MEDIA CONSUMPTION AND EDUCATIONAL OUTCOMES: MEDIA IS ANOTHER FORM OF CULTURAL CAPITAL

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The following faculty members have examined the final copy of this thesis for form and content, and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Arts with a major in Sociology.

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ABSTRACT

Adolescent media use has been considered an important factor in shaping educational outcomes. In order to help adolescents succeed academically, it is important to understand how they utilize their time. The purpose of this study is to examine the culturally cultivated habits of adolescents in relation to academic outcomes. I argue that the relationship between media use and academics can be better understood when considering how adolescents develop their cultural habits. Using Pierre Bourdieu's theory of cultural capital to frame my analysis, I utilize secondary data from the Educational Longitudinal Study (ELS) for analysis. Overall, media use was associated with test scores, though the associations were not very strong. Visual media was negatively associated with test scores while leisurely reading was positively associated. Socioeconomic status, or SES, was shown to be the strongest predictor of math and reading scores; however, in my OLS models, the strength of SES declined when media use, student activities, and attitudes were accounted for. Moreover, the negative impact of consuming visual media is greater for higher SES students. Conversely, the positive impact of leisurely reading is larger for higher SES students. In conclusion, media is a cultural behavior and cultivated habits can affect educational outcomes.

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CHAPTER 1

INTRODUCTION

In a recent article titled *Managing Media: We Need a Plan*, the American Academy of Pediatrics, or AAP, voiced concern over how much time adolescents spend consuming media. The AAP (2013) claims that excessive use of television, video games, and cell phones is associated with, among other things, problems with school and academics. The AAP's main argument is that because of the continuing evolution of the digital age, we should change the way we address media by offering guidelines to parents and pediatricians. For pediatricians, the AAP points to the necessity for funding research about media's effects.

Researchers have long been interested in media use, especially in its relationship to educational outcomes for adolescents. A growing body of research suggests time that is consumed by media is associated with declines in test scores and grades (Bowen and Bowen 1998; Cooper, Valentine, Nye, and Lindsay 1999; Comstock and Sharrer 1999; Dumais 2008; Dumais 2009; Hofferth 2009; Roberts and Foehr 2004; Roe and Muijs 1998; Sharif and Sargent 2006; Weis and Cerankosky 2010). The general concern is that media consumption takes time away from activities that could be more productive or academically useful. However, the AAP is primarily concerned with the effect of visual media. In spite of the rapid growth of technology, many adolescents still spend time with another form of media: print. Leisurely reading is still an alternative to time spent in front of a screen. Moreover, leisurely reading correlates positively with academic success (Dumais 2008; Gaddis 2013; Hartas 2011; Jaeger 2011; Smith 1990). By acknowledging reading as another form of media, it becomes clear that reading can impact educational outcomes in ways different than visual media.

Of course, media consumption is not the sole contributor to academic performance. Most sociologists would agree that socioeconomic status, or SES, may be the strongest predictor of educational outcomes (see Sirin 2005 for meta analysis). Factors such as access to resources, health, and quality of teachers and schools play an important role in the link between SES and educational outcomes, but some research into SES suggests that how students utilize their time is also important. Evidence indicates that lower SES students tend to preoccupy their time with television and video games. This, in turn, leads to lower grades (Dumais 2008). Conversely, higher SES students spend more time reading. Such time has a positive impact on math and reading scores (Jaeger 2011) as well as grades (Gaddis 2013). Along with this, other research illustrates that higher SES students are more likely to participate in cultural activities that are linked to greater academic success (Aschaffenburg and Mass 1997; Dumais 2002; Eitle and Eitle 2002; Roscigno and Ainsworth-Darnell 1999). School sponsored activities have also been shown to be beneficial for student achievement (Jaeger 2011; White and Gager 2007), and higher SES families have more resources for these activities as well (Chowhan and Stewart 2007).

Student activity has to be considered along with SES for several reasons. First, it is important to understand students' behavior in terms of how they utilize their time. Second, if students are devoting too much of their time to activities centered around visual media, then they are likely less involved in activities in which they could benefit academically. Third, as previously mentioned, students who allocate their time toward school-sponsored or cultural activities tend to fare better academically. Also, one has to consider that low and high SES students may be different in their media use. Lastly, SES and student activity tie into the concept of cultural capital.

Cultural capital can be thought of as an individual's cultural competence that is developed from everyday experience. It is not just individual skills that give a social advantage; a person's attitude, way of thinking, and self-presentation are all of key importance (Bourdieu 1984). According to theory, an individual presents herself or himself in such a way as to display a sense of what is socially acceptable (i.e. "cool"). A person with a high level of cultural capital is said to possess knowledge or competency that provides a social advantage. In regard to educational outcomes, an example of this would be college admission. A student who is more knowledgeable about the process of college admission will have the better advantage. Students who write excellent admission essays and do well on ACT or SAT exams demonstrate more competency (Laraeu and Weininger 2003). The main point here is that culture itself is a form of capital. Moreover, cultural values, skills, and attitudes are dependent upon social context. For instance, attending a technology convention is going to require a different kind of competency compared to being in a golf tournament. Most importantly, some cultural competencies are more valued than others. That is, upper class culture influences which skills and competencies are the most highly valued (Bourdieu 1984).

While most would agree that education is of great value for all students, it can be argued that this ideal is perpetuated by the upper classes. Researchers who study education have developed a subarea in which cultural capital is used to understand why students from middle class or affluent backgrounds do better in school. The reasoning is that students derive cultural capital by participating in certain activities such as music, art, or even cultural trips outside of school. These kinds of activities are said to build cultural capital among students and thus, lead to better academic outcomes. As previously mentioned, higher SES students tend to be more involved in these activities (Aschaffenburg and Mass 1997; Dumais 2002; Eitle and Eitle 2002;

Rosigno and Ainsworth-Darnell 1999). Along with the "traditional" aspects of cultural capital (i.e. the "high arts"), researchers have expanded the concept in order to account for other types of student behavior as well as attitudes that students have about schooling (DiMaggio and Mohr 1995; Farkas, Sheehan, Grobe, and Shaun 1990; Jaeger 2011, Lamont and Laraeu 1988; Laraeu 2002). Thus, media consumption can be thought of as another dimension of cultural capital. After all, media use is another cultural activity.

The overall purpose of my study is to examine the behavioral habits of adolescents in relation to educational outcomes. More specifically, I am interested in behaviors, activities, and even attitudes that may help or hinder a student's cultural capital in ways that translate to academic outcomes. Arguably, the link between SES, media and academics may be partly explained through culturally acquired habits or ways of thinking. Students who are heavily involved in activities outside of school are less inclined to consume visual media, usually in the form of television. Students who are less involved in school-sponsored activities spend more time with media (Bartko and Eccles 2003; Chowhan and Stewart 2007). Also, students who are involved in extracurricular activities not only have higher test scores and grades, they also watch less television (Cooper et al. 1999; White and Gager 2007). Examinations of these habits do have policy implications. If cultural and school-sponsored activities are indeed shown to be more beneficial for student success, schools can encourage participation in activities outside of school by giving students more equal access to such opportunities. Along with this, teachers should continue to devote effort toward encouraging media literacy among students. More importantly, schools can take into account the concerns of the AAP and try to figure out ways to divert students' time away from excessive use of media that may be detrimental to student learning.

CHAPTER 2

LITERATURE REVIEW

2.1 Media Use, Socioeconomic Status, and Educational Outcomes

Research indicates that time spent with visual media (such as television, video games, or computer use not related to school) is associated with academic decline. Earlier research demonstrated that time spent watching television can have a negative impact on academic performance (Bowen and Bowen 1998; Cooper et al. 1999). Comstock and Sharrer (1999) claimed this relationship to be consistent for reading, math, and writing assessments. More recent studies have demonstrated that television time is associated not only with lower math scores, but also a decline in grade point averages (Dumais 2008; Dumais 2009; Sharif and Sargent 2006). Similar patterns of academic decline can be seen amongst adolescents who play video games (Dumais 2009; Sharif and Sargent 2006; Roe and Muijs 1998; Weis and Cerankosky 2010). A common explanation is that television and video games "displace" time that could be spent in more productive activities (Hofferth 2009). To be sure, earlier research failed to find a negative relationship between television and reading competency (Gaddy 1986) or mental aptitude (Gortmaker, Salter, Walker, and Dietz 1990). However, both of these studies used data from the 1960's, and it goes without saying that the media landscape has changed significantly since then.

Socioeconomic status, or SES, has also been shown to be linked to both media use and academics. Dumais (2008) found that lower SES students did spend more time with television and video games which led to lower math scores and grades. Dumais also found that as SES increased, time spent with television decreased. Other studies, while not focused on education, have also found a negative association between media use and SES. Television viewing is a

common activity among low income families (Kimbro, Brooks-Gunn, and McLanahan 2011; Tubbs, Roy, and Burton 2005) and it is more prevalent among the least educated adults (Berry 2007). Moreover, television time is higher among adolescents whose parents are less educated (Krosnick, Anand, and Hartl 2003; Vandewater, Park, Huang, and Wartella 2005; Wight, Price, Bianchi, and Hunt 2009). Generally, the overall pattern seems to be that media use is greater in lower SES families.

Socioeconomic status may shape not only the amount of media consumed but also the content. Vandewater et al. (2005) found that rules about a program's content are associated with higher incomes. Chowhan and Stewart (2007) argued that family income can influence the content of television viewing. Given these findings, it is possible that the impact of media use on educational outcomes could vary by SES. This could happen in two ways.

One possibility is that lower SES students are more academically disadvantaged by high levels of media use compared to high SES students. Part of this may be attributed to fewer restrictions for time (Vandewater et al. 2005) and content (Chowhan and Stewart 2007). However, parental practices that encourage media literacy also have to be considered. Notten, Kraaykamp, and Konig (2012) point out that viewing habits are transmitted to children through socialization from their parents. More importantly, Notten et al. found that lower SES families are less likely to encourage their children to think critically about television's content. Along with this, higher SES families tend to watch cultural or informational types of programming rather than anything that could be considered "popular" entertainment (Notten et al. 2012). A lack of media literacy might partly explain why the negative impact of media use can be greater among low SES adolescents (Dumais 2008), especially in the context of family coviewing (Crosnoe and Trinitapoli 2008).

Another possibility is that visual media can negatively impact higher SES students to a greater degree. Comstock and Sharrer (1999) claimed that as SES increases, the negative effect of media use on student achievement becomes more pronounced for middle to high SES students. Comstock and Sharrer further argued that this result can be attributed to parental educational attainment and occupation level. Earlier research certainly lends support to this claim. Fetler (1984) and Smith (1990) found that parental occupation interacts with television use to affect achievement. The association between television time and academics was positive for low SES students and negative for high SES students. In a longitudinal follow up study, Smith (1992) again found that the association between television time and achievement was more positive for low SES students and more negative for high SES students. Similarly, Caldas and Bankston (1999) also argued that for students from advantaged SES backgrounds, television viewing can have a moderately negative effect on student achievement. A common explanation is that television viewing can be more intellectually stimulating for low SES students and less challenging for higher SES students (Caldas and Banskton 1999; Fetler 1984; Smith 1990; Smith 1992). These findings do provide evidence that SES might interact with media to impact educational outcomes.

Another reason the impact of media use may vary by SES is that such variation might be related to alternative uses of time. For this reason, one must also consider student activity. Students who are involved in extracurricular activities spend less time watching television (Bartko and Eccles 2003; Chowhan and Stewart 2007). Moreover, extracurricular activities are associated not only with less television time, but also with higher academic success (Cooper et al. 1999; White and Gager 2007). Part of this may be due to time displacement. Media displaces time that could be spent for more productive or intellectually stimulating activities (Hofferth

2009). Arguably, time displacement can work in another way in the sense that extracurricular activities will displace time that might be devoted to the consumption of visual media. Simply put, students who are more active have less time for television or video games. However, higher SES families have more resources to allow for students to be active (Chowhan and Stewart 2007). Crosnoe and Trinitapoli (2008) found that higher SES families were the most engaged in cultural or sporting activities. Adolescents in these families demonstrated higher gains in math achievement. .As stated elsewhere, higher SES students are also more likely to participate in cultural activities, which in turn, can lead to better academic success (Aschaffenburg and Mass 1997; Dumais 2002; Eitle and Eitle 2002; Roscigno and Ainsworth-Darnell 1999; Jaeger 2011).

