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Revisiting the Role of Cultural Capital in East Asian Educational Systems: The Case of South Korea

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Abstract

The concept of cultural capital has proved invaluable in understanding educational systems in Western countries, and recent work seeks to extend those insights to the diverse educational systems of other geographic regions. We explored cultural capital in South Korea by investigating the relationships among family socioeconomic status (SES), cultural capital, and children's academic achievement using data from the 2000 Programme for International Student Assessment. South Korea was compared with Japan, France, and the United States to understand how institutional features of South Korean education shape the role of cultural capital in academic success. Results showed that family SES had a positive effect on both parental objectified cultural capital and children's embodied cultural capital in South Korea, consistent with evidence from the other countries. Moreover, parental objectified cultural capital had a positive effect on children's academic achievement in South Korea. In contrast to other countries, however, children's embodied cultural capital had a negative effect on academic achievement in South Korea controlling for the other variables. We highlighted several institutional features of South Korean education including a standardized curriculum, extreme focus on test preparation, and extensive shadow education, which may combine to suppress the effect of children's embodied cultural capital on academic achievement.

Keywords

cultural capital; highbrow culture; academic achievement; comparative study

Pierre Bourdieu's concept of cultural capital¹—defined as “widely shared high-status cultural signals (e.g. attitudes, preferences, formal knowledge, behaviors, goods, and credentials) used for social and cultural exclusion” (Lamont and Lareau 1988:156)—has been widely used to study social reproduction in France and many other national contexts. From Bourdieu's cultural capital perspective, children from the *upper* class are more likely than those from the *lower* class to succeed in school because they are exposed to high status

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¹According to Bourdieu (1997), cultural capital can exist in various forms such as objectified, embodied, and institutionalized cultural capital. *Objectified cultural capital* refers to material objects or cultural goods such as paintings and books that are transmissible from one generation to another (Bourdieu 1997). *Embodied cultural capital* indicates the “form of long-lasting dispositions of the mind and body” (Bourdieu 1997:47), such as knowledge, skills, and dispositions to appreciate and understand cultural goods (Dumais 2002). Finally, *institutionalized cultural capital* refers to educational qualifications or credentials that are socially recognized and have market values (Bourdieu 1997).

culture from birth in their family context and thus more likely to possess cultural capital and because school systems reward students with higher cultural capital (Bourdieu 1977, 1997). In short, socialization of children from high socioeconomic status (SES) families into highbrow culture is rewarded in the school system and later in the society in terms of better educational qualifications and jobs (Silva 2005:87). The result is the reproduction of educational and social inequalities.

In recent years, the concept of cultural capital has been increasingly applied in other parts of the world including East Asia. For example, Yamamoto and Brinton (2010) examined the role of cultural capital in Japan and found that objectified cultural capital (measured by home possessions related to high status culture) had a positive effect on educational attainment, and that embodied cultural capital (measured by participation in cultural activities and reading by parents) had a positive effect on academic achievement. By showing the significant relation of cultural capital to various educational outcomes in Japan, Yamamoto and Brinton (2010) highlighted the relevance of cultural capital in East Asian educational systems and extended our understanding of how high status culture plays out as 'capital' in East Asian societies.

We build on Yamamoto and Brinton's (2010) research and extend the conceptual utility of cultural capital to another East Asian society through a study of South Korea (hereafter Korea). From a comparative perspective, Korea is a particularly appealing case because it shares features with Japan, but also provides an interesting contrast. In a general sense, the Korean school system bears many similarities with Japan because most of the modern Korean educational system was built during the Japanese occupation (1905-1945) (Chung 1998). Like Japan (Yamamoto and Brinton 2010), almost all Korean children go to elementary school for six years, progressing to three-years of compulsory middle school and then to three-years noncompulsory academic or vocational high school (i.e., 6-3-3). Also, like Japan (Yamamoto and Brinton 2010), compulsory education is generally organized along egalitarian educational policies with an emphasis on a national standardized curriculum (Kim and Lee 2003). Finally, like Japan (Mori and Baker 2010; Stevenson and Baker 1992), many Korean parents invest heavily in shadow education—referred to as “a set of educational activities outside formal schooling that are designed to improve a student's chance of successfully moving through the allocation process” (Stevenson and Baker 1992:1640)—to help their children do better on high-stakes tests (Park, Byun, and Kim 2011).

However, as will be described in detail later, Korea is in many ways more *extreme* on these key institutional features (i.e., uniformity in the school system, focus on test preparation, and extensive shadow education), compared to Japan. Unlike Japan where individual secondary schools are allowed to select their students, Korean secondary education still relies on the randomized school assignment system based on place of residence, suggesting a strong egalitarian approach to education (Kim and Lee 2003). In addition, unlike Japan (Yamamoto and Brinton 2010), teacher evaluation plays a lesser important role than high-stake tests in shaping transitions to upper levels of education in Korea (Kim and Byun 2006). Further, Korean students are more likely than Japanese students to take private tutoring for the enrichment purposes (Baker and LeTendre 2005), reflecting a more competitive educational setting of Korea compared to Japan. In fact, Koreans' obsession for education, often captured by the words 'education fever', is widely recognized by outside observers. Seth (2002:1-2) notes:

“[In Korea] everywhere there are ‘cram schools’ (*hagwon*), where elementary, middle, and high school students study late in the evening and on weekends. Every neighborhood has a store selling textbooks, supplementary readings, and guides to the entrance examination... South Korean families invest heavily in the education

of their children, and children and young adults spend a huge portion of their time studying and preparing for examinations. Education pops up in conversation often, and the success of a son, daughter, or grandchild at entering a 'good' school is a source of great pride. *Although education is important in every nation, even casual visitors become aware of the intense preoccupation of South Koreans with schooling*" (Emphasis added).

This intense academic competition in Korea has produced the largest shadow education system in the world (Baker and LeTendre 2005). A recent national survey revealed that in 2008, Korean families spent approximately 21 trillion Korean *won* (KRW) (approximately US\$19 billion), which was nearly one-tenth of the country's annual budget (Korea National Statistical Office [KNSO] 2009). In sum, the fact that Korea is broadly similar to Japan but arguably more extreme in its institutional characteristics makes Korea an important test case to explore the limits of cultural capital arguments in East Asian educational systems.

The current study extends Yamamoto and Brinton's (2010) work in several ways. First, we assessed the role of cultural capital in academic achievement in Korea using data from the 2000 Programme for International Student Assessment (PISA 2000) that measured academic achievement among students age between 15 and 16 years at the time of the assessment. Yamamoto and Brinton (2010) drew on data which were collected from Japanese men and women age 20 to 49, and measured academic achievement based on respondents' self-reported grades. As Yamamoto and Brinton clearly acknowledged, retrospective and self-reported achievement data may not be ideal to assess the role of cultural capital in academic achievement due to potential bias.

Second, while Yamamoto and Brinton (2010) focused on the relationship between cultural capital and academic achievement, we investigated the relationship between family SES and cultural capital in addition to the relationship between cultural capital and academic achievement. The key assumption underlying Bourdieu's concept of cultural capital is that unequal educational outcomes among children are attributable to the unequal distribution of cultural capital among social classes (Bourdieu 1977, 1997), suggesting the significant relationships among family SES, cultural capital, and children's academic achievement. Therefore, to more fully test cultural capital hypotheses, it is important to investigate not only the relationship between cultural capital and academic achievement, but also the relationship between family SES and cultural capital.

