discovered that although single-sex English classes benefitted both sexes, girls showed the greatest increase in scores (Mulholland, Hansen, and Kaminski 2004). These approaches illustrate the different ways that teachers are tapping into the potential of single-sex education.

Aside from decreasing the achievement gap between sexes, schools are also starting single-sex classes with other motives. In his “State of the State Address” in 1996, California Governor Peter Wilson argued that single-sex class offerings would give students more options, better prepare them for opportunities in the real world, and stimulate competition in education. His push for single-sex programs resulted in the 1997 legislation allowing 10 California school districts, through a competitive application process, to be chosen to receive grants to aid in initiating single-sex academies. These grants were a highly motivating factor for the districts that began single-sex offerings after this legislation. Considering the needs of students from varying socioeconomic levels and home backgrounds, educators “saw the grant as a way to help address the more typical educational and social problems of low achieving students” (Datnow, Hubbard, and Conchas 2001, 191). One of the California schools that ended up receiving grant money had previously begun a single-sex school for at-risk boys who the superintendent felt lacked male role models and who frequently ended up involved in violent crimes. Many of these students were from low-income families or were students of color, so the focus of single-sex programs was less on decreasing inequities between males and females, and more on decreasing inequities in many different areas (Datnow, Hubbard, and Conchas 2001, 191).

Since single-sex classes began to resurface in public education, educators have approached the program with many different plans in mind due to their interpretations of the purpose of single-sex education. Educators are often unsure about the legality of single-sex classes, so any discussion of initiating a single-sex program quickly butts up against the issue of Title IX. A part of the Education Amendments of 1972, Title IX requires that boys and girls receive equal treatment and opportunities in any program that receives federal funding (U.S. Department of Labor 2012). Subsequent Supreme Court decisions, however, have created certain distinctions for which Title IX

can be bypassed or altered. Several cases involving all-women nursing colleges have resulted in the condition that a gender-exclusive institute is only constitutional *if* its purpose is to remedy previous disadvantages to a particular sex. In the Supreme Court's decision in *Mississippi University for Women v. Hogan*, for example, it was ruled that an all-women nursing school was unconstitutional because women have rarely been deprived of opportunities in nursing (Brake 1999, 3). Public education systems have taken this line of thinking as well, proposing that the current trend toward single-sex classes is to remedy previous practices that may not have benefitted one sex over the other.

In 2005, the U.S. Department of Education commissioned a nationwide review of research on single-sex education. The review looked at 40 quantitative studies, analyzing their results in six different categories—(1) concurrent academic accomplishment (achievement test scores), (2) long-term academic accomplishment (post-secondary achievements), (3) concurrent adaptation and socioemotional development (self-esteem and attitudes toward school), (4) long-term adaptation and socioemotional development, (5) perceived school culture, and (6) subjective satisfaction. The studies were labeled Pro-SS (single-sex), Pro-CE (co-ed), Null (no difference), or Mixed. In category (1), 35% of the studies were Pro-SS, 2% were Pro-CE, 53% were labeled Null, and 10% reported mixed results. In category (2), 25% of the studies were Pro-SS and 75% were Null. Category (3) had 45% of studies Pro-SS, 10% Pro-CE, 39% Null, and 6% Mixed. In category (4), 50% of studies were Pro-SS, 20% were Pro-CE, and 30% were Null. In category (5), 50% of studies were again Pro-SS and 50% were Null. In category (6), 50% of the studies were Pro-SS and 50% were Pro-CE. Thus, the review found that either single-sex education was more effective than coeducational schools in each area researched, or there was no difference (Mael et al. 2005). Following this research and to clarify the legality of single-sex classes, the U.S. Department of Education published new rules regarding the implementation of single-sex education in public districts. Released in 2006, and due largely to the No Child Left Behind Act, the new regulations allow public, federally funded schools to establish single-sex classes as long as they fulfill three conditions: (1) schools must provide a valid rationale for why they are proposing single-sex options for a specific class, (2) schools must provide a mixed educational option alongside any single-sex class, and (3) schools must reevaluate the program every two years to see if the single-sex classes are still necessary or if they have corrected the inequity that caused the school to offer them in the first place (National Association for Single Sex Public Education 2011). Because this is a new practice, some educators are navigating single-sex education tentatively, not varying their lessons from all-boys classes to all-girls classes to provide an identical curricula to both groups. Other teachers are seeing the potential of using these segregated classes as a place to explore gender bias and stereotyping, and even for promoting the advancement of women (Datnow, Hubbard, and Conchas 2001, 197). Most educators fall somewhere between these two extremes, using the separated classes to differentiate instruction in ways that enhance the educational experience of each group of students. Thus, teachers are utilizing the single-sex programs in various ways.