Given the body of literature pertaining to student involvement, it can be said that lower SES students are less likely to have the resources to displace time with visual media in favor of cultural or extracurricular activities. As discussed previously, media consumption and student activity both contribute to a student's cultural development. More importantly, SES, media use, and student activity are all related to Pierre Bourdieu's concept of cultural capital. As previously mentioned, student activity is believed to build cultural capital in ways that translate to greater academic success. However, if adolescents gain a sense of culture from media use as well as other activities, than it can be argued that media consumption is related to other aspects of cultural capital.

2.2 Cultural Capital and Educational Outcomes

As previously discussed, cultural capital can be thought of as having a certain combination of skills, values, attitudes, and behaviors that give one a social advantage. According to Bourdieu, each social class has its own pattern of lifestyle tastes, social cues, and

competencies. To be clear, Bourdieu did discuss the implications of all three forms of capital: economic, social, and cultural. Economic capital can be thought of as any monetary resource that is available. Indeed, it is well established that financial resources, or a lack of them, can make a difference in a student's academic success (Bankston and Caldas 1998; Eintwisle, Alexander, and Olson 2005; Hofferth, Boisjoly, and Duncan 1998; Pong and Ju 2000). Social capital is an individual's social network, or alliance that allows for connection to other opportunities or resources. Some scholars have found evidence that social capital is correlated with academic success (Crosnoe 2004; Flashman 2008; Hofferth et al. 1998; Pong 1998; Stearns, Moller, Blau, and Potochnick 2007).

All three forms of capital should be acknowledged. However, Bourdieu's analysis of cultural capital led him to conclude that cultivated habits are the ones most conducive to academic success (Bourdieu 1984). Hence, when testing the merit of Bourdieu's theory, media consumption should be looked at as another cultivated habit, albeit one in which visual media may be more detrimental for academic outcomes compared to reading. SES differences in education may be at least partly attributed to patterned behaviors, and adolescent time use of media may be related to other activities and experiences to which students are exposed.

For all the attention given to adolescent media use, it seems that scholars have not typically treated media as an activity that both shapes and reflects a student's cultural cultivation. The traditional definition of cultural capital has been an emphasis on high arts activities such as music, art, theater, or dancing. (Aschaffenburg and Mass 1997; Dumais 2002; Eitle and Eitle 2002; Roscigno and Ainsworth Darnell 1999). Scholars have argued that the concept of cultural capital can be expanded to include other activities besides those centered around high art or cultural activities. Students can acquire cultural capital through other extracurricular activities

(Jaeger 2011; Laraeu 2002). Cultural capital can be developed according to attitudes (DiMaggio and Mohr 1995), skills, or behaviors exemplified by students (Farkas et al. 1990; Lamont and Laraeu 1988). One example of this would be a student's grade being affected by their style of dress or even their mannerisms, as Farkas and colleagues. (1990) found. Another example would be that of a student devoting the necessary homework hours to complete necessary school work. In this instance, the student is performing a role behavior, likely with the attitude that education matters. Dumais (2008) argues that students who spend more time studying may be more attuned to the culturally prescribed values of doing well in school. Given that the concept of cultural capital continues to expand, it is reasonable to contribute to the growing body of research by treating media use as another dimension.

2.2.1 Media as Cultural Capital

Some evidence does suggest that media is a form of cultural capital. Wing-Chan and Goldthorpe (2005) claimed that there are two types of consumers. One type has an appreciation for theater, dance, and cinema while the other attends cinema only. Other researchers have found that the upper classes tend to prefer reading as a leisurely activity while the lower classes prefer going to the movies and watching television (Gayo-Cal, Savage, and Warde 2006; Le Roux, Rounet, Savage, and Warde 2008). However, media stratification by social class is not only about preference, but also resources and opportunities. The upper classes are going to have more resources that will enable leisurely reading as a social practice. If one's cultural capital could be measured by media consumption, then one can theorize that media may be associated with other forms of cultural capital.

While it is clear that media is another form of cultural capital, it is often not treated as such when it comes to examining educational outcomes. However, through the use of Bourdieu's framework, it has been shown that both SES and parental socialization are major roles in children's development of tastes for leisurely reading and television viewing (Notten et. al 2012). Sullivan (2001), Dumais (2008), Jaeger (2011), and Gaddis (2013) all acknowledge reading as a form of cultural capital, but they do not characterize reading as a form of media engagement. From a qualitative study, Sullivan (2001) concluded that students can derive more cultural capital from reading rather than participation in cultural activities. Sullivan demonstrated that students definitely gain more cultural capital from reading rather than watching television. Dumais (2008) found a positive association between leisurely reading and math scores, though the primary focus was more on adolescent time use in general. In addition to high arts participation, reading can have a positive effect on grades (Gaddis 2013) as well as reading and math scores (Jaeger 2011). Bartko and Eccles (2003) also found that students who were highly involved in activities outside of school spent the most time reading.

2.2.2 Reading, Cultural Capital, and Socioeconomic Status

Overall, one would expect that reading can be more beneficial for educational outcomes in comparison to visual media. Here again, SES may also shape the relationship between leisurely reading and student achievement. As mentioned above, Jaeger (2011) found that reading can have a positive effect on reading and math scores; however, Jaeger also found this to be more the case for higher SES students. This pattern can occur for several reasons. First, the practice of devoting considerable time to reading is more common among the higher classes (Griswold 2001); therefore, it is likely that for adolescents from higher SES families, reading is a more of a normative routine. Middle to upper class families will have more monetary resources

to purchase books. Second, it is important to make a distinction between everyday reading items (newspapers, magazines) and material that may be more intellectually challenging ("quality press" such as classical literature or nonfiction). In other words, content matters (Griswold, McDonnell, and Wright 2005). Preferences for challenging reading material have been shown to be concentrated among the higher educated (Wright 2006). For high SES students, the content of what they read may have a positive impact on academic achievement. Third, reading is a social practice and it has to be taught. A key finding from research by Hartas (2011) was that parents who were higher in income and maternal education spent more time reading with their children. Time directed at shared reading had a positive effect on literacy skills. This indicates that children from advantaged backgrounds are socialized at early ages to develop their literacy skills. Low SES students can benefit from leisurely reading, but it seems apparent that academic gains could be greater for higher SES students. Given the findings by Jaeger (2011) and Hartas (2011) one has to consider that SES might interact with reading habits as well as visual media to impact educational outcomes.

2.2.3 Cultural Capital and Educational Outcomes

Treating media as another dimension of cultural capital may help explain the relationship between SES and education. As stated earlier, Bowen and Bowen (1998) found that television time can have a negative impact on academic performance. More importantly, Bowen and Bowen also argued that cultural upbringing within the home ("home academic culture") can have an indirect effect on academic performance in the sense that this process is mediated by "educational meaning." In other words, home culture shapes a student's perception that school is fun, exciting, or enjoyable ("educational meaning"). Thus, devoting time to either homework or television is dependent upon how positively educational meaning is perceived. To be clear,

Bowen and Bowen did not frame their results along the lines of a cultural capital framework, but these results do lend themselves to a cultural capital perspective. For one thing, Bourdieu himself argued that cultural capital is developed within the home (1984). Moreover, as stated elsewhere, both student attitudes and time spent doing homework can be thought of as cultural capital. Along with this, the research discussed thus far exemplifies how high SES students are more likely participate in cultural or school sponsored activities. They watch less television and leisurely reading is more strongly associated with academic gain. Altogether, the literature highlights the possibility that the relationship between SES and education might be mediated by a student's cultural cultivation. As I have argued, media use also contributes to a student's cultural development.

2.3 CURRENT STUDY

In this quantitative study, I contribute to the literature by taking into account several dimensions of cultural capital (Dumais 2008; Jaeger 2011; Laraeu 2002) rather than restricting my analysis to one facet. Much of the literature, even those bodies of work that call for redefining the concept, is focused on only one or two aspects. More importantly, since media is another form of cultural capital, two types of media activity are examined: time spent with visual media and leisurely reading. Media use might be associated not only with SES, but also other cultural capital dimensions. Furthermore, media use as well as other forms of cultural capital may help explain SES differences in educational outcomes. Additionally, SES might interact with media use to affect educational outcomes. For this study, I use a nationally representative sample of American high school sophomores to test Bourdieu's theory.

RESEARCH QUESTIONS

1. How is SES associated with media use?

2. How is media use associated with educational outcomes?

3. How is media use associated with other forms of cultural capital, including high arts participation, extracurricular activity, student attitudes, and time spent doing homework…?

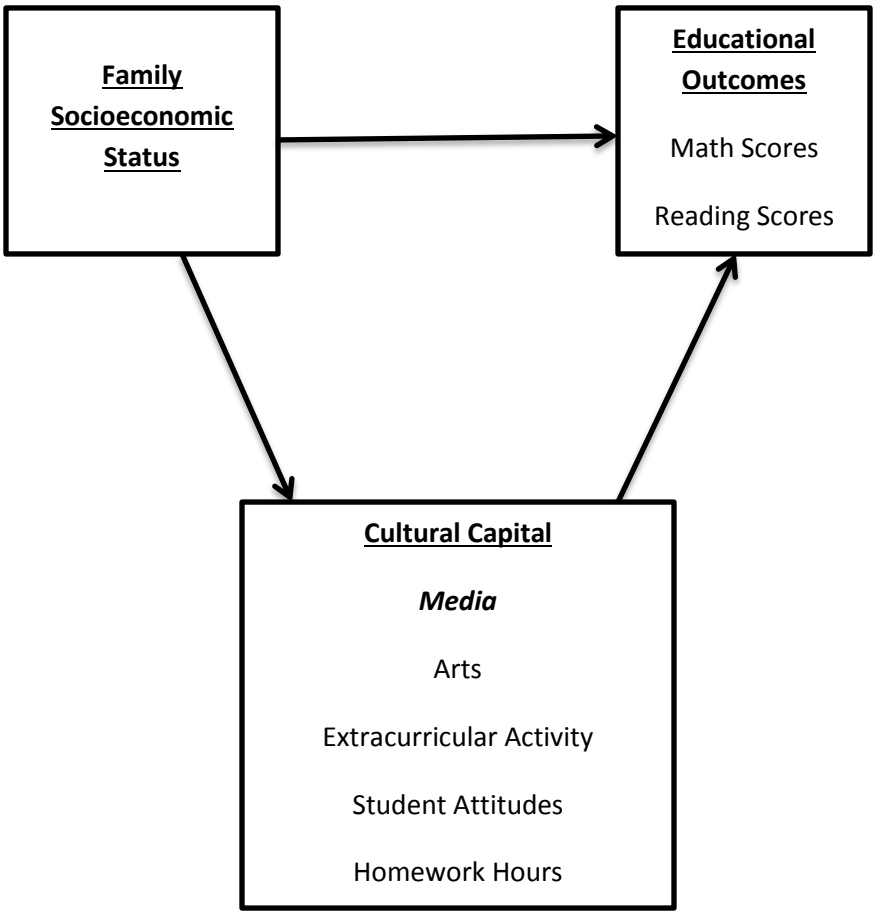
4. Can media and other forms of cultural capital help explain SES differences in educational outcomes?