Finally, our comparative study of cultural capital contrasts Korea not only with Japan but with France and the United States where much prior theory and empirical research on cultural capital has centered (Bourdieu 1977, 1997; DiMaggio 1982). By more directly comparing the effects of cultural capital on academic success among East Asian and Western societies with the same data, we can better address how differing societal conditions may shape variation in the effects of cultural capital within and between national educational systems. In contrast, most work on cultural capital is country specific (but see Barone 2006; Hampden-Thompson, Guzman, and Lippman 2008 for comparative research).

It is important to note that following Bourdieu's (1977, 1997; Bourdieu and Passeron 1997) seminal work, many scholars (e.g., DiMaggio 1982; De Graaf 1986; Dumais 2002; Katsillis and Robinson 1990) have operationalized cultural capital using highbrow cultural activities (e.g., visits at museums or art gallery). The PISA 2000 data include some traditional measures of cultural capital such as possessions related to classical culture in the family home (e.g., classical literature) and activities related to classical culture (e.g., attendance at an opera, ballet, or classical symphony concert), which Yamamoto and Brinton (2010) used to measure objectified and embodied cultural capital, respectively. In this study, following Yamamoto and Brinton (2010), we focus on the two particular forms of cultural capital:

parental objectified cultural capital (measured by high culture possessions at home) and *children's embodied cultural capital* (measured by students' participation in high culture).² Unfortunately, as will be described below in detail, the PISA 2000 data do not allow us to use more comprehensive measures of cultural capital indicators including reading habits.³ As a result, generalizations from our results should be appropriately qualified.

Conceptual Framework

Studies of a wide range of societies consistently find SES differences in children's cultural capital. However, evidence regarding the effects of cultural capital on academic achievement is far mixed. For example, research in England (Sullivan 2001), the Netherlands (De Graaf 1986), and Greece (Katsillis and Robinson 1990) suggests that cultural capital has no statistically significant relation to academic achievement. In contrast, some research in the United States (DiMaggio 1982; Dumais 2002, 2006a; Roscigno and Ainsworth-Darnell 1999) and Japan (Yamamoto and Brinton 2010) suggests that cultural capital has a positive effect on academic achievement. This mixed evidence is attributed to various factors including the broad divergence in the operational definitions of cultural capital variables, the choice of dependent variables, and the type of statistical models employed (Barone 2006; Kingston 2001; Lareau and Weininger 2003).

In this study, we draw on institutional theory to better understand variation in the effects of cultural capital on educational outcomes across nations. From an institutional perspective, cultural and policy environments condition the relationships among individuals, families, and school success (Baker and Wiseman 2006). For example, children from single-parent families are less likely to suffer educational disadvantage in countries where extended families structures or social services (e.g., publicly funded after-school programs and housing subsidies) provide support for such families (Hampden-Thompson and Pong 2005; Pong, Dronkers, and Hampden-Thompson 2003). By contrast, children from single-parent families are more at risk of low academic achievement in countries where there is little public and educational assistance (Hampden-Thompson and Pong 2005).

Likewise, variation in institutional context may account for divergent effects of cultural capital on school success. For example, Lareau and Weininger (2003) suggest that cultural capital may matter in a country such as France, where the curriculum tends to reflect highbrow culture and thus students' familiarity with elite culture helps their school performance. Yamamoto and Brinton (2010:79) suggest that the importance of exams and shadow education may increase the impact of embodied cultural capital on academic performance "through its enhancement of motivation and learning skills." Yamamoto and Brinton (2010:78) also suggest that objectified cultural capital may have a positive impact on educational attainment in a country such as Japan where teachers play an important role in shaping students' transition to upper levels of education (e.g., high school or college).

We expect that certain institutional features of Korean education may shape the role of cultural capital in academic success in Korea. Generally speaking, there is reason to expect that highbrow culture may matter to school success in Korea. A growing body of literature

²Yamamoto and Brinton (2010:73) measured objectified cultural capital by using the sum of high-culture possessions (e.g., complete sets of literature or encyclopedias, art or antiques, and a piano) in the respondents' home when they were 15 years old, but they appeared to consider this form of cultural capital not as parental cultural capital but as an individual's. Strictly speaking, however, we believe that this measure may reflect parents' objectified cultural capital but not children's, because children generally cannot afford the high costs of cultural goods at their age 15. Thus, in this study, although relying on similar items that Yamamoto and Brinton (2010) used to measure objectified cultural capital, we consider this form of cultural capital as parental cultural capital, not children's. We thank an anonymous reviewer for pointing out the needs of distinguishing between parental and children's cultural capital.

³Some Korean studies used reading habits as indicators of cultural capital and found the validity of this measure in Korea (Byun 2007; Kim and Byun 2007).

in Korea documents that the upper-middle class is more likely to have cultural goods at home or participate in various highbrow cultural activities (Chang 2001; Cho 2005), and that children from higher SES families are more likely to enjoy highbrow culture (Byun and Kim 2008; Kim and Byun 2007). More importantly, in recent years, Korea has made efforts to increase the flexibility in the school curriculum and the diversification of selection criteria for college admission following the American educational model (Byun and Kim 2010a).⁴ This transformation of the school systems in Korea may allow more room in which cultural resources affect academic achievement in this country.

At the same time, there are some unique institutional features of the Korean educational system that may suppress the effect of cultural capital on academic success. Despite recent efforts to introduce a flexible curriculum, the Korean educational system remains extremely uniform in terms of content and standards (Park et al. 2011). In addition, unlike Japan (Yamamoto and Brinton 2010), high-stakes test scores still largely determine students' transition to upper levels of education in Korea (Kim and Byun 2006). Moreover, test preparation through either self-study or participation in shadow education tends to take a great deal of time, which may allow little time for participation in cultural activities for students. We discuss these features of the Korean system in comparative context.

Institutional Features Of Korean Education

Uniformity of Curriculum and Standards

One of the key institutional features of Korean compulsory education is small variation among schools in terms of school resources, school curriculum, and teacher quality, largely shaped by Korea's egalitarian approach to education (Kim and Lee 2003). In Korea, a majority of primary and middle school students spend most of the day in the same homeroom classroom with the same classmates. In addition, until very recently, most Korean primary and middle school students were taught the same curricular content at the same pace and promoted at the same time from grade to grade with their same-age peers regardless of their academic ability (Byun and Kim 2010a), which is contrasted with many other countries such as the United States where differentiated curricular contents (Schneider, Swanson, and Riegle-Crumb 1998) and grade retention (Jimerson 2001) are not uncommon. Furthermore, most Korean secondary schools enforce a strict dress code and grooming standard, resulting in a classroom setting in which students sit with the same school uniform and similar haircuts.

Korea's egalitarian approach to upper secondary education can be best characterized by the so called High School Equalization Policy⁵ (HSEP) (Kim and Lee 2003). The HSEP refers to the school assignment system in which academic high school-bound students are *randomly* assigned to schools within their place of residence regardless of academic ability. This random school assignment applies to both private and public schools, resulting in less variation in the socioeconomic background and academic ability of incoming students between these two types of schools. This contrasts sharply with the situation in other Western countries such as the United States where there are substantial differences in students' family and academic background between private and public schools (Coleman and Hoffer 1987). In addition, Korean private schools are to a large extent subsidized and controlled by the government, often called quasi-public schools. Furthermore, public school

⁴Individual Korean colleges now choose students using a variety of non-examination criteria, including written tests (e.g., essay), interviews, and high school principal's recommendations, where cultural capital is believed to exert more influence in Japan (Yamamoto and Brinton 2010).