Single-sex education often addresses the differences research has found between how boys and girls learn. Studies have discovered, for example, that girls prefer learning with more connections to the real world, while boys tend to become bored with that (National Association for Single Sex Public Education 2011). A concern with single-sex classes is that they will have a reverse effect and impose further gender stereotypes, or that the teacher may include his or her own gender biases. Many studies

have been completed with more detailed findings regarding differences between sexes in brain development and learning styles. To prevent personal biases from becoming involved in single-sex classes, teachers must be well-educated in the findings of this research. An excellent resource for this information is the NASSPE website ([www.singlesexschools.org](http://www.singlesexschools.org)).

In Western Australia, a study conducted by Lesley Parker and Léonie Rennie in 2002 explored the qualitative elements of teachers' perceptions, student perceptions, and observer perceptions of single-sex classes. Their data show overall success with the classes, with generally more positive results apparent in the girls' classes. The teachers in girls' classes were greatly in favor of the program, feeling that their classes were much more productive and manageable without the boys' presence. The girls also felt that their academics improved and they could focus on their schoolwork when the boys were not there. Another important aspect Parker and Rennie highlighted was increased cooperation among the girls. The students were more likely to participate without the fear of being put down for their answers, and they were more willing to help each other in class. The boys' classes were not as successful right away, but most teachers felt that the boys' classes eventually became more productive—it just took longer to get there. One notable effect of the boys' class was that the boys felt more comfortable discussing their personal lives with the teacher, resulting in a closer relationship. The boys themselves had mixed opinions about single-sex classes, many saying they preferred having girls in the class because boys can be too rowdy at times. The teachers also noted that although the girls were no longer there for the boys to tease, the quieter boys sometimes became victims of this harassment. So while harassment virtually disappeared in the all-girls classes, it may have just shifted in the boys' classes (Parker and Rennie 2002).

Most studies conducted on single-sex education are qualitative assessments. Interviews with teachers and students and observations of the class atmosphere provide researchers with some insight into the structure of single-sex classes and how they affect students. Because single-sex education is relatively new to the United States, qualitative studies are sparse in many regions, including Wisconsin. States such as South Carolina, one of the first states to embrace single-sex education, have more comprehensive results. In an early look at South Carolina's success, Jim Rex, who is the state superintendent of education in South Carolina, and David Chadwell, the coordinator for single-sex programs at the South Carolina Department of Education, found that single-sex education has "invigorated teachers, engaged students and involved parents" (Rex and Chadwell 2009). Overall, Rex and Chadwell found evidence that schools with single-sex classes showed an improved academic performance, with fewer students failing classes and improved scores on state assessments, as well as a decrease in disciplinary issues.

It is important to note here that while these previous studies show considerable benefits in single-sex education, there is also research available that argues against the benefits of single-sex education. A recent article in *Science* disputes the findings of academic advantages and expresses a concern that single-sex education can reinforce gender stereotypes. The article discusses and analyzes the results of scientific studies, coming to the conclusion that many of the results occur based on "cherry-picked" data (Halpern et al. 2011).

In 2006, Wisconsin joined the growing trend toward single-sex education when Governor James Doyle approved Act 346, allowing school boards and charter schools to establish single-sex schools or classes. Act 346 amended several previous Wisconsin statutes that prohibited discrimination based on sex. The new statute took effect on April 29, 2006 (Wisconsin 2006). By 2008, six Wisconsin public schools had begun separating their students by sex (Conklin 2008).

