CULTURAL CAPITAL, ECONOMIC CAPITAL, AND ACADEMIC ACHIEVEMENT: SOME EVIDENCE FROM TAIWAN

By

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ABSTRACT

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Pierre Bourdieu's (1984) concept of cultural capital is popular among educational researchers in Europe and the U.S., but it has rarely been applied in Confucian societies such as Taiwan. Bourdieu frames education as an arena of cultural conflict in which social inequalities are reproduced through the unequal distribution of "capitals" both within and without the educational system. In contrast, educational researchers who study Asian societies often assume cultural homogeneity, social harmony, and limited inequality. Inspired by Bourdieu's theory, this study analyzed secondary data from first and second panel of junior high school students (n=12,527) in the Taiwan Educational Panel Survey (TEPS). The results show that parental cultural capital is strongly associated with parental economic capital (income) and has a significant effect on students' cultural capital, which in turn influences their academic achievement. While Confucian influences facilitate certain educational aspirations and practices across social classes, different levels of economic capital and cultural capital possessed by the parents and their children differentiate educational outcomes. By applying a Western-developed concept in a non-Western context, this study contributes to the theoretical and methodological development of research on cultural capital and demonstrates how social, cultural, and institutional contexts outside the West condition the process of educational stratification.

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CHAPTER ONE - INTRODUCTION

Statement of the Problem

Pierre Bourdieu's (1984) concept of cultural capital is popular among educational researchers in Europe and the U.S. (De Graaf *et al.*, 2000; DiMaggio, 1982; Dumais, 2002; Lareau, 2003; Sullivan, 2001). Bourdieu (1973) defines cultural capital as "instruments for the appropriation of symbolic wealth socially designated as worthy of being sought and possessed"; this wealth appears to be the "undivided property of the whole society"—accessible to all on the basis of individual ability and effort—but social origins shape its appropriation (p. 73). In his theory, Bourdieu (1984) frames education as an arena of cultural conflict in which social inequalities are reproduced through the various forms of "capital" both within and without the system. Nevertheless, due to researchers' diverse ways of interpretation, past research examining the link between cultural capital and school outcomes has yielded inconclusive results (DiMaggio, 1982; Kalmijn & Kraaykamp, 1996; Katsillis & Robinson, 1990; Robinson & Garnier, 1985; Werfhorst *et al.*, 2003).

In contrast to Bourdieu's critical view of the educational system, researchers who study Asian societies often assume cultural homogeneity, social harmony, and limited inequality. These researchers argue that common Confucian values and beliefs about education—within the context of nationally standardized school curriculums and funding—result in comparable academic achievement among middle class and working class children (Bond, 1996; Broaded, 1997; Chao, 1996; Smith, 1981; Stevenson & Lee, 1996; Wu, 1996; Yu, 1996).

Some scholars believe that in today's globalizing world, the social and cultural differences between traditional Confucian Asian society and Western capitalist society are becoming less clear. The ongoing processes of globalization may facilitate convergence between these two

societies. But many unique historical and institutional factors continue to shape the ways each society changes and evolves in the path of modernization. Under the backdrop of widening income gap between the rich and the poor on a global scale, this research aims to examine how Western-developed concepts such as cultural capital can be applied to explain different educational outcomes in the non-Western context.

While Taiwan does have less educational and income inequality than the U.S. (Buchmann & Hannum, 2001; Chu, 1989, Thornton & Lin, 1994),¹ family background still plays a crucial role in shaping educational trajectories (Chang, 2006; Chen, 2005; Kelly, 2004; Tsai & Shavit, 2007; Wu, 2009). Students from low-income families (monthly income less than US\$1,515) are more likely to attend less academically vigorous high schools. For instance, students from low-income families are *less* likely than others to go to academic-oriented (public) senior high school (24.78% vs. the national average of 32.57%) and *more* likely to study in less prestigious (public) vocational high school (26.48% vs. the average 20.93%) (Ministry of Education, R.O.C., 2009a)..

In addition, low-income students in Taiwan are less likely to attend college than are highincome students. In 2002, 15.4% of the students from mid-to-low income families (total annual household incomes less than US\$32, 941) attended public colleges/universities (7.15% below the national average of 22.5%) while 84.6% of them attended private colleges/universities (7.15% above the national average of 77.45%). A recent national survey indicates that in 2008, the college attendance rate for students from low-income families was 8%, a starkly lower figure than the national average of 22.5% (Ministry of Education, R.O.C., 2009a).

¹ According to government statistics, in 2000, the Gini coefficient of income inequality was .343 for Taiwan (Directorate-General of Budget, Accounting, and Statistics, Executive Yuan, R.O.C., 2012), compared with .447 for the U.S (U.S. Census Bureau, 2001). Note that 0 indicates absolute equality and 1 indicates maximum inequality in which all income is concentrated in one person.

Furthermore, among those who attend university, students from high-income families are more likely than those from low-income families to attend public universities, which in Taiwan are of higher prestige than private universities. At the college and university level, in 2002, 15.4% of the students from mid-to-low income families (total annual household incomes less than US\$32,941) attended public colleges/universities (7.15% below the national average of 22.5%) while 84.6% of them attended private colleges/universities (7.15% above the national average of 77.45%). Despite having experienced rapid economic growth and expansion of education during the past few decades, evidence of social inequalities in education persists.

The paradoxical mix of century-old Confucian influences and persisting educational inequality makes Taiwan an interesting case for studying. Confucianism is a system of thought that originated in ancient China during the Han dynasty, 206BCE-220CE. According to scholars such as Oldstone-Moore (2002) and Shun and Wong (2004), Confucian thought centers on the notions of social harmony, social hierarchy, family ethics, and individual responsibility. Based on the Confucian tradition, an ideal person should be devoted to *li* (ritual and protocol), motivated by virtue, and dedicated to serving the government and education (Oldstone-Moore, 2002, p. 7). In this research, I posit that Confucianism (as a widely held, *conscious* system of thought) is analytically distributed in society). While Confucianism produces similarities in certain educational aspirations and practices across social classes, the different levels of economic capital and cultural capital possessed by the students and their parents differentiate their educational strategies and outcomes.² In other words, I accept that the process of social

² Not much research in the past has touched upon the issue of *how equally* Confucian beliefs are shared across Taiwan. Ma and Smith's (1992) study shows that the extent of support for Confucian ethical beliefs varied across occupation, residence, and place of origin but does not

reproduction of inequality is mitigated by cultural resources associated with Confucianism that are widely held among both middle class and working class parents. Nevertheless, Confucianism reduces, but does not eliminate, the inequalities in the distribution of cultural capital and thus it does not eradicate class-based differences in school performance.

Purpose of the Study

The purpose of this dissertation research is to test, in the Taiwanese context, the applicability of Bourdieu's view that cultural capital is unequally distributed and leads to unequal educational outcomes. The study analyzes secondary data of junior high school students (ninth graders, n=12,527) from the Taiwan Educational Panel Survey (TEPS). Different structural equation models are tested to understand the causal relationships among parental economic capital, parental cultural capital, students' cultural capital, and students' academic achievement. Through testing different models, the study also aims to identity key components of cultural capital that are unique to the Taiwanese context.