⁵Since its first implementation in two major cities (i.e., Seoul and Busan) in 1974, the HSEP has been gradually expanded to many, but not all, cities across the country. As of 2009, more than 25 cities implemented the HSEP, accounting for approximately third-quarters of the academic high school student population in Korea (Korean Educational Development Institute [KEDI] 2010).

teachers are rotated among public schools every four to five years in a region, reflecting another dimension of Korea's egalitarian approach to education. In sum, most Korean primary and secondary school students are taught with the common curriculum content within a similar learning environment regardless of whether they attend a private or public school.

Extreme Focus on Test Preparation

Like in Japan (Stevenson and Baker 1992), Korean postsecondary institutions are highly stratified with a small number of elite four-year institutions. As high-stakes tests play a vital role in gaining access to these selective colleges (Byun and Kim 2010b), most Korean secondary schools, especially college prep high schools, focus exclusively on test preparation. In addition, because the test contents tend to be tied to the common curriculum framework, it is not uncommon for Korean college prep high schools to cover their required curriculum within the first two years then use the final year of high school to repeat the curriculum—emphasizing rote memorization—in order to prepare students for the College Scholastic Ability Test⁶ (CSAT), the Korean version of the Scholastic Aptitude Test. It is also not unusual for Korean college prep high schools to replace art and music classes with core subjects such as math and English subjects tested in the CSAT during the final year of high school. Most Korean college prep high schools offer additional supplemental lessons mainly focusing on English and math before and after regular lessons, and even late-night study sessions.

Class sizes are very large in Korea with approximately 36 students on average at the lower secondary level,⁷ which was the highest among the Organization for Economic Cooperation and Development (OECD) countries as of 2006 (the OECD average was 24) (OECD 2008). Most Korean school lessons involve a teacher-centric lecture format focused directly on material that they have to cover for their school exams or the CSAT. This instructional format involving low levels of student participation may dampen the tendency to discriminate among students based on subtle social cues (Byun 2007). The Korean system discourages family involvement in schools, reducing another potential route for cultural capital effects. The high level of uniformity and standardization in the Korean educational system tends to substantially restrict parents' direct influence on educational processes that occur inside school (Park 2008; Park et al. 2011). Korean parents also generally do not often visit schools unless they are contacted by schools (Park et al. 2011). And, unlike Japan (Yamamoto and Brinton 2010), Korean teachers seldom visit their students' homes.⁸

Shadow Education

One of the important strategies that Korean students employ to prepare for high-stake exams is to take shadow education (Byun 2009; Park et al. 2011). Shadow education has long been practiced as individual tutoring in Korea, but it has evolved in recent years to include cram schools (*hagwon*), correspondence courses (*hagseupji*), and on-line tutoring, all of which are more structured and commercialized than individual tutoring. Regardless of its type, shadow education institutions focus on helping students memorize large amounts of material for particular tests in a very short period of time, rather than fostering critical thinking. In 2008,

⁶The CSAT is a classic paper-pencil test administered once a year at the national level in Korea. Since its first introduction as a new form of the national level college entrance exam in 1994, its scores have been used as one of the most important criteria to select eligible applicants by universities in Korea.

⁷A large classroom setting is also the case for high schools with approximately 31 students on average as of 2007 (KEDI 2010).

⁸In Korea, when teachers visit their students' home, it is not unusual for parents to attempt to give a monetary or nonmonetary gift to teachers of their child to show appreciation or to ask for the better care of their child. Thus Korean teachers try to avoid visiting their students' home in part in order to rule out the possibility of being involved in this illegal practice by parents.

almost 8 of 10 Korean students participated in some form of shadow education (KNSO 2009).

Although it is unclear whether shadow education is effective in improving academic achievement (Byun 2009), many Korean parents make sacrifices to provide their children shadow education (Park et al. 2011) as they are keenly aware of the role that academic credentials play in their children's future opportunities (e.g., access to selective colleges and ultimately prestigious jobs at top-ranked corporations and government ministries). In 2008, on average, Korean families spend approximately 230,000 KRW (approximately US\$210) per month on shadow education (KNSO 2009).

In sum, distinctive features of Korean education including uniformity of curriculum and standards, extreme focus on test preparation, and extensive shadow education lead us to expect a somewhat different picture not only from Western societies, but also from other East Asian societies such as Japan with regards to the role of cultural capital in academic success.

Hypotheses

Effects of Family SES on Cultural Capital

As noted, prior literature across a wide range of societies suggest the positive effects on family SES on cultural capital. Recent research in Korea also documents subtle but highly significant differences in cultural tastes and consumption across social classes (Chang 2001; Cho 2005) as well as the SES gap in high status cultural activities among young Korean students (Byun and Kim 2008; Kim and Byun 2007). Accordingly, we expect a positive relationship between family SES and both forms of cultural capital (i.e., parental objectified cultural capital and children's embodied cultural capital) in Korea, consistent with other countries (Hypothesis 1).

However, high-SES Korean parents arguably focus more on shadow education (Byun 2009; Park et al. 2011). Indeed, there is a significant gap in shadow education activities between children from high- and low-income families in Korea. In 2008, 9 out of 10 Korean students whose monthly average family income was more than 7,000,000 KRW received at least one or more forms of shadow education, whereas only 4 out of 10 students whose monthly average family income was less than 1,000,000 KRW did so (KNSO 2009). Thus, we expect that the extent to which parental objectified cultural capital mediates the relationship between family SES and children's embodied cultural capital may be relatively small in Korea, compared to the other countries (Hypothesis 2).

Effects of Cultural Capital on Academic Achievement

The intense focus on test preparation, minimal parent-teacher and student-teacher interactions, and large class sizes in the Korean educational system may leave less room for cultural capital to affect academic achievement, compared to other countries. Nonetheless, we expect that parental objectified cultural capital may be still important to shape academic performance in Korea (Hypothesis 3), not through teachers' recognition, but potentially through its influence on children's "motivation and learning skills" by which children's embodied cultural capital is believed to affect academic achievement in Japan (Yamamoto and Brinton 2010:79). Indeed, some prior Korean research documents the positive effect of parental objectified cultural capital on students' cognitive test scores (Chang 2008; Kim and Byun 2007).

On the other hand, because many of their waking hours are devoted to studies, Korean students may not be able to enjoy highbrow culture as frequently as their counterpart

students in other countries. One study suggests that Korean adolescents spend almost half of waking hours doing schoolwork, whereas their counterpart Japanese and US adolescents spend a third and a quarter of waking hours, respectively (Larson and Verma 1999). In addition, a recent news article in Korea reported that more than 70 percent of the first-year middle school students “had never participated in cultural activities such as visits to museums or classical symphony concerts during the past year”; 30 percent of the surveyed students indicated “they do not have time (for cultural participation) due to shadow education”, while another 30 percent answered “they simply do not have time” (Shin 2006). In fact, given Korea's intensely competitive system, it is quite possible that children's cultural activities may have negative consequences for school performance in Korea (Hypothesis 4). Indeed, a growing body of Korean literature supports this proposition by showing the negative effects of students' cultural participation on their academic performance (Byun 2007; Byun and Kim 2008; Chang 2008; Kim and Byun 2007).