NASSPE, founded in 2002, provides a starting point for those interested in single-sex education. The association created a website that provided a list of schools in each state offering single-sex classes. As of 2011, this list appeared to be outdated (most listings are for the 2006–2007 school year) and has since been replaced by an e-mail address for parents to receive information about single-sex classes. Many of the Wisconsin schools on the original list are near Milwaukee or the borders of Illinois and Minnesota (National Association for Single Sex Public Education 2011). Some of these schools still offer their segregated classes, but others dropped the program after the first year or two.

The remainder of this paper is divided into three sections. My methodology is described first, including how I gathered my information. Results follow, highlighting themes observed in the data. The final section discusses conclusions that can be drawn from this study and further research that could be pursued.

### ***Methodology***

Since Wisconsin does not have a comprehensive study of schools' experiences with single-sex classes, and because these classes have only recently been offered in Wisconsin schools, obtaining quantitative information is difficult. As a result, I focused on interviews and observations to obtain my data. The NASSPE website once provided a list of schools by state that offered single-sex classes, and the Wisconsin list consisted of 12 schools. However, the list is no longer available, and the website now instructs parents to e-mail NASSPE for information about local schools. Nevertheless, I contacted the 10 middle and high schools on the original list via e-mail, and heard back from two schools that still offer single-sex classes and two schools that no longer do. I e-mailed Dr. Leonard Sax, director of NASSPE, who provided the name of another Wisconsin high school still offering single-sex classes. I focused my research on these five schools.

I initially contacted the principals and secretaries via e-mail to find out who would be most informed about the single-sex program. For the schools that have already dropped their single-sex classes, I interviewed the principals or other staff members who knew most about the program. At schools currently offering single-sex classes, I interviewed teachers of those classes. Once I established a contact at each school, I e-mailed each an initial survey of quick-response questions to begin approaching the topic. After receiving these responses, I interviewed each contact further, by e-mail or telephone, depending on his or her preference. I also requested a day to observe the current single-sex classes at one of the schools. While I was at that school, I interviewed the teachers of the single-sex classes that I was observing. The interview questions were intended to determine, among other things, why they decided to start a single-sex program, if there was any resistance to it in the community, and if additional costs to the district were a factor in initiating the program. I also asked the teachers about their classroom structure and pedagogy, such as how they differentiate their teaching in a single-sex class, if they notice differences in student success in single-sex classes, and if they prefer single-sex or co-ed classes (the full questionnaire is available in the appendix). During my classroom observation, I looked for several behaviors, including the level of participation among students, the way students treat each other in the single-sex classes, and the different teaching styles and class activities in the single-sex classes.

### ***Results and Discussion***

Since 2006, with the legal changes to allow single-sex classes, single-sex education is making an appearance in Wisconsin public schools. The teachers I interviewed



have had single-sex class offerings for three to five years total in a variety of subjects including English, math, science, communication arts, social studies, physical education, and technology education. After speaking with teachers from five Wisconsin schools, at the middle school or high school level, I have discovered some common themes and results observed in the participating schools. My findings center around the topics of motivation and goals for the single-sex program, response to the program, changes made in the curriculum, results observed by the teachers, and social effects on students in single-sex classes. The themes discussed in the following sections are all based on responses from single-sex education teachers, and thus reflect their perceptions.

### **Instructors' Motivation**

The teachers and school must have a motivation for offering single-sex classes. In my interviews, I spoke to many teachers who helped establish single-sex classes, so I was able to learn what their motivations for the program were. Several teachers I spoke with mentioned that boys were the motivation—boys' grades, boys' discipline issues, etc. Rob, a high school English teacher, felt that the boys in his classes acted like "knuckleheads," and their grades were lower than they had previously achieved in middle school. Having attended an all-boys high school himself, Rob wanted to see if single-sex classes would stimulate boys to begin reading and to improve their English scores. Jeff, a middle school social studies teacher, said that his school's program began as another form of differentiation to address boys' discipline issues and possible misdiagnoses of special education students. Previously, Jeff estimates that 90% of behavior write-ups were for boys, and 95% of special education and ADD/ADHD students were boys.