Research Questions and Hypotheses

To empirically assess the applicability of Bourdieu's concept of cultural capital to the Taiwanese context, this study investigates (1) the extent to which parental economic capital (income) is associated with parental cultural capital; (2) the extent to which parental economic capital and cultural capital is associated with students' cultural capital; and (3) the extent to which the student's cultural capital is converted to (positive) school outcomes. Therefore, the research questions for this proposed study are:

1. To what extent is parental economic capital associated with parental cultural capital?

substantially differ between socioeconomic groups. Therefore, I posit that Confucian beliefs, especially their emphasis on education, are still widely held by both middle and working class parents and students in Taiwan. However, such a proposition is not tested in this research.

- 2. To what extent is parental cultural capital associated with students' cultural capital?
- 3. To what extent is parental economic capital associated with students' cultural capital?
- 4. To what extent is parental economic capital associated with students' school outcomes?
- 5. To what extent is parental cultural capital associated with students' school outcomes?
- 6. To what extent is the student's cultural capital associated with his or her school outcomes?

If Bourdieu's argument is valid, we should find evidence of the unequal distribution of parental cultural capital based on income levels. We should also find that parents transmit economic capital and cultural capital to their children, and that this is associated with positive school outcomes of those students who receive these advantages. Specific research hypotheses to be tested are:

- 1. Parents' cultural capital is positively associated with parents' economic capital.
- 2. Parents' cultural capital is positively associated with students' cultural capital.
- 3. Parents' economic capital is positively associated with students' cultural capital.
- 4. Parents' economic capital is positively associated with students' academic achievement.
- 5. Parents' cultural capital is positively associated with students' academic achievement.
- 6. Students' cultural capital is positively associated with students' academic achievement.

CHAPTER TWO – LITERATURE REVIEW

Family plays a crucial role in shaping the educational trajectories of children through the transmission of economic, social, and cultural resources. Previous research has established the independent effect of each of these different types of resources on children's educational outcomes in different social, cultural, and national contexts. To understand the mechanism behind persistent educational stratification, Bourdieu's social reproduction theory provides us with a framework for explaining how economic, cultural, and social resources combine to influence educational outcomes. In this review of literature, I will first discuss research regarding the influence of family socioeconomic status (SES) on educational outcomes in the West and in Taiwan. I then discuss Bourdieu's theory of capital and studies that apply his concept. Finally, I will discuss key issues concerning the application of cultural capital in educational research.

Family SES and Educational Outcomes in the West and in Taiwan

A copious body of educational research in the West has tracked the impact of family income and wealth on educational outcomes of children. Students from higher socioeconomic backgrounds generally achieve better school outcomes than their less well-off counterparts. Studies conducted in the U.S, Canada, and U.K. repeatedly showed that socioeconomic factors have a substantial and persistent influence on school attainment and achievement (Acemoglu & Pischke, 2001, Blanden & Gregg, 2004; Coleman *et al.*, 1966; Duncan & Murnane, 2011; Ferguson *et al.*, 2007). For example, in the U.S., Acemoglu & Pischke (2001) found that a 10% increase in family income is associated with a 1.4% increase in the probability of attending a four-year college. Under the backdrop of widening income gap, a body of recently published studies indicates a growing achievement gap as well as disparities in educational experiences between the poor students and their more affluent peers in the U.S. (Philips, 2011; Reardon, 2011).

In the U.K., studies show that children from low-income households leave school for work earlier and generally have fewer formal qualifications than their more affluent peers. Blanden and Gregg's (2004) study shows that "of [all] children born in 1970, some 26% failed to achieve any O levels³ or equivalent by the age of 30, whilst 23% went on to get a degree. Among children from the poorest 20% of households at age 16, only 11% went on to get a degree ad degree and 41% failed to achieve any O levels". In a similar vein, Ermisch and Francesconi's (1997) study demonstrates that financial constraints affect parents' investment in their children's human capital. In addition, scarcity of resources (both of money and of time) in larger families has adverse effects on the educational attainment of children.

The substantial effect of family income in shaping educational trajectories of children has inspired research applying western-developed theories in non-western settings. The extent to which family income matters—and the ways in which it matters—are not uniform cross-nationally (Buchmann & Hannum, 2001). Despite the common view that Taiwan has less income inequality than some countries in the West such the U.S. and U.K., (Buchmann & Hannum, 2001; Chu, 1989, Thornton & Lin, 1994), evidence suggests that here too, students from higher income families have an advantage over those from lower income backgrounds. For instance, Hung and Marjoribanks (2005) concluded from their study of eleven-year-old Taiwanese children (n=261), that family social status has an unmediated effect on children's academic achievement, independent of parents' aspirations and parental involvement. Studying

³ O-levels (Ordinary Level) are subject and exam-based qualifications in the U.K. They were the main examinations for 16 years olds in England, Wales and Northern Ireland from 1951 until 1988.

the impact of family and school factors on students' academic achievement at the junior high school level, Lin (2007) showed that family SES exerts profound effects on school achievement when compared with various resources provided by the school (which explained only 4% of the variance). Using a national survey data set, Han and colleagues (2003) found a positive relationship between family income and college attendance rates. Furthermore, Wu's (2009) study of 1,510 undergraduates from five national universities in Taiwan show that compared to non-elite universities, a larger proportion of students at the elite universities come from middle and high SES backgrounds. In addition, Wu also found that the college experience for students from different socioeconomic backgrounds are quite different and that students from less welloff families often engaged in paid employment during their university studies. Wu thus concluded that "the inequality in higher education participation among students from different social classes is no longer an inequity in participation rates but an inequity in educational quality" (p. 404).

Wu's findings are supported by Tsai and Shavit's (2007) study of access to higher education in Taiwan. Tsai and Shavit argue that the educational expansion in Taiwan was accompanied by stratification in the type (quality) of education the students receive. While students from less-advantaged family backgrounds now have greater assess to higher education, differences exist in the types of universities and colleges they go to (public vs. private) and types of educational experiences they have (high vs. low teaching quality). Luca's (2001) Effectively Maintained Inequality (EMI) theory states that for levels of education that are universal, competition takes place in the type (quality) of education attained. This theory has found support in the evidence from Taiwan.

To understand the educational *field* in Taiwan, we need to consider both the cultural and institutional factors that shape "the rule of the game" and at the same time, structure individual practices (Bourdieu & Wacquant, 1992, p. 18). Like most nations, both the content and structure of Taiwan's educational system is intricately linked with its economic, societal, and political development (Yang, 1994). In 1968, the compulsory phase of schooling was extended to nine years (six years of elementary and three years of junior high school). After completing the elementary school, usually at age 12, students are assigned to local junior high schools based on their registered places of residence. In 2008, 99.8% of elementary school graduates continued to junior high school (Ministry of Education, ROC, 2009).