Data And Methods

Sample

To test these hypotheses, we used data from PISA 2000, an internationally standardized assessment developed by the OECD (OECD and UNESCO-UIS 2003). PISA 2000 measured academic performance among 15-year old students attending school with a focus on reading. PISA employed a two-stage stratified sampling design—where a representative sample of schools was first drawn, and then students were randomly selected within that sampled schools—for most participating countries (OECD and UNESCO-UIS 2003). Twenty-eight OECD countries and 4 non-OECD countries participated in 2000.⁹ Our main focus is Korea ($N = 4,982$), but as noted earlier we also included Japan ($N = 5,256$), France ($N = 3,926$), and the United States ($N = 3,846$) as relevant comparisons. For multivariate analyses, we included all individuals assessed in each country.

PISA 2000 is particularly useful for our study, providing several advantages over other international achievement studies (e.g., the Trends in International Mathematics and Science Study [TIMSS]). First, PISA 2000 included several questions about home possessions related to classical culture and students' cultural activities which have been widely used as measures of cultural capital in empirical research (Bourdieu 1977; DiMaggio 1982; Dumais 2002; Sullivan 2001; Yamamoto and Brinton 2010). Second, while TIMSS mainly assesses math and science achievement, PISA 2000 primarily focused on the assessment of reading literacy, where cultural capital measures may have a larger effect (DiMaggio 1982; Dumais 2006a; Hampden-Thompson et al. 2008). Finally, whereas TIMSS offers information only about parental education and home educational resources, PISA provides a wide range of information about family socioeconomic background including parental education, parental occupation, and family wealth, yielding better measures of family SES.

Measures

Family SES—Family SES was measured by using the following four indicators: (a) parental education, (b) parental occupation, (c) family wealth, and (d) home educational resources. Parental education was measured by the highest level of either parent on the International Standard Classification of Education (ISCED) (1= ISECD Level 1 [primary education]; 6= ISCED Level 5A, 5B or 6 [tertiary education]). Parental occupation was measured by the highest score of either parent on the International Socio-Economic Index of

⁹Hong Kong participated in PISA 2000 as one of non-OECD countries but we excluded Hong Kong from the main analysis of this study as it tends to have many Western characteristics as a result of its British colonial experience and thus may not be representative of East Asia.

Occupational Status (ISEI) that measures the socioeconomic status and prestige of occupations (Ganzeboom, DeGraff, and Treiman 1992). Values on this index range from 0 to 90 with high values representing high SES. The index (sum) of family wealth was derived from students' reports on availability (i.e., 0 = no, 1 = yes) of a dishwasher, a room of their own, educational software, and a link to the Internet; and number (e.g., 0 = none, 3 = three or more) of cellular phones, television sets, computers, motor cars, and bathrooms at home. Values on this index range 0 from 19 with high values indicating wealthier families. The index (sum) of home educational resources were derived from students' reports on availability (i.e., 0 = no, 1 = yes) of a dictionary, a quiet place to study, a desk for study, and textbooks; and number of calculators at home (e.g., 0 = none, 3 = three or more). Values on this index range from 0 to 7 with high values indicating more educational resources at home. We conducted factor analysis using a varimax rotated solution for each country to determine whether the family SES indicators clustered together within each country. We found that the SES indicators held together in a similar way across countries with a few exceptions (e.g., home educational resources for France) (see Appendix A). To facilitate easy comparisons across the countries, the index of family SES was scaled to have a mean of zero and a standard deviation of one for students *within* each country, not across the countries, in order to avoid capturing between-country differences in this measure (Park 2008). It should be noted that because the PISA 2000 data contain no and very limited information about parental education and occupation respectively for Japan, only family wealth and home educational resources were used for creating the index of family SES for this country. Accordingly, results for Japan should be interpreted with caution.

Cultural capital—*Parental objectified cultural capital* was derived from students' reports on the availability (i.e., 0 = no, 1 = yes) of classical literature, books of poetry, and works of art at home. Values on this index (sum) range from 0 to 3. *Children's embodied cultural capital* was derived from students' reports on how often they had participated in the following activities during the preceding year: (a) visited a museum or art gallery, (b) attended an opera, ballet or classical symphony concert, and (c) watched live theatre. Students responded to each statement on a four-point scale with the following categories: 0 = never or hardly ever, 1 = once or twice a year, 2 = three or four times a year, and 3 = more than four times a year. Like the family SES, we conducted factor analysis using a varimax rotated solution for each country to determine whether the embodied cultural capital items clustered together within each country. We found that they held together in a similar way across countries (see Appendix A). Again, measures were scaled to have a mean of zero and a standard deviation of one for students within each country for easy comparisons across the countries.

Academic achievement—Academic achievement was measured by students' performance in reading literacy. In PISA, reading literacy is defined as “the ability to understand, use, and reflect on written texts in order to achieve one's goals, to develop one's knowledge and potential, and to participate effectively in society” (OECD and UNESCO-UIS 2003:19). Using Item Response Theory (IRT), PISA provided five plausible values that were generated for each student based on their responses to the test items given and the performance of students to other items with similar characteristics. Plausible values are more appropriate to estimate population parameters such as mean and variance than a fixed value as they are randomly drawn from the posterior distribution for a student's ability (OECD 2002). These plausible values were scaled to have an average score of 500 and a standard deviation of 100 across all students of the OECD countries participating in PISA. Our analyses presented in this study were based on the first of the five plausible values.¹⁰

Control variables—In order to control for confounding variables, we included several control variables which may shape academic achievement. Those control variables included (a) family structure (1 = non-intact family), (b) number of siblings, (c) gender (1 = female), (d) homework or study hours per week on the language subject area (no time [reference category] vs. less than 1 hour vs. between 1 and 3 hours vs. 3 hours and more), (e) student interest in reading (composite score, see Appendix A for more information), and (f) school location (1 = city with a population of more than 100,000). It is important to note that we additionally controlled for shadow education, given the high prevalence of shadow education in Korea (KNSO 2009) and Japan (Mori and Baker 2010). Shadow education was measured by the extent of participation in private tutoring outside school to improve academic achievement during the last three years (never [reference category] vs. sometimes vs. regularly).

Analytic Strategies

First, to assess the relationship between family SES and two forms of cultural capital (Hypothesis 1), we conducted ordinary least squares (OLS) regression analyses predicting each form of cultural capital by family SES with the control variables. For OLS analysis predicting children's embodied cultural capital, we additionally included parental cultural capital as an independent variable along with the family SES and other control variables. The aim was to examine the extent to which parental objectified cultural capital mediated the relationship between family SES and children's embodied cultural capital (Hypothesis 2). Then, we replicated all these OLS regression analyses for Japan, France, and the United States. Finally, using a *t* test, we tested whether the relationships among family SES, parental objectified cultural capital, and children's embodied cultural capital observed in Korea differed from those in the other countries.