5. Does SES moderate the association between media use and academics?

CHAPTER 3

THEORETICAL MODEL AND HYPOTHESES

THEORETICAL MODEL



As previously stated, much of the literature about educational outcomes that pertains to cultural capital is focused on only one facet, whether it is the traditional emphasis on the high arts or the addition of another dimension. Moreover, media is overlooked as another form of cultural capital. This model allows for the examination of media in comparison to other cultural capital variables. Of course, SES is a key factor in all four model segments. For this study, I examine two dependent variables: math scores and reading scores. One reason for this is that these measures of educational outcomes are commonly found in the literature as indicators of academic success and student achievement (Caldas and Bankston 1999; Comstock and Sharrer 1999; Crosnoe and Trinitapoli 2008; Dumais 2008; Dumais 2009; Fetler 1984; Gaddis 2013; Jaeger 2011; Smith 1990; Smith 1992). More importantly, examining test scores in two subjects gives a clearer picture of how media use shapes education and media use might shape math achievement in ways different from reading. The model is comprised of four segments.

3.1 First Model Segment

For the first segment, SES is tested for associations with test scores. Sex, race, and family composition are treated as controls. All three of these social characteristics should be considered. Both boys and girls can experience academic decline in relation to television use (Dumais 2008), but males do spend more time with video and computer games (Roberts and Foehr 2004). This suggests that boys and girls use media differently. In regard to race, African American students watch twice as much television as white students on average (Tagney and Feshbach 1988). Interestingly, it has been found that African American students with the highest grades also report the most media use while Hispanic students with moderate average grades report the least (Roberts and Foehr 2004). Additionally, other research indicates that for low SES African American students, the association between television and academics is actually slightly

positive (Bankston and Caldas 1999). For family composition, study time tends to be higher in two parent families (Wight, Price, Bianchi, and Hunt 2009). Along with this, children in single parent families watch twice as much television (Tangney and Feshbach 1988). Furthermore, recent research consistently finds that the academic achievement of children from single-parent households is much lower compared to their peers who come from biological two-parent or step-parent families (Shaff, Wolfinger, Kowaleski-Jones, and Smith 2008; Shriner, Mullis, and Shriner 2010). These findings highlight the importance of examining family composition along with SES. The relationship between SES and education has been demonstrated throughout the literature; however, before testing for media use, it is more conservative to test for this relationship rather than assume that such a relationship existed within the sample.

3.2 Second Model Segment

For the second segment of the model, visual media and leisurely reading were tested for associations with math and reading scores. This allows for comparing the relative strength of these two media types to SES in relation to test scores. Before examining the strength of these relationships, it is imperative to establish the relationship between SES and media at the bivariate level. Given previous research finding SES differences in media use among low SES families and students, (Chowhan and Stewart 2007; Comstock and Sharrer 1999; Dumais 2008; Fetler 1984; Krosnick et al 2003; Smith 1990; Smith 1992; Vandewater et al. 2005; Wight et al. 2009), it is reasonable to anticipate a negative bivariate association between SES and visual media. Considering research on students' reading habits (Hartas 2011; Jaeger 2011; Notten et al. 2012), one should also expect a positive bivariate association between SES and leisurely reading. I certainly expect media use to be associated with educational outcomes, but these associations may be different for visual media compared to time spent reading. Since visual media has been

shown to be associated with academic decline (Bowen and Bowen 1998; Cooper, Valentine, Nye, and Lindsay 1999; Comstock and Sharrer 1999; Dumais 2008; Dumais 2009; Hofferth 2009; Roberts and Foehr 2004; Roe and Muijs 1998; Sharif and Sargent 2006; Weis and Cerankosky 2010) I would expect an overall negative association between visual media and test scores in bivariate and multivariate analysis. Along with this, reading should be expected to be positively associated with test scores (Dumais 2008; Gaddis 2013; Jaeger 2011; Smith 1990), also in my bivariate and multivariate analysis. However, I would also expect this association to be stronger for reading scores in comparison to math assessments.

Hypothesis 1A: Visual media hours will be negatively associated with SES.

Hypothesis 1B: Leisurely reading hours will be positively associated with SES.

Hypothesis 2A: Visual media hours will be negatively associated with math scores.

Hypothesis 2B: Visual media hours will be negatively associated with reading scores.

Hypothesis 2C: Leisurely reading hours will be positively associated with math scores.

Hypothesis 2D: Leisurely reading hours will be positively associated with reading scores.

3.3 Third Model Segment

For the third segment of the model, other measures of cultural capital were added. Per the literature, these measures should include not only analysis of arts participation (Aschaffenburg and Mass 1997; Dumais 2002; Eitle and Eitle 2002; Rosicgno and Ainsworth-Darnell 1999), but also involvement in other extracurricular activities (Jaeger 2011; Laraeu 2002), assessments of student attitudes (DiMaggio and Mohr 1995), and role behavior (Farkas et al. 1990; Lamont and Laraeu 1988) measured by the number of homework hours. At the bivariate level, the

expectation is that media will be associated with other forms of cultural capital. Again, this would depend on the type of media. Students who not only like school but are also more involved may prefer reading over visual media (Bartko and Eccles 2003; Sullivan 2001). In addition to arts participation, reading has been shown to be positively related to test scores and grades. Therefore, one can expect that visual media is negatively associated with other forms of cultural capital. Conversely, it can be reasoned that reading would be positively associated with other cultural capital aspects. More importantly, this portion of the model allows for multivariate comparisons of the relative strength of other cultural capital variables in relation to media, SES, and test scores. Before testing for multivariate results, it is pertinent to test for relationships between media and other cultural capital variables in bivariate analysis.

Hypothesis 3A: Visual media is negatively associated with other forms of cultural capital.

Hypothesis 3B: Leisurely reading is positively associated with other forms of cultural capital.

The third segment of the model also allows for the testing of another possible outcome. As discussed previously, the body of research suggests that media and other forms of cultural capital might mediate the relationship between SES and educational outcomes. Based on these findings, results should indicate the possibility that the relationship between SES and educational outcomes is shaped by a process in which media and other forms cultural capital can intervene.

Hypothesis 4A: The relationship between SES and math scores will be partially mediated by other cultural capital variables, including media.

Hypothesis 4B: The relationship between SES and reading scores will be partially mediated by other cultural capital variables, including media.

3.4 Fourth Model Segment

For the fourth segment of the model, interactions were tested to determine if SES interacts with media to impact educational outcomes. As mentioned elsewhere, SES can interact with media to impact educational outcomes. Furthermore, research demonstrates that higher SES students can be more negatively impacted by the use of visual media (Comstock and Sharrer 1999; Fetler 1984; Smith 1990; Smith 1992). Also it has been found that higher SES students tend to benefit more from their reading habits (Hartis 2011; Jaeger 2011). Thus, one can expect SES to interact with visual media and reading to impact test scores. For higher SES students, the relationship between visual media and academics would be more negative. I also expect that an association between time spent reading and test scores will be more positive for high SES students.

Hypothesis 5A: The negative impact of visual media on test scores will be greater for higher SES students.

Hypothesis 5B: The positive impact of leisurely reading on test scores will be greater for higher SES students.

CHAPTER 4

METHODS

4.1 Data

The data was obtained from the Educational Longitudinal Study of 2002 (ELS). This data collection was sponsored by the National Center for Education Statistics (NCES). In their sophomore year, students were administered the questionnaire during the spring of 2002. The method was probability sampling and national probability selection was a two-stage process. First, 752 public, Catholic, and private schools were selected. Second, tenth-grade students were selected within each school. This resulted in 15,362 students. The response rate for schools was 68 percent. The response rate for students was 87 percent. The NCES collected data in follow up years of 2004, 2006, and 2012, but for this study, only the first wave of data from 2002 was utilized.

4.2 Sample

For analysis, the sample was restricted to students who had completed a base year questionnaire. Students who had completed only one test were also removed. This restriction was to ensure that results from analysis would not be based on three different samples. Additionally, students were included if there were no missing values on the dependent variables. Missing values were removed from the dependent variables and eliminated from the variables for SES, visual media, and leisurely reading. For the remaining cultural capital variables, missing values were imputed using median substitution. Additionally, imputation flags were created using the imputed variables. The reasoning for this was to determine if the imputed values themselves might possibly affect multivariate analysis. Preliminary multivariate analysis indicated that the

effects of the imputed flags were negligible. Outliers were also removed after preliminary analysis suggested they could have been problematic. After outliers and missing values were removed, the final sample size was 12992 respondents.

The ELS provides a sample weight. After this variable was applied to the sample, the relative weight was obtained by dividing the standard weight by the mean. The relative weight was then used to maintain the sample size. When the relative weight is applied, the sample is more reflective of the target population. Also, bias is reduced and findings are more generalizable.

4.3 Variables

4.3.1 Dependent Variables

The dependent variables are standardized math and reading scores. Scores for math and reading are the result of achievement tests directly administered by the NCES. Instead of scoring the exact number of correct or incorrect answers, the NCES provided estimated scores of the number of correct answers that students would have produced if they had finished the assessments in a timely manner. The scores were based on patterns of student responses, not the precise number of correct or incorrect answers. This was to compensate for any guesswork from students that might not accurately reflect their skills. Afterward, scores for these tests were standardized in the sense that they were transformed and rescaled to reflect students' achievement relative to their position above or below the national averages for math and reading. They are relative values meant to reflect a mean of 50. For this study, standardized scores were used.

4.3.2 Independent Variables

4.3.2.1 Socioeconomic Status

In bivariate and multivariate analysis, I examined the extent to which socioeconomic status is related to test scores. Therefore, I treated socioeconomic status as an independent variable. More specifically, I used a continuous measure of socioeconomic status (BYSES1) that is actually a composite of socioeconomic characteristics. Both are comprised of 5 variables that include: father's education, mother's education, income, father's occupation, and mother's occupation. Both of them utilize prestige values that are continuous. It should be noted that the ELS provides 2 composites of SES (BYSES1, BYSES2). The main difference is that the first composite (BYSES1) uses index values from the 1961 Duncan index. The second composite (BYSES2) uses index values from the 1989 General Social Survey. The first composite was used because preliminary analysis indicated that the distribution for this variable was closer to normal.

4.3.2.2 Media Use

A major focus of the research is how media consumption is associated with educational outcomes. In multivariate analysis, media was also treated as an independent variable. It should be noted that time spent with visual media as well as the total number of reading hours were examined. Students were asked a series of questions pertaining to how often they watched television, played video or computer games, and how often they spent time on a computer for purposes other than for school. These items were combined into an index, visual media use. Students were also asked about the number of hours in a week they spent reading. Preliminary analysis indicated that this variable was not normally distributed. Thus, reading hours were recoded to reflect values ranging from 0 hours to 6 or more hours.

4.3.2.3 Other Cultural Capital

In multivariate analysis, additional measures of cultural capital are also included as independent variables. In one item, students were asked how often they took a music, art, or language class. Students were also asked a series of questions pertaining to whether or not they participated in extracurricular activities such as the school band, play, student government, or academic clubs. The items "school band" and "school play" were combined with the original arts participation item to create a binary variable that whether or not students participated in the arts (0=not involved, 1=involved). Other items related to extracurricular participation were combined into one binary variable to indicate extracurricular participation (0=not involved, 1=involved). Additionally, in a series of four items, students were asked about their overall attitudes regarding school in general. These items are: 1) "classes are interesting and challenging," 2) "satisfied by doing what is expected in class," 3) "has nothing better to do than school", and 4) "education is important to get a job later." Responses for these items were recoded to range from 1 ("strongly disagree") to 4 ("strongly agree"). These items were then combined into a scale that was reflective of students' overall attitudes (Cronbach's alpha=.74). Also, students were asked to report the total number of homework hours in a week. Values for this variable ranged from 0 to 26 hours. This item was used as a measure of student role behavior.