The transition from junior high school to senior high school can be regarded as the first critical point of academic transition because students will take competitive examinations and be assigned to tracked schools according to their scores. At the post-secondary level, schools are hierarchically ranked and differentiated by their functions (academic oriented vs. non-academic oriented). Three main types of schooling are available to junior high school graduates: academic senior high schools, vocational high schools, and five-year junior colleges (consist of three years of high school curricula and two years of specialized technical training).

Students who are admitted to the academic senior high school will undergo rigorous preparation for the joint college entrance examination in order to gain admission to colleges and universities. On the other hand, students who are admitted to either vocational high schools or five-year junior college will engage in specialized technical and vocational training and later join the job market. In 2008, 96.06% of the girls and 94.6% of the boys advanced to the post-secondary level (Ministry of Education, ROC, 2009). The same year, the ratio of senior high

school students to vocational high school students was 46:54 (Ministry of Education, ROC, 2009).

Due to the restriction imposed by the government on the proportion of academic-tracked students at the secondary level, the competition for these spots is fierce among junior high school students. However, the association between family background and children's school achievement is likely to be weaker than that in the United States due to Taiwan's more equal provision of basic education and the "incentive structure" within which teachers strive to help those who can perform well at the standardized tests regardless of their family backgrounds (Broaded, 1997, p. 39, also see Stevenson & Lee, 1996, p. 141).

Despite this, some formal and informal features of the educational systems can contribute to unequal educational outcomes. First, the prevalence of after-school tutoring services, ranging from pre-kindergarten English conversation lessons to subject-specific exam preparation, have long been a predominant part of the student experience. Because these tutoring services often require substantial financial investment, students from families with higher socioeconomic backgrounds can expect to enjoy more of such resources and support.

Second, due to the fact that students often attend the elementary and junior high school within the school districts closest their residence, patterns of residential segregation based on income, social class, or ethnicity can be seen in the composition of the student body of the school (Broaded, 1997). Furthermore, junior high schools are informally ranked based on the percentage of their graduates admitted to top academic senior high schools. Therefore, the practices of 'skipping' from one's neighborhood school to better school or enrolling students in the private junior high school to be better prepared for the joint college entrance exam are

common. This introduces a "potentially inegalitarian thrust" in the system of equal educational provision (Broaded, 1997, p. 38). As Jao & McKeever state:

Academic secondary schools now serve as the most crucial gate through which Taiwanese students must pass if they hope to gain access to higher education and greater opportunities in the labor market, and our analysis shows how crucial it is to distinguish between these two tracks within secondary schools....In Taiwan, it seems that social elites take clear advantage of not merely levels of education, but distinctions within specific levels of the educational system, to ensure that their children obtain specific educational credentials even as the educational systems expands and average achievement rises. (Jao & McKeever, 2006, p.149)

Bourdieu's Theory of Capital

While it is an important factor, family income captures only one aspect of how parental status influences school performance. To explain educational outcomes and social reproduction, Bourdieu (1986) specifies four generic types of capital: economic capital, cultural capital, social capital, and symbolic capital.⁴ According to Bourdieu, people maximize their standings by accumulating and using these four different types of capital. The value of capital is specific to the *field* within which individuals (or more precisely, individuals of the same class conditions) compete and maneuver.

Field is the termed used by Bourdieu to capture "the rule of the game" and to symbolize struggle and competition within different social spheres (Bourdieu & Wacquant, 1992, p. 18). It can be conceived as "structured spaces that are organized around specific types of capital or combinations of capital" (Swartz, 1997, p.117). The patterns and dynamics of competitions and maneuvering in a given field result in social structures. These structures do not determine action

⁴ Bourdieu (1984, 1990) also use "academic capital" to indicate the value that the society accords to academic qualifications . In this paper I will consider academic capital as a subset of cultural capital that refers to one's educational level.

but exert influences through shaping the disposition of the individual, while at the same time the structure can be shaped by individuals who have gained and accumulated a lot of capital.

In Bourdieu's theory, social actors pursue strategies, but not as conscious maximizers of available means to achieve desirable goals (Swartz, 1997). To Bourdieu (1992), human minds are "socially bounded" and "socially structured" in a way that their courses of action are more tacit, practical, and dispositional than simply rule-following or rational calculation (p. 126).

In the education *field*, for instance, parents of different social-economic statuses all strive to do what they think is best for their children despite their differences in income, education levels, interpersonal networks, and individual disposition. These differences in specific types of capitals and combinations of capitals results in different educational practices and strategies, which can either reinforce or challenge the existing order.

Bourdieu (1986) sees *economic capital* as the "root" of all other forms of capital and treats all others types of capital as "transformed, disguised forms of economic capital" (p. 91). Other forms of capitals can be converted into economic capital (such as converting educational credentials into a high paying professional position) and economic capital can be used in pursuit of other forms of capital (e.g. family income can be used to pay for school tuition and tutoring services). Bourdieu (1986) sees *social capital* as actual or potential resources associated with "a durable network of more or less institutionalized relationship of mutual acquaintance and recognition" (p. 88). To Bourdieu, social capital can be accumulated and deployed, collectively or individually, for instrumental (tangible) or symbolic gains. Finally, Bourdieu (1990) uses *symbolic capital* to denote the power of the dominant class to impose meanings through legitimation. To Bourdieu, symbolic capital is a disguised form of power that demands recognition, deference, and obedience with legitimacy (Swartz, 1997). It involves culturally

valued attributes (such as one's accent) that can be material but are not recognized as such (McDonough & Nunez, 2007, p. 148).

There is nothing novel about suggesting that money and networks matter. Bourdieu's (1986) concept of cultural capital is arguably the most innovative component of his theorization of the forms of capital. The concept of cultural capital is central to Bourdieu's analyses of how the educational system contributes to the process of social stratification. Examining the popular post-World War II public policies of expanding educational opportunities in order to alleviate societal inequalities, Bourdieu found that despite the tremendous improvement made in all Western democracies, glaring inequalities in wealth, income, and status persisted (Bourdieu & Passeron, 1977). Bourdieu (1977a; Bourdieu & Passeron, 1977) argues that rather than functioning as an equalizer, the educational system actually reproduces the unequal distribution of inherited cultural differences and therefore, is the institution most culpable for the transmission of social inequalities in modern societies (Swartz, 1997).

