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Critical Media Literacy and Gender: Teaching Middle School Children about Gender Stereotypes and Occupations

Laurel Puchner, Linda Markowitz and Mark Hedley
Southern Illinois University Edwardsville

Abstract

This study examined the effectiveness of the implementation of a small-scale critical media literacy curriculum unit focused on gender stereotypes, especially as they pertain to occupations. The research question was whether students exposed to the critical media literacy (CML) curriculum were more likely than students not exposed to believe: that women experience discrimination in the workplace; that the media constructs stereotypical messages about women and men, especially regarding occupations; and that the media influences people's thinking. Participants were students in 5 seventh grade classes, who were exposed to a 4-workshop curriculum, and students in 5 eighth grades classes, who were not. Methods included a 14-question pre-post survey and interviews with 4 students before and after implementation of the CML unit. Quantitative and qualitative findings indicate that the CML unit was generally successful at increasing the seventh graders' understanding of target issues.

Keywords: *media literacy, social justice, gender, occupations, stereotyping, middle-school, research*

Introduction

Critical media literacy focuses on unpacking hidden power messages in the media and learning to resist the messages (Alvermann and Hagood 2000; Share 2009). Although wide calls for critical media literacy exist, as well as recommendations for how to teach it, there is little empirical research testing the ability of critical media literacy to educate students about social justice issues. The current study addresses this gap by examining the effectiveness of the implementation of a small-scale critical media literacy curriculum unit focused on gender stereotypes, especially as they pertain to occupations. In this paper, we discuss the results from a field experiment that measured whether students exposed to a critical media literacy (CML) curriculum were more likely than students not exposed to believe: that women experience discrimination in the workplace; that the media constructs stereotypical messages about women and men, especially regarding occupations; and that the media influences people's thinking.

Our participants were students in 5 seventh grade classes, who were exposed to a 4-workshop curriculum, and students in 5 eighth grades classes, who were not. The goals of the critical media literacy curriculum were twofold: (1) show students that stereotypes about men and women are socially constructed and contribute to the discrimination that women experience in the workplace; (2) convey that the media creates and perpetuates some of those gender stereotypes. Our hope was that education about discrimination

and gender stereotypes in the media could influence students' attitudes about the entrance of males and females into gender atypical professions.

We frame our study using critical media literacy, or media literacy aimed at exposing social injustice. Our focus was sexism. Defining sexism in the media is a challenging task. Gill (2007) cites how trends such as sexualization of women, for example, can be seen both positively, as movement away from earlier repressive media representations of women, or negatively, as commodification and objectification of female bodies. Although areas of contestation exist, media literacy scholars recognize that racist, sexist, classist, and anti-democratic messages abound in the media. Giroux (1994) calls for studying racism, sexism, classism and other forms of oppression within media to provide "a sense of agency in students based on a commitment to changing oppressive contexts by understanding the relations of power that inform them" (297). While media audiences are not passive consumers of such messages (Jenkins 1992), oppressive messages still play a large role in forming the beliefs of youth (Giroux 1994, 1995). Jenkins, Ford, and Green (2013) call for media consumers to "exercise greater power over the decisions which impact the quality of our everyday lives as citizens" by being political participants in media (156). The issue we are addressing is to what extent do students learn to be critical consumers of the media through CML.

Literature Review

Gender, Professions, and the Media

Though sex discrimination in the workplace has been illegal since the 1964 Civil Rights Act, men and women still remain largely in sex-segregated occupations (Oswald 2008). For example, women are still only a minority in the physical sciences, mathematics, engineering, and computer science professions (Rosser and Taylor 2009). Structural discrimination in rules and policies at schools and the workplace accounts for some of the discrepancy in gender composition within science, technology, engineering, and math (STEM) professions (Reskin and Maroto 2011). However, research shows that gender stereotypes associated with those professions mainly account for the difference; women do not pursue job paths within STEM and men do not hire them because neither group perceives those jobs to be appropriate for women (Weisgram, Bigler, and Liben 2010; Reskin and Maroto 2011; Smeding 2012; Jagacinski 2013). Research shows that, from as early as elementary school, both boys and girls are less likely to perceive STEM professions as appropriate for females (Leaper, Farkas, and Brown 2012). Shifting gender stereotypes, then, is crucial for moving women into STEM professions.