4.3.2.4 Controls

Sex, race, and family composition were treated as controls for all segments of the model. *Sex* was recoded as 0 for male and 1 for female. Males were treated as the reference group. *Race/Ethnicity* was recoded into four categories: Non- Hispanic White, Hispanic, Non Hispanic Black and Other Race/Ethnicity. Each of these four categories were also treated as binary

variables. For these binaries, Non- Hispanic White respondents were the reference group. *Family composition* was recoded into four categories: Biological Two-Parent Families, Single- Parent Families, Step- Families, and Other Families. These categories were also treated as binaries. Respondents from Biological Two-Parent Families were treated as the reference group.

4.4 Plan of Analysis

First, I tested the associations between SES and test scores. For the first research question, bivariate correlation tests were conducted to determine how SES is associated with visual media and leisurely reading. For the second research question, correlation tests were conducted to examine the relationship between media use and test scores. Here again, analysis was done for both visual media and leisurely reading. For the third research question, bivariate associations were conducted to test for associations between media use and other forms of cultural capital. Correlation tests were used to determine how visual media and leisurely reading are associated with student attitudes as well as time spent doing homework. Independent t-tests were done for students who were categorized according to their participation in the arts or extracurricular activities. T-tests were conducted to determine if these groups of students differed in their consumption of visual media as well as time spent reading.

Ordinary Least Squares Regression, or OLS, was conducted to answer research questions 4 and 5. OLS was used to analyze how the relationship between SES and education might be mediated by cultural capital factors. This was done for math and reading scores. For model 1, associations were tested between SES and test scores while controlling for sex, race, and family composition. For model 2, visual media and leisurely reading were added to see how media is associated with math and reading scores, net of sex, race/ethnicity, and family composition.

Other cultural capital variables were added in model 3. For this portion of the model, accounting for all cultural capital variables allowed for analysis of the possibility of the relationship between SES and test scores being mediated by these factors. Variance partitioning was also done for this portion of the model in order to determine how much of the variance was attributed to each variable. More specifically, media and other cultural capital variables were of particular interest. Variance partitioning can provide information about how much of a role these variables would play in comparison to SES. For the fifth research question, SES interactions were analyzed. For model 4, interaction tests were conducted to determine if SES interacts with media use to affect test scores.

CHAPTER 5

RESULTS

5.1 Univariate Results

5.1.1 Dependent Variables

Table 1 presents the means for the dependent variables. The average score for standardized math tests was 50.79 with a standard deviation of 9.68. The average score for standardized reading tests was also 50.79 with a standard deviation of 9.75.

5.1.2 Independent Variables

5.1.2.1 Socioeconomic Status

Table 1 also presents the descriptive results for the independent variables. For the socioeconomic composite, the mean was .02 with a standard deviation of .712 (Table 1). Since this variable was standardized to reflect z scores relative to a student's SES rank, a mean of .02 indicates the sample is somewhat skewed to favor students who are middle to high SES status.

5.1.2.2 Media

For the number of hours spent consuming visual media, the average was 12.2 with a standard deviation of 6.05 (Table 1). The distribution for this variable was positively skewed in the sense that there were a fair number of values concentrated in the high end. For the total number of hours spent reading for leisure, the average was 2.08 with a standard deviation of 2.07 (Table 1). This variable had some positive skewness as well. These results suggest that

sophomores in 2002 spent more time with television, video games, and even computer use for non school purposes in comparison to reading for leisure.

5.1.2.3 Other Cultural Capital

For students categorized according to arts participation, 60.3% did not participate in the arts, 39.7% reported participation (Table 1). For students who participated in other extracurricular activities, 65.9% did not participate. 34.1 percent reported participation in some kind of extracurricular activity (Table 1).

For student attitudes, the mean was 3.04 with a standard deviation of .53 (Table 1). A mean of 3 indicates that on average, students had a positive attitude toward school. The distribution for this variable was approximately normal. For time devoted to homework, students spent an average of 5.77 hours doing homework. The standard deviation was 5.78 (Table 1). This distribution was also skewed to the right in the sense that a fair number of values were concentrated in the higher end.

5.1.2.4 Control Variables

Table 1 also presents the percentages for the nominal control categories of sex, race, and family composition. 49.4 percent were males, 50.6% were females. For race and ethnicity, 62.7% were White, 14.7% were Hispanic, 13.3% were Black Non Hispanic, and 9.4% were from other minority groups. For family composition, 57.6% were from biological families. 21.5% came from single parent families. 18.6% were from step families. 2.3% reported some other kind of family arrangement that differed from the other groups (e.g. living with one parent part of the year).

5.2 Bivariate Results

5.2.1 Socioeconomic Status and Test Scores

Before testing for associations between SES and media, it was important to test for relationships between SES and test scores. Pearson's correlation coefficients were conducted to determine the relationship between SES and test scores (See Table 2). For both tests, the results were statistically significant. SES was moderately and positively correlated with math scores ($r=.423$, $p<.001$). SES was also moderately and positively correlated with reading scores ($r=.406$, $p<.001$). Altogether, this means that the higher a student's SES potion, the more likely it is that the student will score well in math and reading.

5.2.2 Socioeconomic Status and Cultural Capital

Pearson's correlation coefficients were conducted to analyze the relationship between SES and media use (See Table 2). A negative relationship was found between socioeconomic status and the total number of hours spent consuming visual media ($r=-.108$, $p<.001$). Even though this relationship was statistically significant, it is also not a strong relationship. This means that with an increase in SES, less time will be spent with visual media, but only slightly less. A positive relationship was found between socioeconomic status and the total number of hours that were spent reading ($r=.038$, $p<.001$). Here again, the relationship is statistically significant, but also very weak. In fact, given how close the value is to zero, one could argue this relationship is almost, but not quite, non-existent. Higher SES students may spend more time reading, but in this case, the total number of readings hours increase only slightly at best. Overall, these findings do indicate that the relationship between SES and media use is significant, but also not very strong.

Bivariate associations were also tested to examine the relationship between SES and other cultural capital variables. These associations help determine how strongly other cultural capital aspects are associated with SES. They can also provide a clearer picture of how strongly these variables are associated with SES in comparison to media. Independent t-tests (Table 3) indicated that SES was significantly associated with arts ($t= -14.9$, $p<.001$) and extracurricular participation ($t= -17.1$, $p<.001$). The effect sizes for the arts (Cohen's $d=.11$) and extracurricular groups of students (Cohen's $d=.15$) were not large. This suggests that these activities are associated with SES, but only minimally. Pearson's correlation coefficients revealed an insignificant relationship between SES and student attitudes ($r= .001$, $p >.05$) as well as a positive yet weak relationship between SES and homework hours ($r=.168$, $p <.001$). These results suggest that a student's attitude toward school is not related to SES. For homework hours, higher SES students seem to spend a little more time during the week doing homework, but the increase in homework time is not substantial.

5.2.3 Cultural Capital and Test Scores

Pearson's correlation coefficients were conducted to determine the relationship between media use and test scores (See Table 2). A negative relationship was found between visual media and math scores. The relationship was statistically significant ($r= -.152$, $p<.001$). Here again, the relationship was not very strong. The time that students spent consuming visual media was associated with a decline in math scores, but only slightly. A positive relationship was found between total reading hours in a week and math scores. This relationship was significant but weak ($r=.085$, $p<.001$). The amount of time that students spent reading was only slightly associated with an increase in math scores. One could say that this increase was so slight that the relationship is almost non-existent. A negative relationship was found between consumption of

visual media and reading scores. This relationship was significant but weak as well (r= -.161, p<.001). As students spent more time with visual media, their reading scores did decline but not in a way that was very substantial. The opposite pattern was seen when comparing total reading hours to reading scores. Time spent reading was positively associated with an increase in reading scores. The relationship was statistically significant but also weak (r= .189, p<.001). For students, reading in their spare time was only minimally associated with an increase in reading scores. This relationship does not appear to be nearly as strong as one might expect. These findings illustrate a pattern of media being weakly related to test scores. However, as expected, the results also demonstrate that visual media is associated with student achievement in ways different from reading.

Though it is not specified in the table, other analysis of quartile measures indicated that a negative relationship between visual media and test scores was the strongest for the highest SES quartile. Conversely, a positive association between leisurely reading and test scores was the strongest for the highest SES quartile. This suggests that higher SES students are more likely to be negatively affected by consumption of visual media and are also more likely to see gains in their scores by spending more time reading. These findings suggest that SES might have a moderating influence in the sense that it can interact with media to affect test scores, even though the associations are not very substantial.

Other bivariate tests were conducted to determine if other cultural capital variables were associated with test scores. For math scores, arts participation (t= -10.4, p<.001) and extracurricular participation (t=-24.0, p<.001) were associated with higher math scores (Table 3). However, the effects sizes for arts participation (Cohen's d=.10) and extracurricular involvement (Cohen's d=. 46) were small, though the effect size for extracurricular participation was

noticeably larger. This pattern was also found for reading scores. Involvement in the arts (t=-14.03, p <.001) and extracurricular activities (t=-25.2, p<.001) were both associated with higher scores (Table 3). The relationship between extracurricular activity and reading scores revealed the larger effect size (Cohen's d=.45). For arts participation, the effect size was smaller (Cohen's d=.27). Pearson's correlation coefficients indicated that both student attitudes and total homework hours were weakly associated with test scores (Table 2). For student attitudes, the associations were positive for math (r=.056, p<.001) and reading scores (r=.068, p<.001). For homework hours, the associations were also positive for math (r=.222, p<.001) and reading scores (r=.213, p<.001). In terms of cultural capital, the results described above indicate that at the bivariate level, homework hours and extracurricular participation may be more strongly associated with student achievement compared to other cultural capital factors, including media.

5.2.4 Media and Other Cultural Capital

In addition to test scores, associations between media use and other forms of cultural capital were also examined. Independent t-tests were conducted to determine whether students who participated in the arts differed significantly in their use of media compared to students who do not participate in such activities (See Table 3). More specifically, for each group of students, two tests were conducted: one for visual media and one for total reading hours in a week. For visual media, the result was statistically significant. Students who were not involved in any kind of arts participation did spend more time consuming media such as television or video games (t=10.5, p<.001). However, the effect size was very small (Cohen's d=.18). This also means that though uninvolved students do spend more time with visual media, the amount of time is not substantially greater compared to students who participate in the high arts. That is, the relationship is not very meaningful. For the total number of reading hours in a week, the result

was also statistically significant (t= -15.3, p<.001). Students who were involved in the art activities did spend more time reading. However, the effect size was small (Cohen's d=.26) yet also larger compared to hours for visual media. One could argue that students do develop more cultural capital from reading rather than visual media. The small effect sizes also suggest that as a form of cultural capital, reading may not be as strongly associated with arts participation as one might expect.

Independent t-tests were also conducted to determine if media use varies for students who are involved in other extracurricular activities besides the arts (See Table 3) For visual media, the result was statistically significant (t=12.1, p<.001). Students who were not involved in any extracurricular activities did spend more time watching television or playing video and computer games. Here again, the effect size was small (Cohen's d=.21). This means that the difference in time devoted to television, video games, or other non-school related computer activities is not very substantial for these two groups of students. For the total number of reading hours in a week, the result was also statistically significant (t= -12.2, p<.001). Students who were involved in extracurricular activities did spend more time reading compared to students who were uninvolved. Once again, the effect size was small (Cohen's d=.22). As with students who participate in the arts, students involved in other extracurricular activities do devote more time to reading. As a form of media, reading does seem to be more positively related to other forms of cultural capital compared to visual content. Still, reading may not be strongly related to other cultural capital dimensions.

Pearson's correlation coefficients were conducted to examine the relationship between media use and positive attitudes toward school (See Table 2). There was a significant negative relationship between visual media consumption and attitudes about school (r= -.067, p<.001).