Bourdieu (1973) defines cultural capital as "instruments for the appropriation of symbolic wealth socially designated as worthy of being sought and possessed"; this wealth appears to be the "undivided property of the whole society"—accessible to all on the basis of individual ability and effort—but social origins shape its appropriation (p. 73). According to Bourdieu, cultural capital exists in embodied, objectified (physical), and institutionalized states. The embodied state has roots in the family environment of early childhood, in which values, skills, and manners are cultivated that contribute to the forming of "long lasting dispositions of the mind and body" (Bourdieu, 1986, p. 84). The embodied form of cultural capital is related to Bourdieu's concept

of *habitus*.⁵ Bourdieu uses the term *habitus* to denote a "socialized subjectivity" that internalizes the externality (incorporation) and externalizes the internality (objectification), and in the process, contributes to the reproduction of individuals and classes (Bourdieu, 1977b, p. 72; Bourdieu & Wacquant, 1992, p. 126). The objectified state of cultural capital refers to physical possessions of cultural goods such as pictures, books, dictionaries, instruments, machines, etc. Finally, the institutionalized state refers to academic credentials and professional certifications.

Bourdieu's framing of cultural capital varies at different stages of his intellectual life and performs different roles in his various writings.⁶ Lamont and Lareau (1988) note that "in Bourdieu's global theoretical framework, cultural capital is alternatively an informal academic standard, a class attribute, a basis for social selection, and a resource for power which is salient as an indicator/basis of class position" (p. 156). Overall, his theory of social reproduction is a powerful tool for unmasking hidden relationships of culture, power, and stratification (McDonough & Nunez, 2007). As Lareau and Weininger (2004) note: "The concept of 'capital' has enabled researchers to view culture as a resource – one that provides access to scarce rewards, is subject to monopolization, and under certain conditions, may be transmitted from one generation to the next" (p. 105). More importantly, focusing on the accumulation and conversion of capital, Bourdieu's theory can deepen our understanding of the processes and mechanisms associated with class reproduction both within and outside the educational system.

⁵ Wacquant (1989) notes that "the roots of habitus are found in Aristotle's notion of hexis, elaborated in his doctrine of virtue, meaning an acquired yet entrenched state of moral character that orients our feelings and desires in a situation, and thence our actions" (p. 315). Bourdieu himself also used 'cultural unconscious,' 'habit-forming force,' 'set of basic, deeply interiorized master-patterns,' 'mental habit,' 'mental and corporeal schemata of perceptions, appreciations, and action,' and 'generative principle of regulated improvisations' to designate the concept of *habitus* (Swartz, 1997, p. 101).

⁶ See Lamont & Lareau, 1988, p. 155, for different definitions of cultural capital by Bourdieu and Passeron.

Bourdieu's cultural explanation of unequal educational attainment and achievement differs from the blaming-the-victim version of culture-of-poverty arguments. Rather than emphasizing the cultural origins of persistent deviant behavior, Bourdieu's theory focus on the mechanism and processes within which individuals adapt to limited (or structured) opportunities. It shows how structural disadvantages can be incorporated into relatively stable dispositions through intergenerational socialization and in the process, reproduce social structure.

Despite these merits, several issues in Bourdieu's theory need to be further explored. While Bourdieu's theory highlights the contrasting and competitive practices of individuals in different class positions, it may be less useful in explaining social actions that are cooperative in nature. Culture does not simply structure social conflict and the reproduction of inequality; it can also shape production and cooperation (Lauglo, 2000; Swartz, 1997). Thus, applying Bourdieu's concept of cultural capital to societies influenced by Confucian thought—such as Taiwan—provides an opportunity for understanding how cultural and social contexts condition processes of stratification.

Over the years, characteristics of Confucian values⁷ that stress the acquisition of academic skills, human malleability, persistence, restraint of emotion, deference to the group, parental authority, filial piety,⁸ environmentalism, moral development, and parental training of

⁷ A value is "a conception, explicit or implicit, distinctive of an individual or a group, of the desirable which influences the selection from available modes, means, and end of actions" (Kluckhohn, 1951, cited in Bond, 1996, p. 209). Yu (1996) notes that the three highest concerns of Confucianism are *lide* (attaining virtue), *ligong* (rendering meritorious service), and *liyan* (establishing words) (p. 232). Also see Oldstone-Moore, 2002, for a discussion of key concepts of Confucianism.

^o Although filial piety (meaning respects for parents and ancestors) is often regarded as an important value associated with Chinese parenting, Ho (1996) notes: "the research results reviewed point to two broad generalizations, both of which reinforce the view that filial piety no longer commands absolute observance as it did in the past. First, the extent to which traditional

children have been identified as having direct or indirect impacts on the educational beliefs and practices of parents and students (Bond, 1996; Broaded, 1997; Chao, 1996; Ho, 1996; Li, 2003; Schneider & Lee, 1990; Smith, 1981; Stevenson & Lee, 1996; Tweed & Lehman, 2002; Wu, 1996; Yu, 1996). As a result of the high premium the society places on academic achievement, over the years, students from Taiwan have achieved high scores in the international standardized testing. For instance, in the latest results of the Program for International Student Assessment (also known as PISA), students from Taiwan were ranked 5th in math, 12th in science, and 25th in reading among all participating countries and economies (Taiwan PISA National Center, 2012).

At the same time, the Confucian concept of 'open education' (or 'education without discrimination')⁹ and the belief in mobility through educational attainment and achievement have survived two thousand years of Chinese history and are still alive and well in Taiwan today (Smith, 1981). With regard to the concept of open education, Stevenson and Lee (1996) note that much of the research literature in Chinese on academic achievement advocates the provision of equal educational opportunities to socioeconomically less advantaged students through the help of the government and the school. To suggest that parents of different SES engage in similar educational beliefs and practices due to the Confucian influence is taking the proposition further than evidence allows. Nevertheless, the evidence does suggest that educational achievement values are entrenched into the lower reaches as well as the upper reaches of the class structure in Taiwan (Broaded, 1997). Next I will discuss issues concerning the use of cultural capital in educational research.

filial attitudes are reflected in actual behavior seems rather limited. Second, present-day Chinese are becoming selective in their filial beliefs and actions" (p. 155).

⁹ Confucius once said, "Education knows no class" (cited in Smith, 1981, xxxi).

Cultural Capital in Educational Research

Despite the common consensus of treating culture as a powerful force shaping ones' educational trajectory, the theoretical usefulness inherent in Bourdieu's concept of cultural capital in empirical research have not been fully realized. For instance, past research using the concept of cultural capital in explaining different educational outcomes was mainly conducted in countries in the West and has yielded inconclusive results. Part of this is due to researchers' diverse ways of defining and operationalizing the concept of cultural capital. For instance, some researchers associate the term with *high culture* while others treat it as *dominant institutional standards* used for social and cultural exclusion. Another reason could be that Bourdieu himself has not offered a clear definition despite the richness of his writing on cultural reproduction. As Lamont and Lareau (1988) note, "This proliferation of definitions [of cultural capital], undoubtedly a sign of intellectual vitality—and possibly, of the fruitfulness of the concept—has created sheer confusion" (p. 153).

Perhaps the most common way of operationalizing cultural capital is to treat it as related to knowledge of or competence with "highbrow" culture (such as fine art, classical music, and literature). Researchers taking this approach assume that cultural competence serves as a "signal" of high social status that is implicitly rewarded in the educational system. In this line of research, variables such as one's familiarity with high culture (including attitude, activities, and information on art, music, literature, theater, etc.) as well as linguistic ability are often used as indicators of the "amount" of cultural capital the student or the parent possesses (e.g. De Graaf *et al.*, 2000; DiMaggio, 1982; Dumais, 2002; Sullivan, 2001).