Different academic theories suggest that gender stereotypes are a fundamental contribution to reasons why males and females are ultimately placed and place themselves in segregated occupations. Gender schema theory (Bem 1981), role congruity theory (Evans and Diekmann 2009), and self-stereotyping theory (Oswald 2008) broadly suggest that males and females make choices within systems of opportunities they perceive to be consistent with their gender. Importantly, the causal ordering of the relationship is complex, as gender stereotyping both causes and is caused by occupational sex segregation. Though studies show that males and females who identify strongly with their gender are even more likely to conform to gender stereotypes, research shows that each of us experiences pressure to toe the traditional gender line (Signorielli 2004). However, because gender beliefs are socially constructed, they are flexible and capable of shifting (Wilbourn and Kee 2010).

Studies find that stereotypical beliefs come primarily from family, peers, and the media (Allan and Coltrane 1996). For this study, however, we focus solely on the media. While accounts vary, a modest estimate is that children experience about seven hours of media per day (Rideout, Foehr, and Roberts 2010). Regardless of medium, the media generally (re)present gender stereotypical images of males and females (Gainer 2010). For example, males are more commonly presented as the main subject, engaged in action behaviors, portrayed as financial providers, and shown in occupations related to STEM and/or blue-collar fields (Gainer 2010). On the other hand, females are often portrayed as wives, mothers and/or sex objects.

When in occupations, females are often presented in fields perceived as nurturing: teachers, nurses, social workers, sex workers or secretaries (Gainer 2010). Giroux (1994, 1995) provides analyses of both racism and sexism in Disney and other films. Further, the films and writings of Jean Kilbourne (c.f. Kilbourne 2000; Kilbourne, Jhally and Rabinovitz 2010) chronicle the damaging nature of gender stereotypes and sexism in advertising. Others have written about the damaging messages in video games, magazines, the internet, TV, and music (Alvermann and Hagood 2000).

Critical Media Literacy

Critical media literacy emerged from the media literacy education (MLE) movement that began in the nineties. Because of the rising importance of popular culture in the lives of young people, MLE's intention was to convince schools to incorporate popular culture media into the classroom and work with students on how to make sense of such media (Hobbs and Frost 2003). MLE scholars and CML scholars share some of the same pedagogical goals. Both groups believe media literacy instruction should: (1) show how media messages are socially constructed; (2) examine the tools and other methods used to construct the media; (3) understand how different audience groups view messages differently; (4) reveal the values and ideologies embedded within the media; and (5) recognize that media develops particular messages for a reason (Hobbs and Frost 2003; Kellner and Share 2007a,b; Hobbs and Jensen 2009; NAMLE 2009). The difference between the two groups is that CML scholars further argue that the main goal of media literacy education should be to expose social injustices created and perpetuated in the media and to help students develop participatory democracy skills that lead to social activism (Giroux 1994; Kellner and Share 2007b; Carr 2009; Kellner and Kim 2010).

In considering the influence of the media on youth, we recognize the need to avoid simplistic notions for how representations sway audiences. Media studies researchers and theorists have pointed out that the link between media production and media consumption is not direct (Hall 1980; Gill 2007). Hall (1980) emphasizes that media producers try to get a specific meaning across through their encoded message, but that individuals decode the message according to their own cultural and personal characteristics; hence media does not always get used the way the producer intends. Furthermore, current media constructions provide audiences the opportunity to actively shape the media. The following are examples: (a) media sharing, which is increasingly prevalent due to new technologies (Jenkins, Ford and Green 2013); (b) fandoms, "active producers and manipulators of meanings" that sometimes create their own identities and their own social experiences by appropriating images from popular culture (e.g., "Trekkies") (Jenkins 1992, 23); and (c) critics, who provide information to producers about what they like and dislike. In TV, for example, audience information influences what shows are kept on the air, and what types of episodes should be produced in the future (Jenkins 1992).