This relationship is also weak to the point of being almost non-existent. This means that having a positive attitude about school ("school is important, "nothing better to do than school") can shape the amount of time devoted to visual media in one sense. A positive outlook can be related to a decline in time spent with visual media, if only slightly. The opposite pattern was found for the total number of reading hours in a week. There was a significant positive association between reading hours and attitudes ($r= .166$ $p<.001$). This relationship is also weak but stronger compared to the results for visual media. A positive attitude toward school can be associated with more time spent reading, but the likelihood is not very high. These findings do suggest that a positive attitude toward school is more strongly associated with reading compared to visual media. Here again, reading appears to be more positively related to cultural capital in comparison to visual media.

Additionally, Pearson's correlation coefficients were conducted to examine the relationship between media use and homework hours (See Table 2). The association between visual media and homework hours was significant but also weak ($r= -.040$, $p<.001$). The amount of time spent on homework can decline for some students, but this decline is so slight the relationship is almost nonexistent. The relationship between reading hours and homework hours is stronger and also significant ($r=.225$, $p<.001$), but this relationship is also weak. Still, it is stronger for reading hours. Yet here again, reading seems to be more positively associated with cultural capital compared to visual media. Time that is spent reading can be associated with more hours devoted to doing homework.

5.3 Multivariate Results

Multivariate models were conducted separately for math and reading scores, with each test being comprised of 4 models. In model 1, SES was tested for association with math and reading scores while controlling for sex, race, and family composition. In model 2, visual media and leisurely reading were added to determine, net of other factors, if media consumption is associated with test scores. This also helped to determine the strength of SES as a predictor compared to media use. In model 3, other cultural capital variables (arts participation, extracurricular activity, student attitudes, homework hours) were also analyzed. This allowed for comparing the relative strength of media to other cultural capital variables. More importantly, it allowed for assessment of the strength of SES as a predictor and whether or not it declines when cultural capital is accounted for. If the association between SES and test scores is being mediated by cultural capital, then the strength of SES as a predictor should decline once cultural capital is added to the model. Variance partitioning was done for the third portion of the model in order to determine how much of the unique variance can be attributed to SES, media, or other cultural capital variables. In model 4, interactions between SES and media were tested to assess the possibility of whether or not SES can shape the relationship between media and test scores. SES interactions were tested for visual media and reading.

Although the dependent variables of math and reading scores were not normally distributed, there were over 12,000 cases. None of the independent variables were correlated over .70 with any other independent variable. This suggests that multicollinearity was not a problem. Tests for outliers were also conducted. The maximum found in the Mahalanobis distance test was 73. The general guideline for the Mahalanobis test is that outliers in excess of 25 could exert an undue effect on regression results. Also, the maximum value for the Centered

Leverage Value test was more than three times the mean. The general rule for the Centered Leverage Value is that a value greater than three times the average is an indicator of problematic outliers. After the outliers were removed, regression tests were conducted again.

5.3.1 Math Scores

An Ordinary Least Squares Regression analysis was conducted to determine how the variables SES, sex, race, family composition, visual media, reading hours, and other dimensions of cultural capital all predict standardized math scores (See Table 4). In model 1, after controlling for sex, race, and family composition, each unit of change in SES was associated with an increase of over 4 points in math scores ($B= 4.50$, $p<.001$).

In model 2, the variables Visual Media and Reading Hours were added to the model (Table 4). Net of sex, race, family composition, and media use, each unit of change in SES was associated with an increase of over 4 points in math scores ($B= 4.30$, $p<.001$). Each additional hour that was spent with visual media was associated with a decrease of less than 1 point in math scores ($B= -.17$, $p<.001$). Each additional hour that was spent reading was associated with an increase of less than 1 point in math scores ($B= .44$, $p<.001$). However, the unit of change for SES was 4.3 points compared to 4.5 points for model 1. SES was the strongest predictor for model 2, and its strength was reduced by only 4.4%. Arguably, such a small decline does not really indicate a strong possibility that media consumption mediates much of the relationship between SES and test scores.

In model 3, other aspects of cultural capital were added to the model. After controlling for sex, race, and family composition, each unit of change in SES was associated with an increase of over 3 points in math scores ($B= 3.79$, $p<.001$). Each additional hour that was spent

with visual media was associated with a decrease of less than 1 point in math scores (B= -.16, p<.001). Conversely, each additional hour that was spent reading was associated with an increase of less than 1 point (B= .22, p<.001). Involvement in the arts was not significantly associated with math scores. Compared to students who did not participate in extracurricular activities, the effect of participation was associated with an increase of over 2 points in math scores (B= 2.27, p<.001). Each unit of increase in student attitudes was associated with an increase of less than 1 point (B= .81, p<.001). Each additional hour that was spent doing homework was also associated with an increase of less than 1 point (B= .22, p<.001).

SES was the strongest predictor of math scores for model 3. After accounting for all cultural capital variables including media, the strength of this association was reduced by 11%. Also, by comparing the increase in math scores between model 1 and model 3, the strength of this association was reduced by 15%. This points to the possibility that the association between SES and test scores might be mediated in part by cultural capital factors. When comparing the standardized betas of all cultural capital variables, homework hours (b=.132), extracurricular activities (b=.111) and visual media (b= -.100) have the strongest relationships to math scores. Thus, it is possible that any mediation that may be occurring is more strongly shaped by these three variables.

Variance partitioning was conducted in model 3 (Table 6). After media and other cultural capital variables were accounted for, the adjusted R^2 was .306, suggesting that over a third of the variation in math scores can be explained by the variables in this model. Moreover, variance partitioning can give a clearer picture of how much media and other cultural capital variables play a role in shaping math scores compared to SES. When visual media and reading hours were removed, the R^2 decreased to .296. When arts participation, extracurricular involvement, student

attitudes, and homework hours were removed, the R^2 decreased to .271. This means that test scores are more strongly shaped by other cultural capital variables rather than media. SES, sex, race and family composition accounted for 79% of the total unique variance. More importantly, SES accounted for 34% of the unique variance. Sex, race, and family composition accounted for 45% of the variance. Media use accounted for only 6% of the variance. Other forms of cultural capital accounted for 15%. Therefore, SES, sex, race, and family composition all have stronger relationships to math scores compared to media or other dimensions of cultural capital.

In model 4, interactions were tested to determine if SES interacts with media to affect math scores. Interactions were tested for visual media and leisurely reading. Figure 1 provides a plotted prediction of math scores by visual media hours and SES by using the mean of SES as a metric. As seen in Figure 1, the negative association between visual media and math scores seems to be more pronounced for higher SES students. For adolescents who are 1 and 2 standard deviations below the mean of SES, the negative impact of visual media use is evident, but also not as great compared to higher SES students. This result indicates that SES can shape the relationship between media and math achievement. The interaction between SES and leisurely reading was insignificant.

5.3.2 Reading Scores

An Ordinary Least Squares Regression analysis was conducted to evaluate how the variables SES, sex, race, family composition, visual media, reading hours, and other forms of cultural capital all predict reading scores (See Table 5). In model 1, after sex, race, and family composition were controlled for, each unit of change in SES was associated with an increase of over 4 points in reading scores ($B= 4.49$, $p<.001$).

In model 2, the variables Visual Media and Reading Hours were added to the model. Each unit of change in SES was associated with an increase of over 4 points in reading scores (B= 4.23, p<.001). Each additional hour that was spent consuming visual media was associated with a decrease of less than 1 point in reading scores (B= -.15, p<.001). Each additional hour spent reading was associated with an increase of less than 1 point (B= .88, p<.001). SES was the strongest predictor of reading scores. However, the unit of change was associated with 4.23 points compared to 4.49 points for model 1. The strength of SES as a predictor was reduced by over 5%. This indicates the possibility that both visual media and leisurely reading might only slightly mediate the relationship between SES and reading scores.

In model 3, other cultural capital variables were added. Each unit of change in SES was associated with an increase of over 3 points in reading scores (B= 3.82, p<.001). Each additional hour spent consuming visual media was associated with a decrease of less than 1 point in reading scores (B= -.13, p<.001). Conversely, each additional hour spent reading was associated with an increase of less than 1 point (B= .71, p<.001). Compared to students who were not involved in the arts, the effect of being involved was associated with an increase of less than 1 point in reading scores (B= .34, p<.05). Compared to students who did not participate in extracurricular activities, the effect of participation was associated with an increase of over 2 points (B= 2.10, p<.001). Each unit of change in a student's attitude toward school was associated with an increase of less than 1 point (B= .51 p<.01). Each additional hour spent doing homework was also associated with an increase of less than 1 point (B= .15, p<.001).

Once again, SES was the strongest predictor of reading scores, though the increase was associated with an increase in over 3 points rather than 4 in models 1 and 2. After accounting for other cultural capital variables, the strength of this association was reduced by over 9%. When

accounting for all cultural capital variables, including media, the strength is reduced by over 14%. Again, this raises the possibility that cultural capital, including media use, may partly mediate the relationship between SES and test scores. When comparing the standardized betas, leisurely reading (b=.152) and extracurricular activities (b=.102) have the strongest betas. Also, of all the cultural capital variables, leisurely reading has the strongest relationship to reading scores.

Variance partitioning was conducted in model 3 (Table 7). Again, variance partitioning can provide more detail of how much media and other cultural capital variables play a role in shaping test scores in comparison to SES. After media and other cultural capital variables are accounted for, the adjusted R^2 is .283, suggesting that over a quarter of the variation in reading scores is explained by these variables. When the variables visual media and reading hours were removed, the adjusted R^2 declined to .257. When other forms of cultural capital were removed, the R^2 decreased to .260. This means that reading scores are more strongly shaped by media use compared to other cultural capital variables. This is in contrast to math scores, where other cultural capital variables play bigger roles. In model 3, SES, sex, race, and family composition accounted for 73% of the total unique variance. In contrast to math scores, SES accounted for the biggest percentage of variance at 38%. Sex, race, and family composition accounted for 35%. Visual media and reading hours accounted for 16% of the unique variance. Other aspects of cultural capital accounted for 11% (See Table 7). Also in contrast to math scores, media accounted for more of the unique variance compared to other facets of cultural capital.

In model 4, interactions were tested to determine if SES interacts with media use to affect reading scores. Interactions were analyzed for visual media and leisurely reading. Figure 2 illustrates a plotted prediction of reading scores by visual media hours and SES. Figure 2

indicates that visual media consumption has a more negative impact on higher SES students. For students who are 1 and 2 standard deviations below the mean for SES, the decline in reading scores is less substantial in relation to visual media use. In contrast, for students who are 1 and 2 standard deviations above the mean, visual media is associated with a larger decline in reading scores. Figure 3 provides a plotted prediction of reading scores by leisurely reading hours and SES. As seen in Figure 3, it seems the positive relationship between leisurely reading and reading scores is stronger for higher SES students. Students who are 1 and 2 standard deviations below the mean certainly seem to see some benefit from leisurely reading. However, the increase in reading scores is greater for higher SES students. Both of these results suggest that SES can shape the relationship between media use and reading achievement.

CHAPTER 6

DISCUSSION

To reiterate, the purpose of my study was to examine the behavioral habits of adolescents. Put another way, my research was focused not only on adolescent time use, but also the cultural habituation that adolescents develop. My reasoning is that the relationship between SES, media, and academics may be partly explained by cultural development. Therefore, Bourdieu's theory of cultural capital can be useful in explaining these relationships. In my analysis, SES was the strongest predictor of test scores. However, my research also suggests that the relationship between SES and academics may not be so straightforward when media and other cultural capital variables are accounted for. Cultural capital certainly plays a role in academic achievement, albeit one that is small.