Interpreting cultural capital as familiarity with high-culture, some researchers have found positive effects of cultural capital on grades or educational attainment (DiMaggio, 1982; Kalmijn

& Kraaykamp, 1996; Werfhorst *et al.*, 2003). Others have found parental reading behavior to be positively associated with children's educational attainment whereas Beaux-arts participation is not (e.g. De Graaf *et al.*, 2000). Still others have found no effect of cultural capital on educational outcomes (Katsillis & Robinson; 1990; Robinson & Garnier, 1985).

Several methodological issues can be identified to explain the inconclusive results. First, when the concept of cultural capital was first developed, it was used by Bourdieu to describe how the French educational system imposes certain evaluative standards upon students and thus contributes to the reproduction of the social distribution of cultural capital within the society.¹⁰ While it may be true that there exists "congruity between educational norms and status practices" in the French society, it may not be necessary for it to take a highbrow aesthetic form, especially when the concept is applied in a non-French context such as the United States or other societies (Lareau & Weininger, 2004, p. 117).

Another problem associated with equating cultural capital with high-culture activities and consumption is that it creates the distinction between "social" (non-cognitive skills, habits, and styles) and "technical" (cognitive skills and grades) competence, which does not fully capture the complexity of Bourdieu's original theorization (Lareau & Weininger, 2004). To Bourdieu (1986), both forms of competence are interwoven in the embodied state (*habitus*) and are in part socially constructed, and therefore, should not be treated separately (Bourdieu, 1986).

¹⁰ Bourdieu (1977a) states: "It is in terms of this logic that must be understood the prominent value accorded by the French educational system to such subtle modalities in the relationship to culture and language as affluence, elegance, naturalness, or distinction...." (p. 495).

Interestingly, much of mainstream research does not consider the embodied form of cultural capital (or *habitus*) in its analysis, making it difficult to see how Bourdieu's model functions.¹¹

A different understanding of the concept of cultural capital animates the work of Blackledge (2001), Carter (2003), Lareau (2000, 2003), Lareau & Horvat (1999), McDonough et al. (2000) and Reay (1998). Considering cultural capital as a "resource" that facilitates the compliance of institutional standards, this group of scholars examines how dimensions such as gender, ethnicity, and social class function to generate distinctions that also serve as a basis for social exclusion. Employing mostly micro-interpersonal methods (ethnography and interviews), their findings not only highlight the arbitrary nature of institutional imposition within different social contexts, but also underscore the importance of considering how the individual strategic use of knowledge, abilities, and skills produce benefits within different *fields* (Lareau & Weininger, 2004; Lamont & Lareau, 1988). For example, Lareau's (2003) study shows that when interacting with educational authorities (teachers and school administrators), middle-class parents exhibit a sense of entitlement and pursue strategies and deploy cultural resources that are absent among their working-class and poor counterparts (e.g. making requests based on their children's special needs). In doing so, middle-class parents not only better able to have their demands met but also appear to be more capable of complying with the dominant institutional standards that call for active and engaged parents.

To summarize, despite the broad acceptance of treating culture as a key element of stratification within the disciplines of sociology and education, the theoretical potential inherent in Bourdieu's concept of cultural capital remains underdeveloped. In this regard, Bourdieu's

¹¹ Dumais' (2002) study is an exception. However, she operationalized the concept of *habitus* as students' occupational aspirations, which may not fully reflect the dynamic nature of the concept itself.

own conceptual ambiguity and researchers' insufficient consideration for both the context (what constitutes cultural capital in a particular social and cultural setting) and content (different forms of cultural capital that reflect Bourdieu's original theorization) in applying the concept have hindered the advance in this line of inquiry.

CHAPTER THREE - METHODS

Sample

The data of this study is from the first and second panels of the Taiwan Education Panel Survey (TEPS), a survey based on a nationally representative sample of 20,055 seventh-grade students, their parents, and their teachers in 2001 and 2003. Sponsored by Academia Sinica, the Ministry of Education, and the National Science Council, TEPS is a series of island-wide surveys of students, teachers, and parents at junior high schools, senior high schools, and five-year colleges. The data was collected with the intention of measuring cultural capital. The questionnaires used in the survey contain items on cultural variables (such as reading and cultural activities), parental educational involvement variables (such as parents' attitude toward education and learning and educational practices), and teacher-reported academic skills and performance measures (such as grades, level of efforts, and problem-solving skills of the student).

Measurement of Variables

Parental economic capital.

The parental economic capital variable in this study will be based on two questions related to the financial situation of the family in the TEPS parents' questionnaire. One question asks "What is the total monthly family income?" The other question asks "How has the family's financial situation been during the past ten years?"

Parental cultural capital.

The parental cultural capital variable is constructed based on questions in the TEPS parents' questionnaire, which includes items on (1) parents' educational level, (2) parents' reading, (3) parents' cultural activities, and (4) parents' self-reported ability, skills, and level of

confidence in various daily situations (see Appendix A Table 1 for a list of questions from the TEPS parent questionnaire). Combining these four dimensions will better reflect Bourdieu's original conceptualization of cultural capital.

Students' cultural capital.

The students' cultural capital variable is constructed based on in questions from the TEPS students' questionnaire on (1) student's reading, (2) student's cultural activities, (3) teachers' evaluations of students' aptitudes and skills, (4) students' self-reported ability, skills, and level of confidence in various daily situations, and (5) students' academic aspirations (see Appendix A Table 1 for a list of questions from the TEPS student questionnaire).

Integrating all these dimensions not only takes into account the 'embodied' form of cultural capital but also the ability of the students to comply with the institutional standards from the perspective of the teacher. Such conceptualization of cultural capital will better reflect the versatile nature of cultural capital as "an informal academic standard," "a class attribute," and "a basis for social selection" in Bourdieu's original theorization (Lamont & Lareau, 1988, p. 156).

Students' academic achievement.

Students' academic achievement will be measured by (1) students' IRT (Item Response Theory)¹² scores in 2001 and 2003 and (2) teacher-reported grades in the first semester of the student's third year. In the TEPS questionnaire, teachers were asked to rank students academically on a scale of 1 (among top five students in the class) to 5 (among bottom five students in the class).

¹² Item Response Theory (IRT), also known as latent trait theory, is based on the idea that the probability of a correct response to an item is a mathematical function of a person and item parameters. It is generally regarded as superior to the classical test theory and has been used to measure abilities, attitudes, and intelligences.

Data Analysis

Structural equation modeling (SEM) with AMOS 17 was used to analyze the association between four latent variables: parental economic capital, parental cultural capital, students' cultural capital, and students' academic achievement. The use of SEM is well-suited for analyzing the data for the present study because of its ability to analyze a multi-equation model within which some of the latent variables have multiple indicators (Kline, 2004). Table 1 (see Appendix A) shows the names, context of the latent variables, and observed indicators.