Given the complex interaction between producers and audiences, D'Acci (2004) has called into question the common perception that the media is a representation (or misrepresentation) of reality by pointing out that both media and the social world outside of media are social constructions, and thus could be considered equally fictitious. But acknowledging that the social world and the cultural world of media are both "representations" that mutually influence each other does not diminish the importance of the media in creating and perpetuating damaging master narratives about race, such as the association of black males with violence, and about gender, such as the idea that women and girls are sexual objects to be controlled by men. Although consumers are not passive acceptors of media information and they have some autonomy, producers do have economic and other power over consumers (Jenkins 1992), and hegemonic messages about sex, gender, and race do negatively influence many consumers (Alvermann and Hagood 2000; D'Acci 2004; Kellner and Share 2007a).

In addition to teaching youth how to analyze cultural texts in terms of social injustice, CML calls for social activism, transforming students from passive consumers of media to active participatory-democratic citizens (Jenkins et al 2013; Kellner and Share 2007a,b). One important means of social activism is the

student production of media that challenges dominant narratives, meaning that educators need to teach students the skills necessary for production (Giroux 1995), so that the creation of alternative media, and not just deconstruction of what already exists, is incorporated into the educational process (Kellner and Share 2005). The social activism aspect of CML means using media deconstruction to promote political engagement (Giroux 2001; Jenkins et al 2013), such that students use what they learn and see in media to understand and act on wider social issues outside the media domain. The ultimate goal of CML theorists is to create an active citizenry that feels connected to broad democratic ideas rather than ignorant of and alienated by them.

The literature on critical media literacy (CML) is clear about the first goal required to develop participatory-democratic skills: expose the social construction of media and the ideologies behind them. The question is how to develop a successful curriculum to meet this goal. A limited number of studies have assessed the impact of media literacy instruction on student cognition and skills (c.f., Hobbs and Frost 2003), and some empirical, quantitative work has tested the effectiveness of social justice curricula (Weisgram and Bigler 2007; Phalke, Bigler, and Green 2010). However, there are few studies that bring social justice and media literacy aspects together to test the application of a practical critical media literacy curriculum. Indeed, the empirical CML studies to date have mostly been qualitative, applying a post-modern theoretical approach to understanding how students make sense of popular culture. For example, Cherland (2008) provides a post-structural deconstruction of how children read the Harry Potter books. Cullen and Sandy (2009) discuss the reactions of young students to the remaking of a lesbian Cinderella story. In their books, Share (2009) and Alvermann, Moon, and Hagood (1999) describe many cases of how teachers applied post-modern deconstruction tools in their classrooms. Such qualitative studies as the ones described above are important in that they provide rich information about how innovative teachers attempt to unsettle traditional notions of power relations in society. Yet, the individual case description approach to the studies demonstrates the difficulty of developing and widely disseminating a post-modern CML curriculum.

Indeed, despite calls by Kellner and Share (2007a,b) and others (c.f., Giroux 1994) for incorporation of CML into school curricula, the field of education in the US has not embraced CML (Giroux 1994; Kellner and Share 2007a,b). Giroux (1994) argues that educators tend to pride themselves as being “scientific and objective,” and “practical,” and are thus somewhat suspicious of the ideological objectives of cultural studies (279). One way to make CML seem more appropriate in the eyes of educators might be to use more practical and positivist approaches to demonstrate the efficacy of CML. Many in education worry about representations of girls and women in the media (c.f., Gray 2005; Gannon 2007; Aina and Petronella 2011). Using more traditional methods of study to show how CML is effective at counteracting some of those problems may be a way to make CML more palatable to teachers and others in the field of education. Thus as part of the wider CML effort to help teachers and other educators see the value of CML, we developed a pretest-posttest comparison group design, in addition to using qualitative methods, to examine the effectiveness of CML instruction.