6.1 Socioeconomic Status and Media Use

For the first research question, SES was found to be weakly related to media use. Therefore, both hypotheses (Hypothesis 1A and Hypothesis 1B) have weak support. The association between SES and visual media was weak but negative. This means that as SES increases, time spent with visual media declines, but not by much. This result is consistent with literature that finds a negative relationship between SES and visual media consumption (Chowhan and Stewart 2007; Comstock and Sharrer 1999; Dumais 2008; Fetler 1984; Krosnick et al. 2003; Smith 1990; Smith 1992; Vandewater et al. 2005; Wight et al. 2009). However, with the exception of Dumais (2008), most of the research does not address the strength of the association between visual media and SES. Dumais (2008) acknowledges that the relationship between SES and media may not always be very linear or very strong. Much of the literature is

focused on how time, rules, and content are all associated with various aspects of SES such as income, education, or occupation. The association between SES and leisurely reading was slightly positive. As SES increases, time spent reading for leisure increases, but not in a way that is very substantial. This is less consistent with other research in the sense that the literature finds leisurely reading to be more concentrated among the higher classes (Griswold 2001; Griswold et al. 2005; Hartas 2011; Notten et al. 2012; Wright 2006). A weak relationship indicates that leisurely reading may not be as strongly related to social class as previously thought. Again, the literature seems less concerned with the strength of this relationship and more focused on how reading is associated with certain aspects of SES.

6.2 Media Use and Test Scores

For the second research question, media was found to be weakly associated with test scores (Hypotheses 2A, 2B, 2C, and 2D). Visual media was negatively associated with test scores while leisurely reading was positively related. In regard to visual media, its association with test scores was not as strong as I expected. The measure of visual media used in this study included all types of television and DVD as well as video games and computer use. Existing research suggests that television can sometimes be positively related to academic achievement, particularly for lower SES students (Caldas and Bankston 1999; Comstock and Sharrer 1999; Fetler 1984; Smith 1990; Smith 1992). Along with this, more recent research finds that some video and computer games can enhance learning, especially in the context of educational settings (Adachi and Willoughby 2013; Bork 2012; Kenny and Gunter 2007). If television and video games can be beneficial for some students, then this might partly explain why visual media was weakly related to test scores. For leisurely reading, a positive relationship was evident, but again, the association was not as strong as I would have anticipated. Univariate results indicated that

adolescents spent an average of 2 hours per week reading, so for many adolescents, time that was not spent reading was directed elsewhere, perhaps toward other activities that are also beneficial for academics This may have been the case for higher SES students who are more heavily involved in various activities outside of school. Bivariate results indicated that students who spent more time reading also were involved in the arts or sports.

6.3 Media Use and Cultural Capital

For the third research question, associations between media and other forms of cultural capital were found, though these relationships were weak (Hypothesis 3A and 3B). Students who were involved in arts or extracurricular activities spent less time with visual media and more time reading, and they had higher test scores as well. Student attitudes and homework hours were also positively associated with test scores. These findings are consistent with the theory that cultural capital can be beneficial for educational outcomes. To begin with, these findings do align with literature that that argues in favor of cultural as well as extracurricular activities (Aschaffenburg and Mass 1997; Dumais 2220; Eitle and Eitle 2002; Jaeger 2011; Laraeu 2002; Roscigno and Ainsworth Darnell 1999). They are also somewhat consistent with research pertaining to student attitudes (DiMaggio and Mohr 1995) and role behavior (Farkas et al. 1990; Lamont and Laraeu 1988). More importantly, these findings suggest that for students, media can be a source of cultural capital. However, these results also indicate that cultural activities and attitudes play small roles in academic outcomes.

6.4 Socioeconomic Status, Media, and Other Cultural Capital

For the fourth research question, results indicated that media and other forms of cultural capital might partly explain SES differences in educational outcomes (Hypothesis 4A and 4B).

Multivariate results indicated that when media and other facets of cultural capital are accounted for, the strength of SES as a predictor of test scores weakens. This suggests that the relationship between SES and educational outcomes might be partially mediated by cultural capital variables, including media. However, for both math and reading scores, much of the variation was left unaccounted for, even after all of the cultural capital variables were accounted for. Clearly, SES is still playing a role that is not explained by these variables. Again, cultivated habits play a role in academic success, but only a small portion.

Though the control groups of sex, race, and family composition were not described in much detail, multivariate analysis indicated that they shaped more of the variance for math and reading scores compared to cultural capital, including media. This indicates that though student activity plays a role in academic success, test scores are much more likely to be shaped by social inequality rather than cultivated behaviors. The effect of being female was associated with a decline in math scores. Though the literature pertaining to the gender gap in math and reading scores is extensive, more recent research suggests that male and female students demonstrate similar aptitude in math achievement (Else-Quest, Mineo, and Higgins 2013; Tsui 2007). However, other recent literature finds that girls still outperform boys in reading achievement (Ma 2011; Sadker, Sadker, and Zittleman 2009) and that this disparity is linked to the gender socialization of gender stereotypes. The effect of being a minority student and coming from a family other than the biological two parent model were all associated with declines in scores. These results are consistent with existing literature. In regard to race, it has been established that minority students are more likely to come from lower class backgrounds and their academic performance is often much lower (Bankston and Caldas 1998; Caldas and Banskton 1999; Eitle and Eitle 2002; Stearns, Moller, Blau, and Potochnick 2007). Moreover, students who come from

single parent or step families are at a greater academic disadvantage compared to students who come from biological two parent families (Crosnoe 2004; Hofferth, Boisjoly, and Duncan 1998; Pong and Ju 2000; Shaff et al. 2008; Shriner et al. 2010).

The literature pertaining to cultural capital indicates that not all students reap the academic benefits in the same way. Compared to males, females are more likely to participate in cultural activities (Dumais 2002) while males are more likely to participate in sports (Eitle and Eitle 2002). Upper class white students usually possess more cultural resources compared to minority students as well as students who come from single or step parent families (Eitle and Eitle 2002; Lewis 2003). Generally, though SES is the strongest predictor of test scores, academic disparities in sex, race, and family composition cannot be overlooked.

6.5 Interactions between Socioeconomic Status and Media

For my fifth research question, support was found for my hypotheses that SES can interact with media to affect test scores. For visual media consumption, the decline in test scores was greater for higher SES students (Hypothesis 5A). This result is inconsistent with research that suggests lower SES students may be more negatively affected by visual media use (Crosnoe and Trinitapoli 2008; Dumais 2008). However, this finding is consistent with other research that finds higher SES students to be at a greater academic disadvantage (Caldas and Bankston 1999; Comstock and Sharrer 1999; Fetler 1984; Smith 1990; Smith 1992). The main argument favored by scholars is that lower SES students may find the content of visual media, especially television in particular, to be more intellectually engaging. However, another possibility is that high SES students who are more active in activities outside of school may find it more difficult to balance schoolwork with time directed towards visual media. For example, a highly active student who

spends three hours in a day practicing sports may experience conflict between having to complete homework and wanting to watch a television program. Such a conflict may translate to lower academic performance. To be clear, bivariate results did indicate that higher SES students were more involved in the arts and sports (see Table 3). Along with this, higher SES students have other alternatives for time use that lower SES students do not. For some lower SES students, visual media may be more central to their time use, given that they have fewer resources to participate in the arts or sports. Support was also found for the hypothesis that higher SES students would exhibit higher scores in relation to leisurely reading (Hypothesis 5B). However, the association between leisurely reading and test scores was seen for all students across the SES strata, despite the fact that the increase was larger for higher SES students. Moreover, the interaction between SES and reading habits was significant for reading scores, but not math assessments. Shaff et al. (2008) argue that reading assessments are more sensitive to social class differences. This may be the reason why the interaction between SES and leisurely reading was significant for reading scores but not math. Out of the four interactions tested, this result was the only one that was insignificant.

CHAPTER 7

LIMITATIONS AND FUTURE RESEARCH

The first limitation that should be addressed is that this study is cross sectional. Meaning, this research only examined students' behavioral habits at one point in time when they were sophomores. Media use by adolescents might decline from the time they are sophomores up until graduation. Along with this, some sophomores who were involved in high art or extracurricular activities may not have been two years after the data was collected. Also, student attitudes can change a little within two years' time. Additionally, students may or may not devote the same amount of time to doing homework by the time they become seniors. The ELS provides data for a follow up study from 2004. Ideally, a longitudinal follow up study would provide a clearer picture of how students' cultivated habits can change over time. Furthermore, it is unknown whether media use shapes test scores or vice versa. Although beyond the scope of this thesis, a longitudinal follow up study would provide a clearer picture of how students' cultivated habits can change over time.

Another limitation is that the ELS does not capture the full range of adolescent media use. To begin with, media has evolved since 2002. More importantly, the ELS only provides measures for media in terms of general types. For instance, the ELS asks students how much television they watch during the week and weekends. It does not ask students how much time they spend watching certain types of programs. If visual media impacts educational achievement in ways different for low and high SES students, than this may have something to do with content as well as time. More detailed questions about visual media use would include questions such as, "how much time do you spend watching hourly dramas?", or "how much time do you

spend watching sports programming?" Likewise, these types of questions should also be aimed at the content of video games. Arguably, video and computer games that emphasize strategy and role play will promote better learning for adolescents (Adachi and Willoughby 2013; Kenny and Gunter 2007). Detailed questions should also ask students about the content of what they read. According to the literature, higher SES families read material that could be deemed more intellectually challenging (Griswold et al. 2005). Therefore, it is imperative to ask students how much time they spend reading lightweight material (newspapers, magazines) as well as content that is more time consuming and challenging (classical fiction). Despite these limitations, the ELS remains useful for analyzing the media habits of adolescents.

Another limitation is the fact that it can be difficult to use secondary data to measure a broad concept such as cultural capital. Since the concept is broad, researchers can have disagreements over which variables in the ELS would constitute a measure of cultural capital. For instance, the total amount of homework hours could be treated as an educational outcome. However, the act of doing homework is also a student role behavior that could be measured within a cultural capital framework. This example illustrates how the broadness of the theory can make it difficult to use secondary data for any research project that uses cultural capital as a framework. Regardless, cultural capital was a useful framework for my study given that my purpose was to examine behavioral habits that contribute to a student's sense of culture. The ELS can be useful for analyzing a wide range of student interests and activities.

Considering one of the limitations of my research was the limited number of media related items, future studies should continue to examine not only the time students spend with media, but also the content that is consumed. Detailed analysis of time and content should be done for leisurely reading as well as visual media. Overall, future research should give more

attention to detailed variations of media consumption in relation to academic outcomes. Along with this, future studies should pay more attention to parental involvement, especially if cultural capital is used as a framework. Cultural habits do play a role in educational outcomes, but parental involvement is a process through which such development occurs. Also, future studies should be longitudinal rather than cross sectional in order to account for changes in adolescent media use or other cultural activities adolescents engage in. Lastly, future research should continue to examine how student activity varies according to sex, race, and family composition. Examinations of adolescent time use alone would be insufficient without acknowledging the fact that unequal outcomes in education are more rooted in class disparities rather than student behaviors.

CHAPTER 8

CONCLUSION

Media can affect educational outcomes, though the effects may not be as great as one might think. SES remains the strongest predictor of educational outcomes, though its relationship to academic success might be partially mediated by cultural habits such as media consumption. SES differences reveal that higher SES students can sometimes be at a greater academic disadvantage in relation to visual media use. Examinations of SES also indicate that reading habits can benefit all adolescents, not just the students in the middle to upper classes. More importantly, this study demonstrates that media is also a cultivated habit and should be conceived of as such when examining the time use of adolescents. Cultural habits and behaviors may play minimal roles in student outcomes, as test scores are more strongly shaped by SES, race, and family composition, but they do matter nonetheless.

The results of this study do have implications for policies and guidelines regarding media use. Policies should not be focused solely on visual media nor should they be predicated on the assumption that visual media is always detrimental. The American Academy of Pediatrics is wise to offer guidelines to parents as far as regulations for time and media content are concerned. These guidelines are reasonable considering that the content of some video and computer games has been shown to be cognitively beneficial. However, the AAP could also apply more pressure to media corporations to reshape their content so that students from all SES backgrounds can be intellectually challenged. Along with this, the AAP should consider ways to give low SES students access to reading material to which higher SES students are accustomed. The AAP could take things further by helping parents encourage their children become more involved in

other activities outside of school. However, this recommendation might be more in the province of schools, who are in a position to equalize access to cultural or sporting activities. Encouraging students to be more active and to simply read more often can only be helpful in steering adolescents away from visual media that may be detrimental and thus, improve their academic achievement. Along with this, teachers should continue to encourage media literacy among students by encouraging them to think critically about media's content.