Several steps were taken in preparing the data for analysis. Variables were re-coded based on the content to ensure the directionality of respondents' answers are uniform (e.g. 1=never, 5=always; 1=no, 2=yes). Those whose answers are "I don't know" were recoded into "system missing." The percentage of missing responses for most variables in the final model (L) ranges 0.1 % to 10.2 %. Exceptions are SAS1 (Student's Academic Aspiration 1), 19.9%, SAS2 (Student's Academic Aspiration 2), 26.9%, and SAA3 (Student's Academic Achievement 3), 18.6%. The full information maximum likelihood (FIML) estimation in AMOS, which avoids the massive loss of cases resulting from listwise deletion, also avoids the biases associated with pair-wise deletion. This method was used to deal with the missing data.¹³ To approximate normality, several variables that have a skew greater than +2 were logarithmically transformed.

Developing the Models

Bourdieu's theory states that parental economic and cultural capital can be transmitted into students' cultural capital and students with a greater amount of cultural capital will do better at school. To test his theorization, four different models were developed. All these models consist of four latent constructs (or factors)— parental economic capital, parental cultural capital,

¹³ Also see Allison (2002) and Arbuckle (1996)

students' cultural capital, and students' academic achievement. Each of these latent constructs has its own second-order factors and indicators (the content and change of factors and indicators will be explained later). Reliabilities were estimated for observed indicators of the same construct (latent variable) and Cronbach's alpha ranged from 0.7 to 0.9.¹⁴ Despite the differences between models, they all reflect the same theoretical constructions outlined by Bourdieu. That is, parental economic capital and parental cultural capital positively affect student's cultural capital, which in term influences his or her academic achievement.

Before testing a substantive or theoretical model, one should first find a good measurement model (Kline, 2005). Hence four different models were run (see Appendix B for the diagram of each model and Table 2, Summary of differences between models). The model fit indices are presented in Table 3 in Appendix C. All of these measurement models reflect the same theoretical constructions outlined by Bourdieu.

The original model, model A (see Figure 1 in Appendix B), consists of four latent constructs: parental economic capital, parental cultural capital, students' cultural capital, and students' academic achievement. Parental economic capital is measured by two questions in the TEPS survey. One of the questions asks about total family monthly income and the other question asks about family financial situation in the past ten years.

Parental cultural capital is a second-order factor that is measured by parents' education and three (first-order) factors: parents' reading (PR), parents' cultural activities (PC), parents' self-reported ability and confidence in various daily situations (PA), and their indicators. Students' cultural capital is a second-order factor that is measured by five first-order factors: student's reading (SR), student's cultural activities (SC), students' academic aspiration (SAS),

¹⁴ With exceptions SC (students' cultural activities) and SR (students' reading) for which Cronbach's alpha was 0.6 and 0.4 respectively.

student's self-reported ability and confidence (SA), teachers' evaluation of students (TE), and their indictors.

Incorporating reading and cultural activities variables as part of students' cultural capital and parents' cultural capital constructs allows the examination of the relationship between the two. Treating parents' and students' self-evaluated ability and confidence as part of their cultural capital in the original model (A) is intended to capture the "embodiment" of cultural advantage in Bourdieu's theorization. In addition, the inclusion of teachers' evaluation of students' skills and abilities (e.g. psychological maturity, abstract thinking, and problem solving) as part of students' cultural capital is an attempt to capture the "imposition of evaluative criteria" by the educational authority (Lareau & Weininger, 2004, p. 126). Lareau and Weininger (2004) contend that the ways that students are evaluated at school (both formally and informally) often reflect the dominant institutional standards and these standards often favor students from certain family backgrounds. Finally, the outcome factor, students' academic achievement, is measured by the students' IRT (Item Response Theory) scores in both 2001 and 2003 and teacher-reported student grades in 2003.

CHAPTER FOUR – RESEARCH FINDINGS

Finding the Best Measurement Model

Among all models tested, Model A (see Figure 1 in Appendix B) is the most comprehensive in terms of factors and indicators included in the model. The Chi-square for Model A is 19,923, with 582 degrees of freedom and a p-value less than .001 (See Table 3 in Appendix C). RMSEA¹⁵ equals .052 and CFI, NFI, and TLI are .873, .869, and .854, respectively. These results are not satisfactory because CFI and NFI are below .90.

In the second model, Model E (see Figure 2 in Appendix B), two paths were added for theoretical reasons: the path between Parental Economic Capital and Student's Academic Achievement and the path between Parental Cultural Capital and Student's Academic Achievement. In addition, three second-order factors (SC, SA, PA) and an indicator (SR3) were eliminated due to their low standardized regression weights. The results for Model B showed that Chi-square equals 11,084 with 198 degrees of freedom. RMSEA equals .066 and CFI, NFI, and TLI are .901, .900, and .874, respectively. While there were some improvements on CFI and NFI, and TLI, RMSEA had become worse (from .052 to .066) because the model was less parsimonious.

In the third model, Model K (see Figure 3 in Appendix B), a second-order factor TE (teachers' evaluation of students' confidence and various abilities) was removed due to its high correlation with Student's Cultural Capital (.793). Such a high correlation contributed to the exceptionally high correlation between Student's Cultural Capital and Student's Academic Achievement (.947). It seemed that in the TEPS survey, students who did well academically

¹⁵ RMSEA (Root Mean Square Error of Approximation) is a "badness of fit" index in that a value of zero indicates perfect fit and the higher the values, the worse the fit (Kline, 2005, p. 138).

were also ranked highly by their teachers in their confidence levels and abilities, making TE a "contaminated" construct in the model. As a result, TE became a predictor of Student's Academic Achievement. In other words, items in TE were quite from others in Student's Cultural Capital in that they indicated student's effort and work habits (and teacher's perception of them) rather than the academic skills the students might have. Once TE was removed, the results in Model K showed some further improvements in the model fit, with Chi-square equaled 4,582 (df=125, p<.001), RMSEA equaled .053, and CFI, NFI, and TLI were .938, .937, and .915.

Among all the models tested, Model L has the best fit indices. In Model L (see Figure 4 in Appendix B), two more indicators (PR3 and PC3) in Model K were eliminated due to their relatively low regression weights (factor loadings). The Chi-square is 2,611, with 94 degrees of freedom and a p-value less than .001. However, Chi-square is proportional to sample size and with a sample of over 12,000 rejecting the null hypothesis of perfect fit is almost certain. Hence, as with the other models, fit indices that do not depend on sample size were used to evaluate the model. Results showed that for Model L, RMSEA equals .046 and CFI, NFI, and TLI are .961, .960, and .944, respectively, all of which are considered good by many experts in CFA such as Bentler (1990).