The Current Study

The goal of CML is to encourage students to think critically about media messages and to apply that knowledge of social criticism to their own educational experiences (Kellner and Share 2007a,b; Carr 2009; Kellner and Kim 2010). In this paper we pursue the former within the specific context of gender stereotypes related to occupations. Reaching this goal requires an understanding of discrimination and of how media messages may perpetuate it. In this study, we examine whether exposure to a curriculum unit on critical media literacy focused on gender stereotypes, especially as they pertain to male and female occupations, shifted students’ understanding.

Our specific questions were whether students exposed to the curriculum would show more pre-post change than students not exposed to the curriculum in beliefs such as: (1) that women experience discrimination in the workplace; (2) that the media influences the way people think about men and women;

(3) the media portrays stereotypical messages about women's interests in men and family and men's interest in careers; (4) the media portrays stereotypical images about women and men and in the context of occupations; and (5) the media influences their own behavior and occupational choices.

To gain additional information about what students learned in the workshops, we conducted semi-structured interviews with four students before and after their participation in the curriculum unit. The purpose of the interviews was to examine differences in student responses to questions about gender stereotypes in the media before and after exposure to the unit, and to find out what students felt they had learned in the workshops.

Methods

Study Context

We participated in a grant-funded project to develop and test a critical media literacy curriculum unit aimed at middle school students (12 to 14-year olds). We worked with two language arts teachers to develop the 4-lesson unit in Fall 2012 and early Spring 2013, and taught the unit in the teachers' classes in March-May of 2013. As a culminating assignment the students worked in groups to create video advertisements that challenged gender stereotypes.

With the help of a media consultant, we developed four workshops to teach students to be media literate. The 45-minute lessons comprised discussion and activities revolving around multiple examples of print and video ads. In Workshop 1, we introduced, demonstrated, and discussed the following: gender stereotypes, causes of stereotypes, the relationship between stereotypes and performance in school/occupations, media disruption, and the concept of critical media literacy. To facilitate understanding of these concepts and ideas, we showed students various provocative visual media, such as ads and posters, and asked students to discuss, in small and large group format, questions related to sexism, stereotypes, and the messages in the media. For example, after projecting and discussing two backpack ads, one geared towards girls that read "Light as a feather tough as long division" and one geared towards boys that read, "Superlight, super hero tough," we asked students to generate stereotypes about men and women which we documented in charts at the front of the room.

In Workshop 2, we discussed gender ideas about occupations, how those ideas can come from the media and how gender ideas influence access to economic opportunities. Activities in this workshop included discussing the results of a questionnaire they had completed indicating whether various jobs were typically associated with men, women, or both. We tabulated the students' responses, and students worked to cross-reference a salary sheet with the results to answer questions about which occupations had higher salaries and whether such jobs were typically associated with men or women.

In Workshop 3, students worked together to deconstruct television commercials and print ads. The lesson began with discussion of two video commercials advertising vacuum cleaners, one traditional, containing many negative occupation-related gender stereotypes and one alternative and compelling ad that is counter-stereotypical. In this Workshop students also worked in groups to deconstruct magazine ads that we gave them, and to construct alternative, counter-stereotypical ads, which they presented to the class.

During Workshop 3, we observed that students identified sexist messages in the ads that we, the facilitators, had not even noticed. For example, an ad selling car insurance showed a white, male mathematician having written an equation on the chalkboard. Students noticed that the formula suggested that girls were bad drivers as the pictorial graph essentially said, "putting on mascara plus the square root of deer on a rainy night equals car wreck."

At the end of the third lesson, students received a handout describing their final video ad assignment, which was to work in groups to create a video ad that related to occupations in some way and that challenged gender stereotypes. Students spent four class periods between the third and fourth lesson creating the videos

and then in the final lesson of the unit, the teacher played each video and students, teacher, and researchers discussed them.