Second, to investigate a potential contrasting relationship between two forms of cultural capital and academic performance in Korea (Hypotheses 3 and 4), we conducted OLS regression analyses predicting academic performance. To more systematically evaluate the relationship between cultural capital and academic performance, we estimated the two OLS regression models: The first model included the family SES variable and the control variables only and the second model additionally added the cultural capital variables.¹¹ The aim was to assess the extent to which the cultural capital variables explained additional variance in academic achievement among Korean students beyond family SES and the control variables. Then, using a *t* test, we tested the differences in the estimated regression coefficients between parental objectified cultural capital and children's embodied cultural capital to examine differences in the magnitude of the impact on academic achievement between these two forms of cultural capital. Next, we replicated these OLS regression analyses for Japan, France, and the United States. Finally, using a *t* test, we examined whether the observed relationships between cultural capital and academic achievement in Korea significantly differed from those in the other countries.¹²

¹⁰It is recommended to use five plausible values of reading literacy simultaneously to generate correct standard errors (OECD 2002). Yet prior analyses indicate little variability between the results generated from the combined use of the five plausible values and those generated from using plausible value one (Martin and Kelly 1999). Some prior studies using international achievement data relied on one plausible value, rather than using all five plausible values (e.g., Hampden-Thompson and Pong 2005). For the current study, although reporting the results using the first of the five plausible values, we conducted analyses with each of the other four plausible values with multiple imputations, and found few differences in the results across the five plausible values.

¹¹We also performed OLS regression analyses by entering the parental objectified cultural capital and children's embodied cultural capital variables separately, and found similar results reported in the current study. Note that the correlation between the variables of parental objectified cultural capital and children's embodied cultural capital for Korea was .248, which dispel concerns about a multicollinearity problem between these two variables.

Missing data—For the missing data for the control variables (see Table 1), we employed a multiple imputation technique with the *ice* option in the Stata software package (Royston 2004). For each country, we generated five data sets with five different sets of imputed values, and averaged the coefficients and standard errors from analyses across the five data sets using the *mim* option in Stata (Royston 2004).

Correction for design effects—Following PISA's recommendation (OECD 2002), the final student weights (*w_fstwt*) supplied by PISA were used to correct for design effects after being normalized for each country, which allow results to be generalized to the target population in each country. Given the nested nature of the PISA data (i.e., students within sampled schools), we used the *cluster* option in Stata, which adjusts for the inflated standard errors resulting from the violation of the independent errors assumption (Rogers 1993).

Results

Descriptive Findings

We present weighted descriptive statistics for the variables used in the analysis for each country in Table 1. Because it is difficult to compare the overall levels of those standardized indices (i.e., family SES, children's embodied cultural capital, and interest in reading) across the countries, we also present descriptive statistics for the individual items before standardizing for each country in Appendix A. In brief, Korean students showed the highest level of academic performance on reading. In contrast, Korean students reported lower levels of parental education and occupation, compared to students in France and the United States (Appendix A). Korean students also reported lower levels of family wealth and home educational resources, compared to their counterparts in Japan, France, and the United States (Appendix A), reflecting Korea's lower level of economic development.

When it comes to cultural capital, Korean students had the highest level of parental objectified cultural capital but the lowest level of embodied cultural capital along with Japanese students (Appendix A). To better understand this pattern, we utilized the PISA index of students' cultural activities which were derived from the same items that we used for this study but scaled for all students across all PISA 2000 participating countries (i.e., mean = 0, standard deviation = 1) (OECD and UNESCO-UIS 2003).¹³ Figure 1 graphs relative levels of participation in highbrow culture among young students in four countries, where zero indicates the OECD average. Korea and Japan fall well below the OECD average. Our supplement analyses showed that Korea and Japan had the lowest level of students' cultural activities of all OECD countries. France showed lower levels of students' participation than one might have expected. The United States had levels of students' participation in highbrow culture that were higher than the OECD average.

There were some observed differences in the other background characteristics between Korea and the other countries. For example, Korean and Japanese students alike were less likely to come from non-intact families, compared to their counterparts in France and the United States. In addition, Korea showed the higher proportion of students spending three or

¹²Yamamoto and Brinton (2010) found that objectified cultural capital mattered more for females than males in Japan. Other studies suggest the varying role of cultural capital in academic achievement by gender as well as social class (DiMaggio 1982; Dumais 2002, 2006a, 2006b; Roscigno and Ainsworth-Darnell 1999). We examined potential interaction effects for gender and SES and found some significant SES differences in the effect of children's embodied cultural capital favoring those from high SES families but no significant gender differences in Korea. Similarly, we found significant interaction effects between SES and children's embodied cultural capital favoring those from high SES families but no gender differences in the United States. For Japan and France, there were no significant interaction effects for gender and SES. We present these results in the online supplementary Table D.

¹³We conducted supplement analyses using the PISA index of cultural activities provided by PISA and found similar results for Korea and the other countries.

more hours doing homework or study than Japan but similar to France and the United States.
¹⁴ Finally, Korea showed the most frequent use of private tutoring.

Effects of Family SES on Cultural Capital

The first set of analyses examined the impact of family SES on two forms of cultural capital. Recall that we expected a positive effect of family SES on two forms of cultural capital in Korea, consistent with the other countries (Hypothesis 1), but a relatively small effect of parental objectified cultural capital on children's embodied cultural capital in Korea, compared to the other countries (Hypothesis 2). Because our interests are in the relationships among family SES, parental objectified cultural capital, and children's embodied cultural capital, we present only the estimated coefficients of these variables without showing results of the other control variables (for the full results, see the online supplementary Tables A and B available on the journal website).

Parental objectified cultural capital—Table 2 presents the OLS coefficient of the family SES variable predicting parental objectified cultural capital for each country. Results showed that family SES had a positive effect on parental objectified cultural capital in Korea, consistent with the other countries. However, comparing Korea's results with those of the other countries revealed that the effect of family SES on parental objectified cultural capital was much smaller in Korea than in the United States. One standard deviation increase in the index of family SES was associated with an increase in parental objectified cultural capital by .348 in Korea, while the corresponding increase was .449 in the United States. On the other hand, results showed that the effect of family SES on parental objectified cultural capital was larger in Korea than in Japan, but this result should be interpreted with caution due to the limited measure of family SES used for Japan (i.e., relying only on two SES indicators, not on all four).

Children's embodied cultural capital—Table 3 presents the OLS coefficients of the family SES and parental cultural capital variables predicting children's embodied cultural capital for each country. Model 1 included the family SES variable and the control variables, and Model 2 additionally added the parental cultural capital variable. Model 1 showed that family SES had a positive impact on children's embodied cultural capital, consistent with the other countries. Model 2 showed that parental objectified cultural capital had a positive effect on children's embodied cultural capital in Korea. This was also true for the other countries. Yet there was some variation in the magnitude of the impact of parental objectified cultural capital on children's embodied cultural capital. As expected, the impact of parental objectified cultural capital on children's embodied cultural capital was smallest in Korea but largest in the United States. Specifically, one unit increase in parental objectified cultural capital was associated with an increase in the index of children's embodied cultural capital by .106 in Korea, whereas the corresponding increase was .238 in the United States. Further, the extent to which the parental objectified cultural capital variable additionally contributed to explaining variation in children's embodied cultural capital beyond family SES and the other controls was less than 1 percent for Korea but about 6 percent for the United States (see R-squared changes in Table 3). The effect of family SES on children's embodied cultural capital was larger in Korea than in Japan but again this result should be interpreted with caution due to the limited measure of family SES for Japan.