The issue with boys' success in school was just one common motivation for single-sex classes. Many teachers responded that they decided to try a single-sex program in an effort to improve the students' academic success. Pam, a middle school math teacher, started a single-sex class as a project for her master's degree, curious if there would be improvement in the students' participation, grades, and achievement. Jeff also mentioned that the single-sex classes would give girls an opportunity to speak out and assume leadership roles they may otherwise have shied from. One unique story of motivation came from Dean, a high school science teacher. Due to a fluke in scheduling, he had a biology class in 2006 with only five boys. One day when all five of those boys were absent, he noted the different atmosphere in the classroom, and how much more the class accomplished that day. He proposed single-sex classes to the principal as a way to improve classroom management, social behaviors, and grades.

Money is always a concern in education-related matters, but of the schools I spoke with, none expressed any major budget concerns for starting their single-sex classes—at most, they spent a little extra on books for the classroom.

### **Response**

Support for the single-sex program from students, other teachers, parents, and community members was positive in the interviews. All of the teachers said that students were either extremely supportive of the program or initially neutral about it, then warmed up to it throughout the year. Legally, single-sex classes must be optional for students, and teachers are finding this to be particularly important in implementing them. Rob emphasized that single-sex classes are not for everyone, and if a student does not feel comfortable in the class, he or she needs to get out. As an all-boys teacher, Rob noted that the boys must have tough skin to be in his class. This assertion was borne out during my observation, when a group of boys stole another boy's lip balm,

and began to throw it around. Rob let the students resolve the issue themselves, but it was apparent that boys must be tough to survive the all-boys class. Nevertheless, the freshmen students at Rob's school loved the program so much that they petitioned to have a single-sex class offered for sophomore year also. In some schools where only one sex was given the option of single-sex classes, teachers noted that students of the other sex were somewhat jealous that they did not have the same opportunity.

The teachers I spoke to had mixed thoughts, however, on the support from other teachers in the building. Some schools were extremely supportive, such as Pam's school, where a board member, with her own money, sent Pam to Colorado for a conference about single-sex education. Other single-sex teachers sensed some jealousy, doubt, and concern about the single-sex classes from faculty. Jeff said that there was jealousy among the co-ed teachers because the single-sex program was receiving a lot of public attention and recognition. At another school, Tina, a high school English teacher, felt that other faculty within her department were resistant to the program, likely because they were concerned about the fate of their own co-ed English classes. Rob, who teaches the boys' single-sex English class at Tina's school, echoed this resistance by other faculty, even sensing their animosity toward himself and the other single-sex teachers. Defending their single-sex program, Rob stressed that his intent is not to harm the co-ed classes, but rather "to make things better for kids, to make learning a successful experience for them." Ironically, at this same school, faculty from other departments were fully supportive of the single-sex classes after seeing their success.

In the school districts studied in this project, teachers found that parents and community members have thus far been very supportive of the single-sex programs. Since the programs are optional, teachers have had little resistance from parents. Most parents even love the program, becoming advocates for its success. The rate of enrollment at Rob's school has grown considerably over the past three years, from 39 students in the first year to more than 250 students currently, which speaks to how word has spread about these classes. He hears parents tell him, "You won't believe it, my son actually talked to me about a book he is reading!"

## Curriculum

Wisconsin teachers are having success in starting single-sex classes, but the real results come from what is done differently in a single-sex classroom than in a traditional classroom. Teachers have taken a surprising variety of teaching approaches in a single-sex class. Some teachers keep the curriculum exactly the same but vary the delivery, others tailor the curriculum to the specific sex, while still others work on better classroom-management techniques. Most of the teachers I interviewed were unable to observe at schools offering single-sex classes because they did not know of any others located near them, but they had all either received professional training in the research completed regarding differences in how boys and girls learn or had explored the topic on their own.