To measure convergent and discriminant validity, a pure CFA measurement model was run. This model was created by eliminating all causal relations between second-order factors while estimating the correlations between them and the results showed that there was no excessively (greater than .85) high inter-correlation among factors and therefore that the factors can be considered distinct.

Assessment of the Best Measurement Model

In evaluating the measurement model, another focus is on the relationships between factors and their indicators. As shown Table 4 (in Appendix D), in Model L, standardized loadings between factors and their indicators (e.g between SAS—Student's Academic Aspiration and SAS1, SAS2) range from moderate to high (from .46 to .916) and all are significant at p<.001.

The standardized loadings between Student's Reading (SR) and its indicators SR1 (.538) and SR2 (.462) are relatively low when compared with other loadings. Nevertheless, SR is kept in the model for two reasons. First, statistically, removing SR in the model worsens model fit (RMSEA increases from .046 to .052 and squared multiple correlation for the outcome factor student's academic achievement decreases from .600 to .451). Second, we keep it for theoretical reasons. Reading as a habit (or linguistic competence) has been shown by past research on cultural capital as being beneficial for school outcomes (e.g. De Graaf *et al.*, 2000; Dumais, 2002; Sullivan, 2001). Moreover, it is an essential element in Bourdieu 's theorization.

The low loadings in SR (SR1=.583, SR2=.462) may be a result of how the concept is measured in the TEPS survey (based on (1) frequency of visiting bookstores and book fairs and (2) time spent reading literature). Similarly, the low loading for EC2 (.534) could be due to the less-than-ideal measures of parental economic status. These are based on (1) total monthly family income and (2) financial situation in the past ten years, without information on family wealth such as property ownership. Nevertheless, these are the only two questions related to parental financial situation being asked in the TEPS survey. Overall, most of the latent constructs in the model can be regarded as valid and reliable.

Assessment of the Structural Model

In evaluating the structural part of the model, the focus is on the relationships between factors. The goal here is to see whether the directions (positive or negative) and magnitudes of effects between factors specified in the model are supported by the data (Diamantopoulos & Siguaw, 2000). As shown in Figure 4 (in Appendix B) Table 5 (in Appendix E), in Model L (as well as in all other models), the signs of almost all parameters are consistent with the hypothesized relationships among factors and all causal paths are significant at p<.001. That is, parental economic capital is positively associated with parental cultural capital, which has a positive effect on students' cultural capital and ultimately, their academic achievement.

The two non-significant paths are the one between parental economic capital and students' academic achievement and the path between parental cultural capital and students' academic achievement. Nevertheless, the non-significance of these two paths does not undermine Bourdieu's theory or contradict research hypotheses. Rather, it strengthens his argument that parental cultural capital acts as a "mechanism" through which family advantages (economical and cultural) are transmitted. The correlation between parental cultural capital and parental economic capital was .721, indicating that parents' income is highly associated with their cultural capital (measured by parents' education, reading, and cultural activities). In other words, parents of higher income tend to be better educated and are more engaged in reading and cultural activities.

The standardized effect of parental economic capital on students' cultural capital is much smaller (r=.108) than the effect from parental cultural capital (r=.532). Furthermore, the strong and significant relationship between students' cultural capital and students' academic achievement is evidenced by the structural coefficient of .727. While money matters, it is the transmission of

cultural capital from parents to students that has the largest effect on students' performance. The squared multiple correlations (explained variance) for the two endogenous variables in the model are .600 for student's academic achievement and .377 for students' cultural capital. Taken together, the structural part of the model provides strong support for Bourdieu's theory that parental economic capital and cultural capital have positive impacts on students' cultural capital, which in turn, affects their academic achievement.

CHAPTER FIVE – DISCUSSION AND CONCLUSION

The findings from this study support Bourdieu's theory that parental cultural capital, unequally distributed based on income levels, has positive effects on students' cultural capital and subsequently, their school outcomes in Taiwan. As shown in the final structural equation model (L), parental economic capital (income), the 'root' of all forms of capital, is closely associated with parental cultural capital (.721). While both forms of parental capital exert positive direct effects on students' cultural capital, the effect from parental cultural capital is much greater (.532 vs. .108.).

The study further indicates that in Taiwan, cultural capital takes the form of education level, reading (PR), and cultural activities (PC) for the parents while for the students, the amount of reading (SR) and high academic aspirations (SAS) are the most essential. Finally, the findings also indicate that students' cultural capital has a strong effect on their academic achievement (.727) and that its effect are much greater than the effects from parental economic capital (.039, non-significant) and parental cultural capital (.042, non-significant). Overall, the findings validate Bourdieu's argument that cultural capital act as a disguised *mechanism* that transmits family advantages. The unequal distribution of cultural capital based on different income levels leads to unequal distribution of cultural capital among the students, differentiating their educational outcomes.

By testing different models based on Bourdieu's framework, we learned several lessons that have implications for future research. First, the more "conventional" (or in Lareau and Weininger's term 'the dominant') interpretation of cultural capital in the English-language literature often treats cultural capital as a construct closely associated with high-brow cultural activities. Such treatment unnecessarily creates a partition between one's sense of artistic

appreciation and linguistic abilities on the one hand, and cognitive skills and abilities on the other.

On the surface, such an approach may appear to fall in line with Bourdieu's (1984) contention that cultural consumption serves as a basis for social distinction. However, it does not truly reflect his original theoretical intent, particularly his signature concept of *habitus*. Indeed, to Bourdieu (1986), both cultural competence (such as art appreciation) and technical competence (such as scientific knowledge and math skills) are analytically inseparable.¹⁶ These two forms of competence merge in the "embodied" state of an individual and are activated in different social spheres. Thus, as this study has shown, incorporating academic skills as one dimension of cultural capital better captures the essence of Bourdieu's theory and further realizes the concept's empirical potentials.¹⁷

Furthermore, the findings suggest a *lack* of correspondence between what constitutes cultural capital for the parents and for their children. As shown in the final model, Model L (see Figure 4 in Appendix B), parental cultural capital in Taiwan is indicated via parents' education level, parents' reading, and parents' cultural activities. But for the students, academic aspiration and reading are the most salient attributes of cultural capital.

This lack of correspondence has important methodological implications for future investigation. First, in Bourdieu's theory of social and cultural reproduction, the underlining assumption is that children acquire, intentionally and unintentionally, certain societally-valued

 $^{^{16}}$ As Bourdieu (1986) states in his criticism of Becker and other human capital theorists, "their studies of the relationship between academic ability and academic investment show that they are unaware that ability or talent is itself the product of an investment of time and cultural capital" (p. 85).

¹⁷ As Lareau and Weininger (2004) note, "academic skills should not be excluded from the purview of cultural capital research. Academic skills are, instead, part of what we should be conceiving of as cultural capital" (p. 136).

qualities (tangible or intangible) through their family upbringing. It is further assumed that these qualities later give them advantages in the process of education and in the job market. While there may be "leakage" in the process, the transmission is pervasive and systematic. Thus, children whose parents listen to classical music and read often are more likely to have greater affinity toward classical music and reading themselves.