¹⁴This result is inconsistent with previous findings (Larson and Verma 1999). The amount of time spent studying among Korean students may be much greater if total time spent in a school or a shadow education institution is taken into account.

Effects of Cultural Capital on Academic Achievement

The next set of analyses examined the effects of two forms of cultural capital on academic achievement. Recall that we expected a positive impact of parental objectified cultural capital on children's academic achievement (Hypothesis 3) but a negative impact of children's embodied cultural capital in Korea (Hypothesis 4). As our interests lie in the relationships among family SES, cultural capital, and academic achievement, we present only the estimated coefficients of these variables with omitting those of the other control variables in Table 4 (for the full results, see the online supplementary Table C).

For Korea, Model 1 (including only the family SES variable and the control variables) showed the significant SES gap in academic achievement. Model 2, where the cultural capital variables were additionally added, showed that parental objectified cultural capital had a positive effect on children's academic achievement, whereas children's embodied cultural capital had a negative effect. Specifically, one unit increase in parental objectified cultural capital was associated with about a four-point increase in Korean children's academic achievement, whereas one unit increase in the index of children's embodied cultural capital was associated with about a five-point decrease in their academic achievement. In contrast, both forms of cultural capital had positive effects on academic achievement for all other countries with the United States being exceptional. The effect of children's embodied cultural capital on academic achievement was positive but insignificant in the United States.

Comparing the results of Model 2 for Korea with those of the other countries revealed that the effect of parental objectified cultural capital on children's academic achievement was much smaller in Korea than in France. In fact, the effect of parental objectified cultural capital was largest in France: One unit increase in parental objectified cultural capital was associated with about a seven-point increase in children's academic achievement. Noteworthy is that the effect of family SES on children's academic achievement was much smaller in Korea than in France and the United States. One standard deviation increase in the index of family SES was associated with about a 14-point increase in children's academic achievement in Korea, whereas the corresponding increases were about 22 and 31 points in France and in the United States, respectively. Although the impact of family SES on children's embodied cultural capital was larger in Korea than in Japan, once again, this result should be taken with caution due to the limitation of the family SES measure for Japan.

Discussion

In the examination of the relationships among family SES, cultural capital, and children's academic achievement in Korea using the PISA 2000 data, we posited a positive effect of family SES on both measures of objectified and embodied cultural capital (Hypothesis 1) but a relatively small effect of parental objectified cultural capital on children's embodied cultural capital, compared to the other countries (Hypothesis 2). We also suggested a positive effect of parental objectified cultural capital on academic achievement (Hypothesis 3) but a negative effect of children's embodied cultural capital on their academic achievement (Hypothesis 4). Our empirical analyses of the PISA 2000 data support these hypotheses and expectations.

We found that family SES had a positive impact on both parental objectified cultural capital and children's embodied cultural capital in Korea, consistent with evidence in the other countries. Yet the impact of family SES on parental objectified cultural capital was much smaller in Korea than in the United States. Furthermore, Korea showed the weakest tie between parental objectified cultural capital and children's embodied cultural capital. With

respect to the effects of cultural capital on academic achievement, we found the positive effect of parental objectified cultural capital but the negative effect of children's embodied cultural capital in Korea.

We highlighted several unique institutional features of Korean education (e.g., standardized curriculum, intense competition for entering elite colleges, extensive shadow education, etc.) that might undercut the mechanisms through which children's embodied cultural capital is believed to shape school success. Cultural capital arguments presume that the curriculum (or testing standards) rewards students for participation in highbrow culture. In Korea, however, tests tend to assess student learning directly related to the common curriculum, rather than testing students' highbrow cultural knowledge. Further, given the Korea's intensive test preparation inside and outside school and highly competitive educational setting, students' excessive participation in high culture may leave less time for test preparation and consequently have negative returns for academic performance. Our findings of the hindering aspects of embodied cultural capital in shaping academic achievement confirm past findings in Korea (Byun 2007; Byun and Kim 2008; Chang 2008; Kim and Byun 2007).

However, the finding of the negative effect of children's embodied cultural capital on academic achievement should not be considered as evidence that the concept of cultural capital is irrelevant in Korean society. For one thing, our finding of the positive role of parental objectified cultural capital in mediating the relationship between family SES and children's academic achievement partially supports the relevance of cultural capital in Korea. For another, institutional cultural capital (e.g., educational qualifications or academic credentials) that the present study did not examine play a considerably important role not only in the labor market, but also in the marriage market in Korean society. In Korea, there has been a stronger tendency for people to marry within their own educational group than in any other country (Smits, Ultee, and Lammers 1998). This tendency has been increasingly observed over the last five decades especially among those with a college degree (Park and Smits 2005). In other words, a college degree vastly increases the likelihood that one will marry a spouse from a high-status background in Korea. Therefore, the role of cultural capital in social reproduction should not be underestimated in Korean society as a whole.

For Japan, we found that both parental objectified cultural capital and children's embodied cultural capital were equally important for predicting academic achievement. The latter is consistent with Yamamoto and Brinton's (2010) finding. However, our finding of the significant role of objectified cultural capital in Japan is inconsistent with Yamamoto and Brinton's, who observed significant effects only for attainment. But, as noted, our measure of family SES for Japan was limited due to lack of information for parental education and occupation in the PISA 2000 data. So, our estimate of the influence of parental objectified cultural capital on academic achievement may be overstated for Japan. Further research is needed to clarify the effect of objectified cultural capital on academic achievement in the Japanese educational system as well as the role of cultural capital in other East Asian educational systems.

For France, where prior empirical evidence is limited and mixed, our results showed that both objectified and embodied cultural capital had positive effects on academic achievement. Furthermore, our analyses showed that the effects were far larger in France than in Korea, Japan, and even the United States. These findings highlight the importance of cultural capital in France. In a study of class reproduction in France, Robinson and Garnier (1985) found little tendency for higher SES fathers to convert their economic capital to educational capital for their children in France. They concluded that "the role of educational capital in reproducing class is much overstated by reproduction theory" in France (Robinson

and Garnier 1985:277). However, evidence from the PISA dataset reaffirms the salience of cultural capital for social reproduction in France.

Finally, for the United States where prior research findings on the role of cultural capital in academic success is mixed, our results showed that parental objectified cultural capital had a positive effect on children's academic achievement, while children's embodied cultural capital had a positive but insignificant effect. The latter is inconsistent with some prior research in the United States (e.g., DiMaggio 1982; Dumais 2006a; Roscigno and Ainsworth-Darnell 1999) but consistent with some other research in this country (e.g., Dumais 2006b). Further, our analyses showed that the extent to which the cultural capital variables additionally contributed to explaining variance beyond family SES and the control variables was relatively small in the United States (5 percent), even compared to East Asian countries such as Korea (8 percent) and Japan (9 percent). Noteworthy is that the direct effect of family SES on academic achievement was much larger in the United States than in any other countries including France. This finding may indicate that family SES may have a more direct effect on children's academic achievement rather than via its influence on cultural capital in the United States. Indeed, some previous research in the United States suggests that students' cultural activities have a very modest effect on academic achievement (Bodvski and Farkas 2008; Dumais 2006a). Further, several researchers have suggested that certain features of the American education system such as decentralization and non-standardization tend to increase the direct influence of family SES on children's educational outcomes (Buchmann, Condron, and Roscigno 2010; Lareau 1989; Park 2008). Taken together, our findings suggest that the effects of family SES and cultural capital on children's school success may be contingent on institutional characteristics of a country's educational system, supporting institutional theory.