Several teachers of all-boys classes mentioned the boys' drive for competition as well as their shorter attention spans. Jeff said that he tries to change the activity every 10 minutes in a boys' classroom, using a ball toss for discussions, and push-ups and jumping jacks throughout the lesson, to keep the boys moving. He also allows the boys to stand by their desks during work time. Dean mentioned that a single-sex teacher must be flexible, such as accepting the louder noise level in the boys' class. On the other hand, Tina, in an all-girls class, frequently observes the students getting up during class to put lotion on or to do each other's hair. Clearly these behaviors must be limited

to still complete the lessons, but the expectations on behavior are varied from a co-ed classroom.

In delivery of lessons, single-sex teachers try to choose topics that interest their class, and present the material in a manner that students prefer. While this is true in mixed classes as well, the distinction in the single-sex classes is particularly notable. In an all-boys class, competition appears to be effective. In Rob's class, the discipline system is even a game of sorts, where misbehaving students' names are written on the board. At some prearranged time, all these names are put into a tin, and then two are chosen to serve a detention. I observed the process of "picking" the names, and I could easily have been at a sports game with how the students reacted to each name that was put in the tin. The teachers I spoke with perceived that this competition was more motivating for boys than girls. Pam noted that girls thrive better with collaboration activities, and puzzles or brainteasers.

The other major change I noted in my interviews was the actual material covered. In English classes, the teachers choose books that apply better to their specific class. In Tina's all-girls class that I observed, the students read books from a female's perspective, usually with a strong lead female character. In Rob's all-boys class, they read books about becoming a man in today's society. Many teachers I interviewed said that the single-sex classes allow them to build more character training into the curriculum. Kathleen, a high school English teacher, created a unit about manners after she perceived her all-boys class behaving particularly immaturely. She aligned the unit with their study of *Romeo and Juliet*, and ended with a Valentine's Day dinner. The boys each invited a girl to the dinner to show off their new manners. Many boys were shocked to learn how many girls did not know the proper table manners. Kathleen also brought in adult male role models to talk to the boys about what it means to be a man.

Aside from all intentional changes in curriculum, most teachers said that they can simply cover the curriculum in greater depth with single-sex classes because students are less distracted. Dean found that boys and girls have specific skill sets that they excel at, such as boys being particularly good at sequencing steps, so he takes these differences into account when planning single-sex lessons. In his interview, Dean explained, "It's like running a race. We might first go to Milwaukee on the way to Madison, but eventually we will all get there."

### **Student Achievement**

With these changes made in single-sex classrooms, teachers are seeing the results in their students' academic and social achievements. The most frequent result teachers observed was the sense of community that develops in a single-sex class. The students do not have to worry about showing off for the opposite sex, so they are able to relax more in class. Kathleen described her boys becoming a team, often rallying together to stay focused. Jeff also saw positive peer pressure to get work done in the single-sex classes. Rob believes the program makes kids feel special and unique, like being a school sports star, except they are academic stars. Rob's all-boys class even works to raise money for charities, by having a class couch that students must pay a quarter to sit on each day. They also make a class T-shirt each year. Rob said that he often has the same group of boys for freshman and sophomore year, so he knows the students better and can be a stronger influence in their lives. Dean commented on how much easier it is to build a good rapport with students in a single-sex class because the students are more willing to open up and be themselves. Many of the teachers I interviewed also mentioned how much easier classroom management is in a single-sex class. Tina noted that her level of comfort with the girls in her class made her more inclined to call out



students who are having issues with each other. One classroom management issue that may be more present in an all-girls class is the presence of cliques, but Tina addresses this at the beginning of every year, setting up rules to discourage student conflicts and to deal with problems that arise throughout the year. Better classroom management also leads to better academic success for students. Teachers are finding that, in single-sex classes, boys are more willing to participate and share their work, girls are more willing to speak up and step into leadership roles, and the grades and test scores of both sexes appear to be improving. Dean asserted, based on his own statistical analysis, that the girls in his single-sex class achieved grades 8–12% higher than girls in co-ed classes, and boys' grades were 5–8% higher than those of boys in co-ed classes. It should be noted that the details of Dean's methodology were not available in this interview. Tina observed that the girls in her class are more eager to do their best on assignments, and more willing to come to her for help. Pam compared her students' records with their previous years' records, and observed that grades, participation, and achievement all seemed to improve with the single-sex class. Jeff also perceived this improvement in grades, as well as better scores on standardized tests than for students in the co-ed classes. Students look forward to coming to class, which is seen in their positive attitudes about class and motivation to succeed.