While these recommendations can be helpful in reshaping student cultivation in ways that will translate to better academic success, it is important to reiterate that SES and other background characteristics all played bigger roles in shaping test scores compared to cultivated habits. Ideally, policy recommendations for media and education should be most concerned with addressing social inequality. For example, more resources could be allocated to lower class schools. Note, for instance, that the AAP does not mention social class in its article pertaining to media guidelines. To be clear, schools could do more to reshape student behaviors, including media use. However, a growing body of research in the sociology of education is aimed at understanding inequality.

Inequality in educational outcomes can be partly attributed to gender ideology (Apple 2003; Sadker et al. 2009; Thorne 1993). Inequality is also exacerbated through racial segregation (Apple 2003; Carter 2006; Jencks and Phillips 1998; Lewis 2003; Valenzuela 1999) and class disparities in family background (Laraeu 2002; Tyson, Darity, and Castellino 2005). More importantly, educational inequality is perpetuated through the practice of tracking and the disproportionate allocation of resources to schools. Tracking is the practice of dividing students into categories so they can be assigned to various classes on the basis of perceived ability. Previous research has shown that lower class students, many of them minorities, are more likely

to be grouped into classes in which the quality of education is much lower (Hallinan 1994; Oakes 2005). Recent research finds that tracking is still problematic (see Van de Werfhorst and Mijs 2010 for meta analysis) and that it occurs in schools that are highly segregated according to SES status (Guillermo 2011). Along with this, poor working class schools, where minority students are more highly concentrated, do not receive the resources needed to improve the quality of education for adolescents (Apple 2003; Guillermo 2011; Lewis 2003; Valenzuela 1999).

To reiterate, the cultivated behaviors of adolescents do play roles in academic success. However, the most important issue in educational research should be social inequality. Unless social inequality is further acknowledged, efforts to develop cultivation among students will be minimally successful at best.

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APPENDIX

Table 1: Descriptive Values for Independent and Dependent Variables

Variables	Sample N	Mean/ Percent	Standard Deviation	Min	Max
Dependent Variables					
Math Scores	12992	50.79	9.68	19.94	83.27
Reading Scores	12992	50.79	9.75	22.29	78.76
Demographics					
Sex					
Male	6428	49.40%			
Female	6568	50.60%			
Race					
White	8146	62.70%			
Hispanic	1918	14.70%			
Black	1723	13.30%			
Other Minorities	1205	9.40%			
Family Composition					
Biological Two Parent	7488	57.60%			
Single Parent	2795	21.50%			
Step Families	2405	18.60%			
Other Families	304	2.30%			
Independent Variables					
SES		.02	.71	-2.11	1.82
Visual Media		12.23	6.05	.00	30.00
Reading Hours		2.08	2.07	.00	6.00
Other Cultural Capital					
% Arts					
Not Involved	7839	60.30%			
Involved	5153	39.70%			
%Extracurricular					
Not Involved	8561	65.90%			
Involved	4431	34.10%			
Student Attitudes		3.04	.53	1.00	4.00
Homework Hours		5.77	5.78	.00	26.00

Table 2: Correlations between test scores, media use, and other forms of cultural capital

	SES	Math Scores	Reading Scores	Visual Media	Reading Hours	Student Attitudes	Homework Hours
SES		.423 ***	.406 ***	--.108 ***	.038 ***	-.001	.168 ***
Math Scores			.735 ***	-.152 ***	.085 ***	.056 ***	.222 ***
Reading Scores				-.161 ***	.189 ***	.068 ***	.213 ***
Visual Media					.048 ***	-.067 ***	--.040 ***
Reading						.166 ***	.225 ***
Student Attitudes							.237 ***

*** p<.001

Table 3: Relationships between SES, media use, student activity, and test scores

	Arts		Extra Curricular	
	Not Involved	Involved	Not Involved	Involved
SES	--.05	.13 ***	--.05	.16 ***
Math Scores	50.06	51.88 ***	49.33	53.60 ***
Reading Scores	49.79	52.31 ***	49.27	53.73 ***
Visual Media	12.68	11.54 ***	12.68	11.36 ***
Reading	1.85	2.42 ***	1.92	2.39 ***

*** p<.001

Table 4: Ordinary Least Squares Regression Results for Math Scores

	Model 1			Model 2			Model 3			Model 4		
Variables	B	SE	β	B	SE	β	B	SE	β	B	SE	β
SES	4.50	(.111)	.331 ***	4.30	(.111)	.316 ***	3.79	(.110)	.279 ***	5.44	(.252)	.400 ***
Media												
Visual				-.17	(.013)	--.109 ***	-.16	(.012)	--.100 ***	-.17	(.013)	-.111 ***
Reading				.44	(.035)	.095 ***	.22	(.036)	.049 ***	.44	(.055)	.094 ***
SES Visual										-.11	(.017)	--.110 ***
SES Reading										.09	(.055)	.020
Other Capital												
Arts							.21	(.152)	-.011			
Extracurricular							2.27	(.157)	.111 ***			
Attitudes							.81	(.143)	.045 ***			
Homework Hours							.22	(.013)	.132 ***			
Controls												
Sex	-1.11	(.147)	--.058 ***	-1.88	(.152)	--.097 ***	-2.55	(.153)	-.132 ***	-1.89	(.132)	--.098 ***
Hispanic	-4.47	(.223)	-.164 ***	-4.41	(.220)	-.162 ***	-4.48	(.217)	-.164 ***	-4.39	(.222)	-.161 ***
Black Non Hispanic	-6.52	(.231)	-.229 ***	-6.20	(.230)	-.218 ***	-6.35	(.227)	-.221 ***	-6.21	(.232)	-.218 ***
Other Minorities	--.73	(.259)	-.022 **	--.69	(.256)	-.021 **	-1.11	(.251)	-.033 ***	-.69	(.222)	-.161 ***
Single Parent	-1.08	(.193)	-.046 ***	-1.10	(.191)	-.047 ***	--.86	(.187)	-.037 ***	-1.10	(.191)	-.047 ***
Step Families	-1.87	(.199)	--.075 ***	-1.86	(.196)	.075 ***	-1.55	(.192)	--.062 ***	-1.86	(.196)	--.075 ***
Other Families	-2.40	(.495)	-.037 ***	-2.49	(.489)	-.039 ***	-2.40	(.477)	-.038 ***	-2.45	(.489)	-.038 ***
R^2		.252			.271			.306			.273	
F		549.52 ***			482.85 ***			410.99 ***			407.58 ***	
N		12992			12992			12992			12992	

*** P<.001 ** P<.01

Table 5: Ordinary Least Squares Regression Results for Reading Scores

	Model 1			Model 2			Model 3			Model 4		
Variables	B	SE	β	B	SE	β	B	SE	β	B	SE	β
SES	4.49	(.115)	.328 ***	4.23	(.112)	.309 ***	3.82	(.113)	.279 ***	5.09	(.256)	.372 ***
Media												
Visual				-.15	(.013)	-.094 ***	-.13	(.013)	-.086 ***	-.15	(.013)	--.095 ***
Reading				.88	(.036)	.188 ***	.71	(.037)	.152 ***	.87	(.036)	.186 ***
SES Visual										--.10	(.018)	--.102 ***
SES Reading										.18	(.051)	.039 ***
Other Capital												
Arts							.34	(.155)	.017 *			
Extracurricular							2.10	(.161)	.102 ***			
Attitudes							.51	(.147)	.028 **			
Homework Hours							.15	(.013)	.094 ***			
Controls												
Sex	1.33	(.151)	.068 ***	.48	(.155)	.025 **	--.07	(.156)	.004	.48	(.155)	.025 **
Hispanic	-4.26	(.229)	-.155 ***	-4.30	(.223)	-.156 ***	-4.28	(.222)	-.156 ***	-4.27	(.223)	-.155 ***
Black Non Hispanic	-5.42	(.238)	-.189 **	-5.25	(.234)	-.183 ***	-5.29	(.233)	-.184 ***	-5.24	(.233)	-.182 ***
Other Minorities	-1.82	(.267)	--.054 ***	-1.90	(.260)	--.157 ***	-2.21	(.257)	--.066 ***	-1.89	(.260)	--.056 ***
Single Parent	--.89	(.199)	-.038 ***	--.97	(.194)	-.041 ***	--.78	(.191)	-.033 ***	--.97	(.194)	-.041 ***
Step Families	-1.60	(.204)	--.064 ***	-1.66	(.199)	--.066 ***	-1.41	(.197)	--.056 ***	-1.65	(.199)	--.066 ***
Other Families	-1.74	(.510)	-.027 ***	-1.96	(.497)	--.030 ***	-1.91	(.489)	--.030 ***	-1.91	(.496)	--.030 ***
R^2		.220			.260			.283			.263	
F		459.68 ***			458.41 ***			367.60 ***			387.36 ***	
N		12992			12992			12992			12992	

*** P<.001 ** P<.01 * P<.05

Table 6: Variance Partitioning Results for Math Scores

Variables	B	β	sig	Part	sq part	Segment	%Total
SES	3.79	.279	.000	.252	.063		
						.336	34%
Visual	-.16	--.100	.000	--.094	.008		
Reading	.22	.049	.000	.047	.002		
						.058	6%
Arts	.21	.011	.149	.011	.000		
Extracurricular	2.27	.111	.000	.106	.011		
Attitudes	.81	.045	.000	.042	.001		
Homework Hours	.22	.132	.000	.123	.015		
						.149	15%
Sex	-2.55	-.132	.000	-.122	.014		
Hispanic	-4.48	-.164	.000	-.151	.022		
Black Non Hispanic	-6.35	-.221	.000	--.203	.041		
Other Minorities	-1.11	-.033	.000	-.033	.001		
Single Parent	--.86	-.037	.000	-.034	.001		
Step Families	-1.55	--.062	.000	--.059	.003		
Other Families	-2.40	-.038	.000	-.037	.001		
						.455	45%

Total Unique Variance	.188
Shared Variance	.118

Table 7: Variance Partitioning Results for Reading Scores

Variables	B	β	sig	Part	sq part	Segment	%Total
SES	3.82	.279	.000	.252	.063		
						.380	38%
Visual	-.13	.086	.000	--.081	.006		
Reading	.71	.152	.000	.145	.021		
						.165	16%
Arts	.34	.017	.026	.017	.000		
Extracurricular	2.10	.102	.000	.097	.009		
Attitudes	.51	.028	.000	.026	.000		
Homework Hours	.15	.094	.000	.088	.007		
						.108	11%
Sex	--.07	-.004	.000	-.004	.000		
Hispanic	-4.28	-.156	.000	-.143	.020		
Black Non Hispanic	-5.29	-.184	.000	-.169	.028		
Other Minorities	-2.21	--.066	.000	--.064	.004		
Single Parent	--.78	-.033	.000	-.031	.000		
Step Families	-1.41	--.056	.000	--.053	.002		
Other Families	-1.91	--.030	.000	-.029	.000		
						.345	35%