We taught the lessons on Fridays and they were spaced one week apart except for the first two, which were two weeks apart. The researchers taught the first three lessons with the classroom teacher present. The teacher and the researchers co-facilitated the final lesson in which each student-produced video was shown and discussed.

Participants and Data Sources

The study took place at Kerryville Middle School (pseudonym), which enrolls about 1,000 students in grades seven and eight. The student population is 70% White, 10% Black, 16% Hispanic, and 4% multiracial; 53% of the students are low-income. Our participants were 264 seventh and eighth grade students. The treatment group comprised 5 seventh grade classes (25-30 students per class) to whom we taught the curriculum unit. There were a total of 131 students (66 girls and 65 boys) in the treatment group. We used 5 eighth grade classes as our control. Those classes numbered 133 with 60 girls and 73 boys.

Both seventh and eighth grade students filled out a brief 14-question survey. The questions on the surveys we administered were in the form of statements, with respondents selecting from four Likert-style choices indicating their level of agreement (strongly agree, agree, disagree, strongly disagree). The classroom teachers administered the questionnaire to the treatment and control group students before we taught the unit to the seventh graders and again after the units were complete.

We also conducted individual interviews with four seventh-grade students prior to and after the workshops. Specifically, the first interview took place three days prior to the first lesson, and the second interview took place five weeks later, which was five days after the final lesson. We asked the teacher to select two boys and two girls who would be comfortable speaking to us. The two boys and two girls comprised one 12-year-old and three 13-year-olds; one was African-American and three were White. The first author conducted the first set of interviews in a small conference room in the main office area in the school and the second set of interviews in an empty office in the same area. The interviews were brief, lasting between 10 and 20 minutes.

Findings

Survey Results

We analyzed students' responses to fourteen items on both the pre-test and post-test regarding gender discrimination in the workplace and stereotypes in the media. Given that we were unable to establish our groups through randomization, we conducted preliminary t-tests (pretest measures by condition) to assess the degree of exogenous differences between groups. On the pretest the control group (eighth grade students) expressed significantly more disagreement with the item, "In the media, I am just as likely to see female scientists as I am to see male scientists." The remaining pretest questions regarding stereotypes in the media were not significantly different.

Our primary statistical analyses examined whether students in the two conditions showed similar attitudinal changes from pretest to posttest. Nine of the 14 items showed significant interactions for time of testing by condition, all in expected directions.

In terms of beliefs about discrimination in the workplace, we found that the seventh grade treatment condition expressed significantly more increase in agreement pretest to posttest than the eighth grade control condition to the three items that asked about gender discrimination in the workplace. The three items were: women tend to have jobs that get paid less ($F_{1,236}=39.095$, $p<.001$), men tend to have more jobs available to them ($F_{1,237}=15.914$, $p,.001$) and men tend to have jobs that are perceived as more important ($F_{1,235}=31.051$, $p<001$).

We also found that students exposed to the unit were significantly more likely than students not exposed to believe that the media influences the way people think about men and women. Specifically, the

treatment group showed more pre-post change toward agreement that the media has hidden messages about gender ($F_{1,237}=18.009$, $p<.001$), that the media generally influences the way people think about men ($F_{1,236}=28.252$, $p<.001$), and that the media generally influences the way people think about women ($F_{1,235}=18.136$, $p<.001$).

Findings regarding student beliefs related to whether the media portrays stereotypical messages about women's interests in men and family and men's interest in careers were mixed. We did find that students in the treatment group showed more change in agreement that the media is likely to present women as sexy and in need of men's attention ($F_{2,235}=9.005$, $p<.01$). However, students did not significantly change their opinion about whether the media often presents women as moms or whether men are more likely than women to be shown as concerned with their careers.