### Drawbacks

When asked about the drawbacks of single-sex classes, almost every teacher responded that scheduling became an issue. From an administrative side, having an optional single-sex class offering may become difficult when trying to assign classes, because students who choose single-sex will have to be in that class in the given hour. This may cause students to have to decide between a single-sex class and other elective classes offered at the same time. Another difficulty with offering single-sex classes is determining how many students should be in each class. At Rob and Tina's school, the program has increased from 39 students to more than 250 students in just three years, and even with five single-sex classes offered, they feel that a cap is going to be needed for program enrollment.

From the students' perspective, single-sex classes may be a way for them to ensure all of their friends end up in the same class. Pam experienced exactly that in her second year of the single-sex program. She said the first year was wonderful, and students grew into a family. After that year, however, students realized that they could control who they ended up in classes with by choosing single-sex, which Pam found dampened the successful experience she had in the first year. That same learning community never had a chance to develop when students came into the year with social settings already determined. Not all schools experienced this problem, but it comes down to the number of classes available for single-sex, the number of students enrolled in them, and the ability to randomly assign students.

### Social Effects

The final aspect of single-sex classes that I spoke with teachers about is the social effects. Within the classroom, teachers seemed to see similar results—the students developed into a closer community and were more cooperative when working together. Several teachers noted that their students cared about each other in the single-sex classes. Pam recalled a time when a girl was in tears, but instead of sending her out of the room, the other girls comforted her and the experience resulted in positive sharing by all the girls.

The social effects *outside* the classroom, however, were more varied. Some teachers felt that the changes within the classroom did not carry over into other classes or the

hallways. Pam perceived that her one-year single-sex program was not enough to cause a change in the students' attitudes and behaviors outside the class. Other teachers, such as Kathleen, who taught a unit on manners, purposely worked in content to influence the students' social behaviors. Jeff saw the students' confidence increase in other elective classes as well as in the single-sex classes. Dean, however, noticed the opposite, as students became more involved and vocal in his class but remained quiet "fence-sitters" in the co-ed classes. Rob and Tina both stated that while they do not see the students much outside of class, they try to impress upon the students how important it is that they carry their character-building lessons into other areas of their lives.

### **Schools that No Longer Offer Single-Sex Classes**

Part of this study was intended to look at schools that have decided to terminate their single-sex programs. The perceptions of many of these teachers have been included throughout the previous results, but despite positive perceptions on their part, the schools have still decided to stop offering the single-sex classes. Pam's school found that single-sex classes gridlocked the schedule too much, and thus decided to stop offering them. Pam, however, had positive perceptions of the experience, and said she would still prefer teaching the single-sex class. Kathleen's school also stopped offering single-sex classes, but Kathleen is in favor of these classes. Her positive responses appear to indicate that the program ended due to administrative reasons rather than her choice. An interesting theme noted in these two schools is that there was only one single-sex section offered at each school when they decided to terminate the programs.

### **Conclusion**

It is important to note that all of the participants in this study stated that they preferred teaching in single-sex classrooms. The information gathered is based on the perceptions of these teachers who are clearly in favor of continuing single-sex education, so participant bias needs to be considered in the results. In addition, these single-sex classes are optional, so the students choosing to enroll may not be typical representatives of the entire student body. This yields another potential source of selection bias. The small sample size is also a shortcoming of this study.

Research that could further the findings in this study include a similar study involving more schools, a quantitative study analyzing grades and test scores in single-sex classes, a study focused on interviews with parents and students, or a closer look at the motivations for each school offering single-sex education options.