Total Unique Variance	.166
Shared Variance	.177

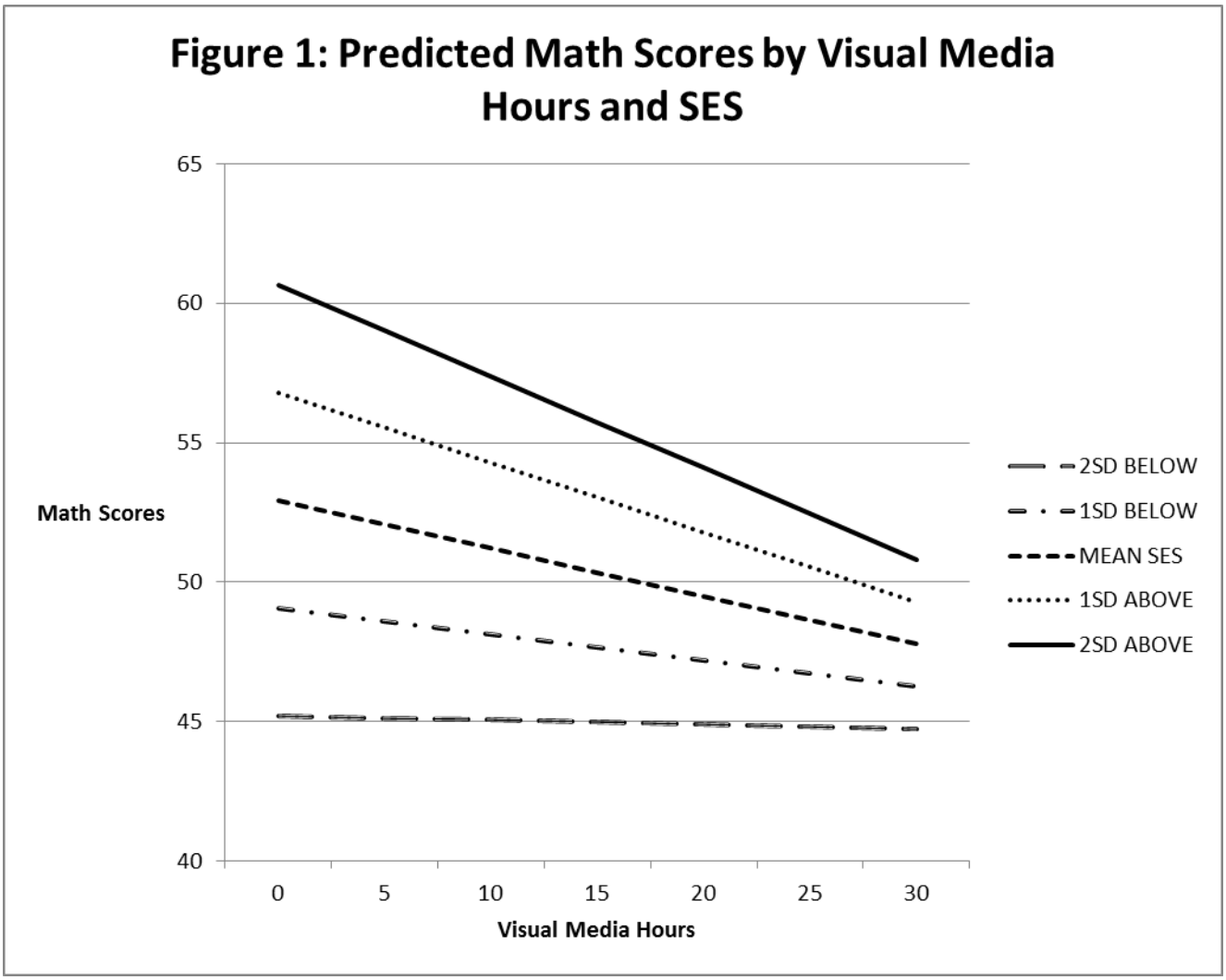
Figure 1: Predicted Math Scores by Visual Media Hours and SES
Math Scores
65
60
55
50
45
40
0
5
10
15
20
25
30
Visual Media Hours
2SD BELOW
1SD BELOW
MEAN SES
1SD ABOVE
2SD ABOVE

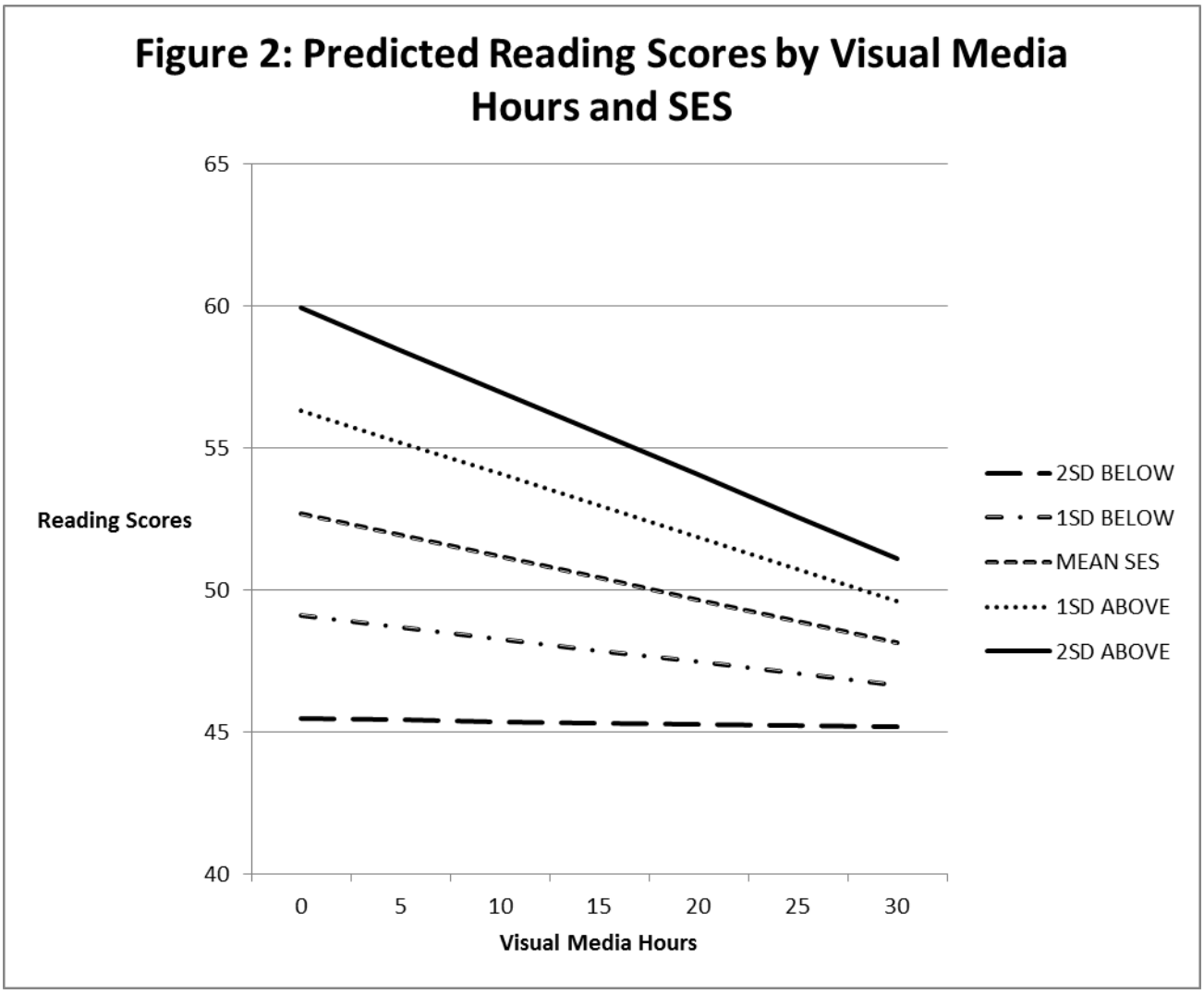
Figure 2: Predicted Reading Scores by Visual Media Hours and SES
65
60
55
50
45
40
Reading Scores
0
5
10
15
20
25
30
Visual Media Hours
2SD BELOW
1SD BELOW
MEAN SES
1SD ABOVE
2SD ABOVE

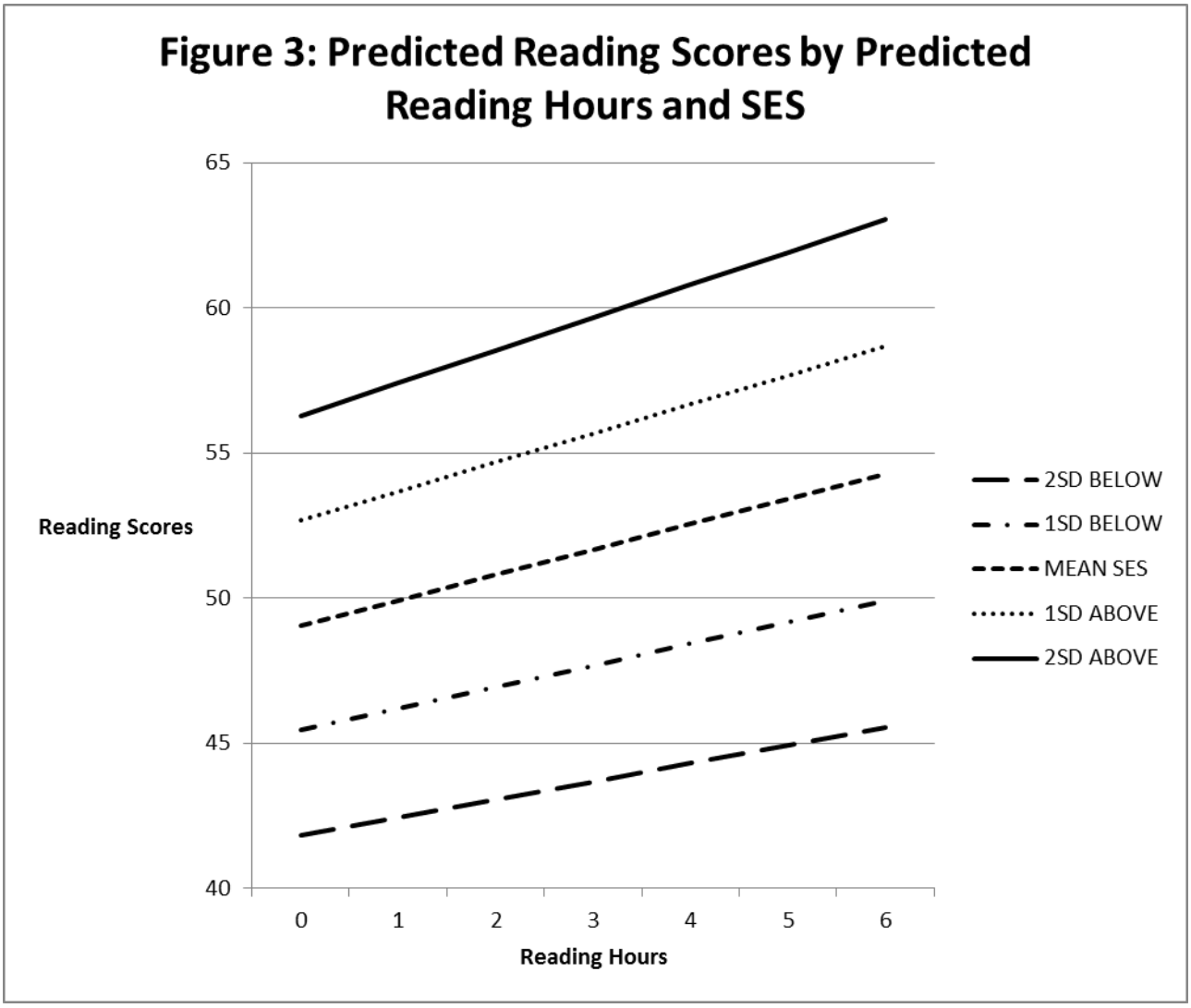
Figure 3: Predicted Reading Scores by Predicted Reading Hours and SES
65
60
55
50
45
40
Reading Scores
0
1
2
3
4
5
6
Reading Hours
2SD BELOW
1SD BELOW
MEAN SES
1SD ABOVE
2SD ABOVE