We did find that students in the treatment group showed more pre-post change in beliefs about whether the media portrays stereotypical portrayals about women and men in the context of occupations. Specifically, students in the treatment group expressed significantly more increase in disagreement pretest to posttest than the eighth grade control group with the item, "In the media, I am just as likely to see female scientists as I am to see male scientists" ($F_{1,237}=31.288$, $p<.001$) and agreement with the item, "In the media, men are more likely than women to be shown as mathematicians" ($F_{1,237}=24.533$, $p<.001$).

We did not find that students exposed to the curriculum unit were more likely to believe that the media influences their *own* behavior and occupational choices. The treatment group was not significantly more likely after the treatment to agree with the statements "Media messages have an impact on how I behave" and "Media messages may impact the occupation (job) I choose."

Interview Findings

We transcribed the interviews and then read and reread them with a focus on interviewees' understandings and beliefs about stereotypes, on differences in understanding prior to and after the workshops, and on what they reported about the workshops in the second interview. Two findings emerged from the interview data. First, the one student who displayed the least amount of knowledge of gender stereotypes in analyzing the print ad in the pre-unit interview displayed much more knowledge in the second interview. Specifically, prior to the workshops, three of the students spoke knowledgeably about the basic male and female stereotypes in the Toys R Us gift certificate ad we showed them. Gail, for example, said: "The little girl dressed as a fairy and the boy has a light saber, so pretty stereotypical." In addition to identifying the stereotypical nature of the ad, these three spoke negatively about the stereotypes and how they do not give an accurate portrayal of all girls and boys. However, one of the four students, Anna, spoke less knowledgeably than the others. When asked what messages about boys and girls the ad gives us, she stated that boys and girls are different. However, she did not express any concern about the messages, and when asked what she thought of them, she said: "Well I think it is a good thing for younger kids so they [parents] know what the child likes." During the second interview, however, Anna's response to the different toy ad we showed was much more sophisticated: "Well, I'll say this is very stereotypical... They got like a boy there making crazy monsters and aliens and things, but they got the girl over here making flowers and pretty rainbows. But some girls do like the alien shows that come on... and then they don't show the boy liking flowers and they don't show the girl liking kooky things... So they should have said both girls and boys love kooky and pretty things, that would make it less stereotypical."

A second finding from the interviews is that when asked questions about what they got out of the workshops, all four provided a variety of responses consistent with important intended workshop learning objectives. For example, when asked what seemed most important to them from the workshops, both boys said it was how negatively the media portrays girls. Allan's answer was "About how badly they put like girls in like positions like as always putting men as the better gender," while Warren said: "The way that the media looks at females, probably. I think they sometimes are looking very disrespectfully and like you were talking about using them as sex objects, that part stood out the most..." In the case of Gail, since she had

appeared fairly confident and knowledgeable about gender stereotypes in her first interview, in the second interview the interviewer asked her whether she had learned anything in the workshops that she had not been aware of before. Referring to a Workshop 1 discussion about a print ad in which a woman is standing in a submissive posture behind her “husband,” she responded: “Yes. Like for the commercial on how they were posing I didn’t think that that was one [a gender message].” She added “and like that one ad that we had where it was on a chalkboard and how that was even a stereotype and all that stuff.” In this latter excerpt she is referring to the insurance ad described earlier showing a math teacher/insurance agent with an equation on the blackboard about a driver putting on makeup and getting into an accident.

When Anna was asked what stuck out most to her in the unit, she discussed the fact that media contain hidden messages:

Well, the messages is what hit me the most, because it is so crazy how you can say, “Oh, it’s just a piece of paper,” but when you go really into detail it’s like, “Oh, I didn’t even see the message, you had a deep message in there, you couldn’t even see,” and I’m like “Oh, I didn’t even see.” It’s like a code kind of, that they don’t even want people to see...

Anna also said that an important point she got from the workshops was to avoid judging males who dress and act in a stereotypically female manner. She spoke about a friend of her mother’s “that is a man but he’s kind of a girl but it’s okay because he’s very nice, he’s very funny and I love him... And it’s very good to think like because it is good.”