The results found in this study are promising for single-sex education, and also reinforce the findings of many previous studies. This paper describes some strong and positive themes present in current single-sex classes. The teachers in this study are all in favor of what they perceived as the better learning environment cultivated in their single-sex classes, which makes it easier for them to develop rapport with the students. These teachers have observed students in single-sex classes having increased confidence levels and higher rates of participation in class. With single-sex classes being optional, teachers have also perceived a strong support and interest in the program from students and parents, as well as most other teachers. Scheduling was perceived to be the only major drawback for schools, and most teachers believe that the positive results are worth the struggles. Separating the students by sex allowed teachers to cover the curriculum more fully while making opportunities for life lessons and character-building activities. Single-sex education, however, needs to be considered only if the teachers are truly dedicated to the task and willing to make changes to best utilize the program. As Rob described it, "You cannot have a teacher who doesn't 100

percent believe in it, teaching it. Because it will not work.” When asked about the biggest benefit of the classes however, Rob responded, “If done correctly, it can really work.”

## ***Bibliography***

- Bonner, Jessie L. and Heather Hollingsworth. “Single Sex Classes Popular as More Public Schools Split Up Boys and Girls.” *The Huffington Post*, July 8, 2012. Accessed July 17, 2012. [http://www.huffingtonpost.com/2012/07/08/more-public-schools-split\\_0\\_n\\_1657505.html](http://www.huffingtonpost.com/2012/07/08/more-public-schools-split_0_n_1657505.html).
- Brake, Deborah L. “A Legal Framework for Single-Sex Education.” *WEEA Digest*, October 1999, 3–7. <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED435553>.
- Conklin, Melanie. “Same-Sex Classes Tried in Janesville Marshall Middle School Is One of a Growing Number of Schools Trying to See if Children Can Learn Better in a Class with Only Boys or Only Girls.” *Madison.com*, May 4, 2008. Accessed December 30, 2011. [http://host.madison.com/news/article\\_a442a9ef-81ba-597c-a0a8-bf129ad4e33c.html](http://host.madison.com/news/article_a442a9ef-81ba-597c-a0a8-bf129ad4e33c.html).
- Datnow, Amanda, Lea Hubbard, and Gilberto Conchas. “How Context Mediates Policy: The Implementation of Single Gender Public Schooling in California.” *Teachers College Record* 103, no. 2 (2001): 184–206. <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ628750>.
- Halpern, Diane F., Lise Eliot, Rebecca S. Bigler, Richard A. Fabes, Laura D. Hanish, Janet Hyde, Lynn S. Liben, and Carol Lynn Martin. “The Pseudoscience of Single-Sex Schooling.” *Science* 333, no. 6050 (2011): 1706–07. [http://www.educ.ethz.ch/halpern-09-23-11\\_1\\_.pdf](http://www.educ.ethz.ch/halpern-09-23-11_1_.pdf).
- Mael, Fred, Alex Alonso, Doug Gibson, Kelly Rogers, and Mark Smith. *Single-Sex Versus Coeducational Schooling: A Systematic Review. Doc # 2005-01*. Washington, D.C.: U.S. Department of Education, 2005. <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED486476>.
- Mulholland, Judith, Paul Hansen, and Eugene Kaminski. “Do Single-Gender Classrooms in Coeducational Settings Address Boys’ Underachievement? An Australian Study.” *Educational Studies* 30, no. 1 (2004): 19–32. <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ680658>.
- National Association for Single Sex Public Education. *NASSPE*. Accessed October 30, 2011. <http://www.singlesexschools.org/>.
- Parker, Lesley H. and Léonie J. Rennie. “Teachers’ Implementation of Gender-Inclusive Instructional Strategies in Single-Sex and Mixed-Sex Science Classrooms.” *International Journal of Science Education* 24, no. 9 (2002): 881–97. <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ654572>.
- Pollard, Diane S. “Single Sex Education.” *WEEA Digest*, October 1999, 1–2. <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED435553>.
- Rex, Jim and David Chadwell. “Single-Gender Classrooms.” *School Administrator* 66, no. 8 (2009): 28–33. <http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ853862>.
- U.S. Department of Labor. “Title IX, Education Amendments of 1972.” *DOL*. Accessed May 17, 2012. <http://www.dol.gov/oasam/regstatutes/titleix.htm>.
- Wisconsin Department of Public Instruction. “Changes in State Law to Allow Single-Sex Schools and Courses.” *DPI*, November 2006. Accessed December 7, 2011. <http://dpi.wi.gov/sped/pnd-single-sex.html>.