The present study has several limitations that could be addressed in future research. First, we are limited to conventional measures of cultural capital available in the PISA dataset. We lack subtle measures of cultural attitudes, behaviors, and linguistic styles that would support a more in-depth evaluation of cultural capital arguments. More fundamentally, conventional measures of cultural capital largely reflect a Western elite culture (Buchmann 2002; Hampden-Thompson et al. 2008). Although we have offered some rationales and evidence of the validity of high-culture possessions and cultural participation as measures of cultural capital in Korea, it is still questionable whether these measures of cultural capital best represent high status culture in this society.

The question arises, then, whether there is an elite culture in Korea, which is widely recognized by most Koreans but exclusively shared by the members of the upper class, and benefits children's academic success. One possible marker of cultural capital in contemporary Korean society may be acquisition of English (O 2000). The desire to learn English is pervasive in Korean upper-middle class society (Lett 1991; Park and Abelmann 2004). Many upper-middle class parents send their children to an English kindergarten or a cram school or even English-speaking countries to learn English at an early age. Children from lower SES families, on the other hand, are often placed at a disadvantage because they cannot afford the costs of private tutoring or foreign travel. Further, English is reflected in the school curriculum from the third grade in elementary school and plays an increasingly important role in college entrance and the labor market. However, the PISA 2000 dataset does not include measures needed to explore this possibility. Future research is needed to examine the role of English as a form of cultural capital, and to identify and measure additional markers of cultural capital in the Korean context.¹⁵

¹⁵We thank an anonymous reviewer for pointing out the needs of seeking alternative measures of cultural capital in Korean society.

Finally, we highlighted several aspects of the Korean education system that may account for the negative effect of children's embodied cultural capital on academic achievement. These features include a high degree of standardization, intense focus on test preparation inside and outside school, and extensive shadow education. At the same time, we also noted some other features of the educational system which may allow more room for children's embodied cultural capital (and parental objectified cultural capital as well as family SES) to affect children's academic achievement. These features include a high degree of decentralization and a reliance on non-cognitive criteria such as extracurricular activities and recommendation letters. However, future research should more explicitly test how these features shape the role of particular kinds of cultural capital in academic achievement. If the aforementioned institutional features indeed combine to either suppress or increase the influence of children's embodied cultural capital (and parental objectified cultural capital as well as family SES) on academic achievement, the implications go beyond the Korean educational system because the use of standardized tests (Kamens and Mcneely 2010) and shadow education (Baker and LeTendre 2005) has become an increasingly worldwide phenomenon. For example, it may be possible that in a country like the United States where educational reform is increasingly emphasizing student assessments and testing (Grodsky, Warren, and Felts 2008), and there is a growing demand for shadow education to enhance students' standardized test scores (Buchmann et al. 2010; Byun and Park 2011), the influence of children's embodied cultural capital on academic achievement may decrease over time. In contrast, in a country like Korea in which school reforms are geared toward a differentiated school curriculum and looser linkage between curriculum and assessments (Byun and Kim 2010a), the influence of children's embodied cultural capital (and parental cultural capital as well as family SES) may increase over time. Yet it remains to be seen how institutional transformation changes the mediating role that cultural capital plays in linking family SES to children's academic success, and in turn changes the processes and contours of social stratification over time within a country.

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Appendix A

Descriptive Statistics for Original Items for Standardized Indices

Short description	France				United States			
	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items
<i>Family SES</i>								
Parental education	4.83	(0.02)	0.76	0.45	5.22	(0.02)	0.69	0.52
Parental occupation	49.17	(0.27)	0.77		51.51	(0.31)	0.73	
Family wealth	10.07	(0.05)	0.68		12.75	(0.06)	0.77	
Home educational resources	6.53	(0.01)	0.38		6.00	(0.03)	0.68	
<i>Children's Embodied cultural capital^a</i>				0.52				0.59

Short description	France				United States			
	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items
Visited a museum or art gallery	0.57	(0.01)	0.77		0.86	(0.01)	0.73	
Attended an opera, ballet or classical symphony concert	0.14	(0.01)	0.66		0.34	(0.01)	0.78	
Watched live theatre	0.44	(0.01)	0.74		0.74	(0.02)	0.79	
<i>Student interest in reading^b</i>				0.69				0.71
Reading is one of my favorite hobbies	2.11	(0.02)	0.86		2.13	(0.02)	0.86	
I like talking about books with other people.	2.16	(0.02)	0.82		2.16	(0.02)	0.83	
I feel happy if I receive a book as a present.	2.21	(0.02)	0.82		2.23	(0.02)	0.84	
I enjoy going to a bookstore or a library.	2.40	(0.02)	0.80		2.48	(0.02)	0.84	

^aStudents responded to each statement on a four-point scale with the following categories: 0 = never or hardly ever, 1 = once or twice a year, 2 = three or four times a year, 3 = more than four times a year

^bStudents responded to each statement on a four-point scale with the following categories: 0 = never or hardly ever, 1 = once or twice a year, 2 = three or four times a year, 3 = more than four times a year

Descriptive Statistics for Original Items for Standardized Indices

Short description	Korea				Japan ^a			
	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items
<i>Family SES</i>								
Parental education	4.54	(0.02)	0.69	0.46	—	—	—	0.60
Parental occupation	42.67	(0.22)	0.73		—	—	—	
Family wealth	9.47	(0.04)	0.71		10.01	(0.04)	0.78	
Home educational resources	5.79	(0.02)	0.56		6.34	(0.01)	0.78	
<i>Children's Embodied cultural capital^b</i>				0.62				0.52
Visited a museum or art gallery	0.39	(0.01)	0.73		0.33	(0.01)	0.71	
Attended an opera, ballet or classical symphony concert	0.13	(0.01)	0.81		0.13	(0.01)	0.72	
Watched live theatre	0.15	(0.01)	0.82		0.16	(0.01)	0.73	
<i>Student interest in reading^c</i>				0.65				0.63
Reading is one of my favorite hobbies	2.18	(0.01)	0.85		2.17	(0.02)	0.85	
I like talking about books with other people.	2.11	(0.01)	0.84		2.15	(0.01)	0.80	
I feel happy if I receive a book as a present.	2.42	(0.01)	0.78		2.28	(0.01)	0.82	

Descriptive Statistics for Original Items for Standardized Indices

Short description	Korea				Japan ^a			
	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items	<i>M</i>	(<i>SE</i>)	Factor loadings	% of variance explained by items
I enjoy going to a bookstore or a library.	2.44	(0.01)	0.77		2.84	(0.01)	0.70	

^a For Japan, only family wealth and home educational resources were used for creating the index of family SES because of no and very limited information available for parental education and occupation, respectively, in the PISA 2000 data.