These interviews were brief, and student responses to the interviewer’s questions were likely influenced by a desire to please. As a supplement to the questionnaire results, however, the interview findings show that at least some students were able to independently and in an open-ended format articulate important knowledge they had gained or that at the very least had been reinforced in the curriculum unit. While the points raised above by Anna, Warren, and Allan pertained to CML ideas about discrimination and media messages that cut across the lessons, excerpts from Gail show that she remembered specific details from discussions that had occurred approximately two and five weeks earlier.

Discussion and Conclusion

To nurture active citizens, we must provide children with analytical tools that allow them to deconstruct hidden messages in the media. In this particular study, we were interested in students’ learning about media messages regarding gender, specifically, could a CML curriculum teach students about discrimination women experience inside and outside the media?

We asked first whether students exposed to the CML unit would show greater pre-post change in responses to questions about gender discrimination in the workplace. We found that the seventh grade treatment group did show greater pre-post change in agreement with the three job discrimination statements: women tend to get paid less, have less access to jobs and have jobs that are less valued. These were all questions about beliefs and attitudes. Although we cannot tell from these survey answers how deeply-held these beliefs were, our findings indicate that the unit was at least somewhat effective in teaching students about gender discrimination and is consistent with previous studies showing that education does change students’ attitudes about whether gender discrimination exists (Weisgram and Bigler 2007; Weisgram et al. 2010).

We also found that after the workshop students were more likely to report believing that the media influences the way people think about men and women. This finding is important because developing an understanding of the role of hidden media messages is a fundamental goal of both media literacy education and critical media literacy.

Interestingly, despite their agreement with the notion that media influences the way people in general think, students in the treatment group did not shift in their beliefs that their *own* behaviors would be affected by those hidden messages. During the workshops, we had heavily emphasized that the media has an influence on *all of us*, so from a methodological perspective one implication of this finding is that in

completing the survey the students were not simply putting down answers that they knew we would like, since in this case their responses contradicted one of our major messages. From an educational perspective, however, this finding is unfortunate in that changing the effects of media on gender stereotypes in the workplace and beyond can only happen when people see themselves as responsible for learning and perpetuating gender stereotypes. Although disappointing, this finding is consistent with research supporting Davison's (1983) third person effect theory, or the idea that people simply do not believe the media influences them the way it influences others (Golan and Day 2008). Third person effect theory tends to apply across the life span, but middle and high school age may be an even more difficult age span than others to convince students that the media affects them personally due to the tendency towards feelings of invincibility that characterize adolescence (Steinberg 2003).

Another question addressed in the study was whether students exposed to the critical media literacy curriculum unit were more likely to believe that the media portrays stereotypical messages about women's interests in men and family and men's interest in careers. Students in the treatment group did show more change in agreement that the media is likely to present women as sexy and in need of men's attention, a finding that makes sense in light of the high levels of interest students displayed when we showed examples of and discussed the portrayal of women as sex objects in the media. However, treatment group students were not significantly more likely after the workshops to believe that women are presented more as moms and men are presented more as careerists. A possible reason for the lack of significant difference in pre-post change on these items may be that many students already recognized, pre-workshops, that the media tends to present women as moms and men as careerists. Indeed, there was a change in pre-post mean for the treatment group in the expected directions, which was not true for the control group, whose means actually decreased a small amount pre-post. However, the pre-test scores for all students were relatively high on these two items, thus it may have been harder to show a statistically significant pre-post difference.

We found that students exposed to a critical media literacy curriculum were more likely to report believing that the media portrays stereotypical images about women and men in the context of scientific and mathematic occupations. The finding for the scientist item is especially interesting given that on the pretest the eighth grade control group was found to be significantly more in disagreement than the seventh grade treatment group with the same item. In other words, the eighth grade control group results showed a greater understanding of the reality of this issue prior to the workshops, but after the workshops the seventh grade treatment group changed their belief about the media presentation of women in science. The workshop may have been effective, then, at making students aware that the media is less likely to present women in STEM professions.