## *Appendix*

### **Interview Questionnaire**

#### Quick response e-mail survey questions for schools no longer offering single-sex classes:

1. How long did you offer a single-sex program?
2. What subjects/grade levels did you provide single-sex class options for?
3. Did implementing single-sex classes cost the district any considerable additional funds?
4. Did teachers in your school/district receive any training in single-sex education prior to implementing this program?

#### Interview questions for schools no longer offering single-sex classes:

##### *District Preparation*

1. What motivated you to begin offering single-sex classes in your district?
2. Would you say you experienced resistance to or support for the program from students?
3. Would you say you experienced resistance to or support for the program from teachers/faculty?
4. Would you say you experienced resistance to or support for the program from the community?
5. How enthusiastic were teachers in your district/school about having single-sex classes?
6. Did you know of other schools with single-sex programs before implementing your own and, if yes, did you talk to these schools about their experiences?
7. What were the goals of the single-sex program in your district?
8. Why did you decide to stop offering single-sex classes in your school?

##### *Teacher Perspectives*

9. Did you observe any noticeable differences between single-sex classes and co-ed classes?
10. Did you plan instruction differently for single-sex classes than for co-ed classes?
11. Which class style do you prefer teaching?
12. Can you identify any problems or difficulties that you found in a single-sex class that you would not experience in a co-ed class?
13. What are the biggest benefits of single-sex classes?
14. What are the biggest drawbacks of single-sex classes?
15. Did you find teaching in a single-sex classroom harder or easier than in a co-ed classroom?
16. Did you find any other groups of students, aside from boys and girls, being considerably affected by single-sex education (i.e., ethnic minorities)?

17. How do you perceive that students felt about single-sex education?

#### *Social Effects*

18. Did single-sex classes affect the students' social interaction outside the classroom positively, negatively, or not at all?

19. Did students interact with each other differently in single-sex classes than in co-ed classes?

#### Quick response e-mail survey questions for schools currently offering single-sex classes:

1. How long have you offered a single-sex program?
2. What subjects/grade levels do you provide single-sex class options for?
3. Did implementing single-sex classes cost the district any considerable additional funds?
4. Did teachers in your school/district receive any training in single-sex education prior to implementing this program?

#### Interview questions for schools currently offering single-sex classes:

##### *District Preparation*

1. What motivated you to begin offering single-sex classes in your district?
2. Would you say you experienced resistance to or support for the program from students?
3. Would you say you experienced resistance to or support for the program from teachers/faculty?
4. Would you say you experienced resistance to or support for the program from the community?
5. How enthusiastic were teachers in your district/school about having single-sex classes?
6. Did you know of other schools with single-sex programs before implementing your own, and if yes, did you talk to these schools about their experiences?
7. What are the goals of the single-sex program in your district?
8. Do you intend to continue offering single-sex in your district? Why or why not?

##### *Teacher Perspectives*

9. Have you observed any noticeable differences between single-sex classes and co-ed classes?
10. Do you plan instruction differently for single-sex classes than for co-ed classes?
11. Which class style do you prefer teaching?
12. Can you identify any problems or difficulties that you found in a single-sex class that you would not experience in a co-ed class?
13. What are the biggest benefits of single-sex classes?
14. What are the biggest drawbacks of single-sex classes?



15. Do you find teaching in a single-sex classroom harder or easier than in a co-ed classroom?
16. Do you find any other groups of students, aside from boys and girls, being considerably affected by single-sex education (i.e., ethnic minorities)?
17. How do students feel about single-sex education?

*Social Effects*

18. Do single-sex classes affect the students' social interaction outside the classroom positively, negatively, or not at all?
19. Do students interact with each other differently in single-sex classes than in co-ed classes?