^b Students responded to each statement on a four-point scale with the following categories: 0 = never or hardly ever, 1 = once or twice a year, 2 = three or four times a year, 3 = more than four times a year

^c Students responded to each statement on a four-point scale with the following categories: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree

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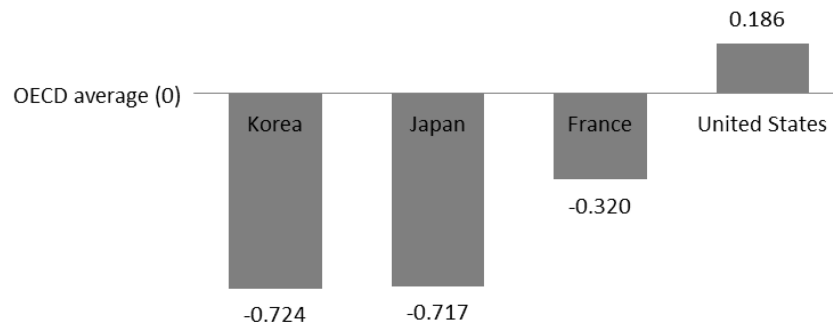
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Biographies

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Data Source: PISA 2000.

Figure 1. PISA Index of Students' Highbrow Cultural Activities for Korea, Japan, France, and the United States

Table 1
Weighted Descriptive Statistics for Variables Included in Analyses

Variable	Korea			Japan ^b			France			United States		
	<i>M</i>	<i>(SE)</i>	% imputed	<i>M</i>	<i>(SE)</i>	% imputed	<i>M</i>	<i>(SE)</i>	% imputed	<i>M</i>	<i>(SE)</i>	% imputed
<i>Dependent variable</i>												
Reading literacy	525.03	(1.03)	0.0	522.03	(1.26)	0.0	519.70	(1.37)	0.0	503.71	(1.98)	0.0
<i>Independent Variables</i>												
Family SES ^a	1.00	(0.00)	10.3	1.00	(0.00)	8.0	1.00	(0.00)	10.7	1.00	(0.00)	23.3
Cultural capital												
Parental objectified cultural capital	2.04	(0.02)	1.1	1.48	(0.02)	5.4	1.53	(0.02)	0.8	1.63	(0.02)	6.4
Children's embodied cultural capital ^a	1.00	(0.00)	2.2	1.00	(0.00)	3.5	1.00	(0.00)	2.9	1.00	(0.00)	7.5
<i>Control variables</i>												
Non-intact family	0.12	(0.00)	0.5	0.13	(0.00)	5.1	0.24	(0.01)	0.00	0.47	(0.01)	6.4
Number of siblings	1.30	(0.01)	1.0	1.48	(0.01)	5.2	1.77	(0.02)	0.00	2.42	(0.03)	5.46
Female	0.44	(0.01)	0.1	0.51	(0.01)	0.0	0.52	(0.01)	0.00	0.52	(0.01)	0.03
Student interest in reading ^a	1.00	(0.00)	0.6	1.00	(0.00)	4.1	1.00	(0.00)	3.1	1.00	(0.00)	10.2
Weekly hours of study			0.4			3.0			0.00			8.97
No time	0.20	(0.01)		0.42	(0.01)		0.06	(0.00)		0.15	(0.01)	
Less than one hour	0.34	(0.01)		0.31	(0.01)		0.32	(0.01)		0.36	(0.01)	
Between one and three hours	0.31	(0.01)		0.21	(0.01)		0.49	(0.01)		0.36	(0.01)	
Three hours or more	0.15	(0.01)		0.07	(0.00)		0.13	(0.01)		0.14	(0.01)	
Shadow education			1.4			4.3			1.0			6.8
Never	0.68	(0.01)		0.83	(0.01)		0.80	(0.01)		0.84	(0.01)	
Sometimes	0.21	(0.01)		0.06	(0.00)		0.12	(0.01)		0.12	(0.01)	
Regularly	0.11	(0.00)		0.12	(0.00)		0.08	(0.00)		0.03	(0.00)	
City	0.82	(0.01)	0.0	0.59	(0.01)	4.5	0.20	(0.01)	10.8	0.32	(0.01)	21.6
Unweighted <i>N</i>		4,982			5,256			3,926			3,846	

SES = socioeconomic status

^aThese variables are standardized (i.e., mean = 0, standard errors = 1) within each country. For more information about these variables, see Appendix A.

^bFor Japan, only family wealth and home educational resources were used for creating the index of family SES because of no and very limited information available for parental education and occupation, respectively, in the PISA 2000 data.

Table 2
Varying Relationships between Family Socioeconomic Status and Parental Objectified Cultural Capital across Four Countries

Variable	Korea		Japan		France		United States	
	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)
Family SES	0.348 ***	(0.015)	0.241 *** [†]	(0.016)	0.346 ***	(0.017)	0.449 *** [†]	(0.022)
R-squared ^a	0.220		0.139		0.238		0.256	

Note. Model includes controls for family structure, number of siblings, gender, student interest in reading, hours of study, shadow education, and school location.
SES = socioeconomic status.

^aR-squared based on one complete and imputed data set.

[†]denotes significant differences from Korea under p<05

*** p<001, **p<01, *p<05 (two-tailed tests)

Table 3
Varying Relationships between Family Socioeconomic Status and Children's Embodied Cultural Capital across Four Countries

Variable	Korea				Japan				France				United States			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)
Family SES	0.244 ***	(0.019)	0.207 ***	(0.020)	0.080 ***	(0.017)	0.041 * [†]	(0.017)	0.245 ***	(0.020)	0.172 ***	(0.017)	0.262 ***	(0.018)	0.155 ***	(0.018)
Parental objectified cultural capital			0.106 ***	(0.013)			0.166 *** [†]	(0.015)			0.210 *** [†]	(0.016)			0.238 *** [†]	(0.017)
R-squared ^d	0.137		0.145		0.090		0.119		0.163		0.202		0.189		0.244	
R-squared change ^d	—		0.009 ***		—		0.029 ***		—		0.039 ***		—		0.055 ***	

Note. Models includes controls for family structure, number of siblings, gender, student interest in reading, hours of study, shadow education, and school location.

SES = socioeconomic status.

^dR-squared and R-squared change based on one complete and imputed data set.

[†]denotes significant differences from Korea under p<05 (based on Model 2)

*** p<001,

** p<01,

* p<05 (two-tailed tests)

Table 4
Varying Relationships between Cultural Capital and Academic Achievement across Four Countries

Variable	Korea			Japan			France			United States					
	Model 1		Model 2	Model 1		Model 2	Model 1		Model 2	Model 1		Model 2			
	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)	Coef.	(Robust Std. Err.)			
Family SES	14.330 ***	(1.557)	14.089 ***	(1.595)	9.431 ***	(1.800)	7.516 *** [†]	(1.799)	27.631 ***	(1.921)	22.107 *** [†]	(1.886)	34.914 ***	(2.119)	
Cultural capital															
Parental objectified cultural capital			4.459 *** [†]	(1.225)			6.664 ***	(1.273)			10.733 *** [†]	(1.462)		5.783 **	(1.602)
Children's embodied cultural capital			-5.376 ***	(1.105)			3.876 *** [†]	(1.368)			7.371 *** [†]	(1.502)		3.267 [†]	(1.856)
R-squared ^d	0.205		0.214		0.150		0.160		0.226		0.250		0.297		0.302
R-squared change ^d	—		0.008 ***		—		0.009 ***		—		0.024 ***		—		0.005 ***

Note. Models includes controls for family structure, number of siblings, gender, student interest in reading, hours of study, shadow education, and school location.

SES = socioeconomic status.

^aR-squared and R-squared change based on one complete and imputed data set.

[†]denotes significant differences from Korea under p<05 (based on Model 2)

p<001,

**

p<01,

* p<05 (two-tailed tests)