The pre-post test results of this study are promising. However, quantitative studies using a pre- and post-test Likert-style format are limited, as the ability to correctly respond to closed-format multiple choice questions in the context of school does not necessarily translate into more authentic skills of knowledgeably talking about and acting in a socially responsible manner regarding gender issues and the media. Our interviews with four students before and after the implementation of the unit provide some triangulation, as they indicate that the interviewees were able to describe ideas they learned from the curriculum unit. We don't know how convinced the two boys were that gender discrimination is important, but their responses indicate that they at least learned that some people do believe this, and they each expressed the concept of gender discrimination in their own words (i.e., using language that was not simply a parroting of what we presenters had said). Gail had come into the pre-interview already equipped with the understanding that the word "stereotype" was appropriate for describing the toy ad we showed them, and Gail and both boys had realized that expressing disapproval for the stereotypical nature of the ad was appropriate in that interview context. Anna did neither of these things in her pre-interview, but confidently did both of them in the post-interview, indicating that she may have learned to think somewhat differently about certain types of media. Of course we don't know how broadly any of the students will apply this thinking, but it corroborates the survey results in a promising manner.

Although the study results are promising, the study has many limitations. First, as alluded to earlier, survey responses may be indicators of surface level beliefs and understandings, but do not necessarily indicate depth of understanding or internalization of the beliefs and ideas that we were trying to teach. The curriculum unit was short, and the interview sample was very small. Also, although the interviews allowed for open-ended responses, we have no way of knowing from those responses either the extent to which students really understood or believed what they were telling us. We can say that the interview results indicate that students may have learned about negative stereotypes from the curriculum unit, but we cannot say for sure. Further, even if small changes in attitudes and knowledge occurred, we have no evidence that they would lead to changes in behavior.

Proponents of CML have been calling for its integration into education curricula for many years, however progress has been slow. One reason for this is that education has a strong focus on scientific evidence, practical concerns, and testing accountability. These concerns don't match well with CML which has a post-structural focus inconsistent with testing. Our testing here of a CML curriculum via quantitative means might be more convincing for some educators, by showing evidence, in a practical manner, that supports CML's effectiveness at changing students' understandings and beliefs.

In a small-scale curriculum initiative like this one, it is necessary to focus on a specific social justice issue. We chose to focus on an issue that is of current concern in the field of education: the lack of girls entering STEM fields. Our ultimate hope is that if boys and girls understand how media provides sexist messages about gender and jobs that influence girls' and boys' entrance into various professions, then both boys and girls will be better able to resist and counter such messages. Understanding that the sexist messages exist and that they influence people will only be helpful if students understand sex discrimination more broadly.

Implications for Future Research

Results of the study support the possibility that students may have learned from the curriculum unit that media contain messages that influence people in general; however, results were not positive in terms of student learning that the messages influence them personally. These findings point to a need, especially with this age group, for particular emphasis on how we are all influenced by media messages, even if we are not aware of it. One question for future research is how to break through the many psychological barriers people use to deny the media's influence on self. Previous studies show that when people hold strong beliefs, they are not easily dissuaded from the belief, even when factual information is presented to them (Dole and Sinatra 2011). Thus, even though actual demonstrations of media influence might be one strategy to shift the third person effect, we must recognize that education of this sort needs to be considered a long-term project rather than a one shot event. Providing multiple learning opportunities that begin with students' beliefs and experiences and that involve engagement in and collaborative discussion of meaningful problems related to the media's influence on students personally are most likely to be effective (Windshitl 2002).

This study also points to a need for more research, qualitative and quantitative, showing the impact of CML on the ability of students beyond responding to closed-ended school-like test items. We need to keep refining ways to both teach and to study these efforts as we continue to integrate CML into the curriculum in this age of accountability in U.S. education.

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