Following this logic, researchers often take corresponding sets of questions asked to parents and students as indicators of their cultural capital in assessing its effect on academic attainment and achievement. For instance, Ganzeboom, De Graaf, and Robert (1990), Aschaffenburg and Maas (1996), and Sullivan's (2001) work on cultural capital all invoke highculture practices or cues in both parents and their children. Although an association between parents' cultural capital and students' cultural capital helps establish evidence on the intra-family transmission of cultural capital, their correspondence (in terms of the constituents of cultural capital) cannot be taken for granted and deserves scrutiny.

Such caution is especially warranted when analyzing data cross-culturally. As this study suggests, unlike their parents, junior high school students in Taiwan are pre-occupied with heavy school work and the preparation for national exams, leaving them no time for other activities. This is evidenced by the elimination of SC (students' cultural activities) as one component of students' cultural capital from the original model (A) due to low standardized regression weights (.107). If this study had unquestionably taken students' cultural activities as the *sole* indicators of their cultural capital measure, we might not be able to find an effect of students' cultural capital on their academic achievement. Similarly, if we had relied only on parents' high-status cultural signals (behaviors, tastes, and attitudes) and assumed that such signals would "reproduce" themselves in their children, we may have failed to capture the real mechanism of the

transmission (and transmutation) of cultural capital, a process that may not be universal and is shaped by local institutional contexts. This point is best explicated by Lamont and Lareau (1988) who argue "before the *effects* of cultural capital could be analyzed in a given context, its *content* had to be empirically specified (cited in Lareau & Weininger, 2004, p. 117, emphasis in original).

In addition, the findings (as shown in Model L) also suggest that the amount of students' reading (SR) and how high their academic aspirations (SAS) were are the two key components of student's cultural capital. This is a rather interesting (yet expected) outcome given that for centuries Taiwan has been influenced by Confucian thought that places a premium on academic excellence. Under such cultural ethos, students who internalized this motivational drive to succeed academically are considered to have embodied "symbolic wealth socially designated as worthy of being sought and possessed" (Bourdieu, 1973, p. 73). While Confucian influences facilitate certain educational aspirations and practices across social classes, the unequal distribution of this motivational drive within the students and different levels of cultural capital and economic capital possessed by the parents differentiate their educational strategies and outcomes.

If this is true, *where* does this motivational drive come from? To Bourdieu, such motivational disposition is inculcated (mostly unconsciously) mainly through one's family upbringing. Once acquired, this inculcation becomes part of one's forgotten *history* (the unconscious part of *habitus*) and later takes on a symbolic form to signal "legitimate competence" in a given *field*. He writes:

Cultural capital can be acquired, to a varying extent, depending on the period, the society, and the social class, in the absence of any deliberate inculcation, and therefore quite unconsciously....It thus manages to combine the prestige of innate property with the merits of acquisition....Because the social conditions of its transmission and acquisition are more disguised than those of economic capital, it is predisposed to function as

symbolic capital, i.e., to be unrecognized as capital and recognized as legitimate competence, as authority exerting an effect of (mis)recognition. (Bourdieu, 1986, p. 86)

Thus, according to Bourdieu, having high academic aspiration is not merely a random personal trait. Rather, it is a product of social investment by the parents. It serves as a "classifier" that affects a student's ability to comply with the dominant educational norms. Nevertheless, more future research is needed in this area to further establish this proposition.

This study has attempted to advance the theoretical and methodological development of research on cultural capital in several important ways. First, this study attempts to improve on the ways previous research operationalized cultural capital by taking into consideration the "embodied" form of cultural capital (such as students' academic aspiration). In addition, unlike research that mainly focuses on the *net* effect of cultural capital on student attainment/achievement, this study also considers all the theoretical constructs outlined in Bourdieu's theory (parental economic capital, parental cultural capital, students' cultural capital, and students' academic achievement), allowing better evaluation of his model.

Finally, by applying Bourdieu's concept of cultural capital to the Taiwanese society, this study demonstrates how social, cultural, and institutional contexts beyond the West condition the process of educational stratification. Although Taiwan has lesser educational and social inequality than some countries in the West (Buchmann & Hannum, 2001; Chu, 1989, Thornton & Lin, 1994), parental cultural capital is closely associated with family income and has a strong effect on students' cultural capital, which in turn influences their academic achievement. In this regard, Confucianism reduces, but does not eliminate the effects of *economic* capital on academic achievement and thus it does not eradicate differences between students from different socio-economic statuses.

Limitations

Several limitations due to the design of the questionnaire have to be acknowledged here. First, while it would be desirable to also have information on family wealth (e.g. property and stocks ownership), the TEPS questionnaire does not contain such items. In addition, the questionnaire does not ask questions about family size and without such information, monthly family income can only serve as an imperfect indicator of parental economic capital. In addition, the data analyzed is cross-sectional and does not allow us to examine the *long term* effect of cultural capital. It is possible that students with greater amount of cultural capital at this point in time may engage in more cultural activities later in their life than those with lesser amount of cultural capital.

Conclusion

Applying a Western-developed concept in a non-Western context, this dissertation research demonstrates that parental cultural capital in Taiwan is strongly associated with parental economic capital (income) and has a significant effect on both students' cultural capital and their academic achievement. Despite the fact that over the years Taiwan has achieved high educational proficiency amid the legacy of Confucian influences, cultural and financial resources within the family matter, both in the process of students' learning and their educational outcomes.

Bourdieu's theory of social and cultural reproduction is a powerful tool for unmasking the often hidden mechanism that perpetuates structural inequality, yet the complexity of social life makes producing a parsimonious definition of cultural capital a difficult task. Capital, be it social, cultural, or economic, tends to accumulate. However, the ways through which different types of capital converge and operate within different contexts will always remain a fruitful area for sociological studies.

APPENDICES

APPENDIX A

Table 1 List of Factors, Indicators and Item Content

Parental Economic Capital				
EC1		"What is the total monthly family income?"		
EC2		"How has the family's financial situation been during the past ten		
		years?"		
Parental Cultural Capital				
PE1		"What is your educational level?"		
Latent	Observed			
Variable	Indicators			
	PR1	"Do you often read?"/ "Does your spouse often read?" (taking the		
		mean of both parents)		
	PR2	"Did you make trips to bookstores, book fairs or borrow books		
		from the library during the past year?" (taking the mean of both		
	DD2	parents)		
חח	PR3	"Did you take <u>your child</u> to bookstores, book fairs, or any kind of		
PK	DD 4	Taking sum of the following sugginger		
	PK4	"Do you subscribe to Chinese language journals or magazines?"		
		"Do you subscribe to English language journals or magazines?"		
		"Do you have encyclonedia at home?"		
		"Do you have Internet connection at home?"		
PR5 "D		"During the past year, how much time did you spend on reading		
	110	books or magazines?" (taking the mean of both parents)		
	PC1	"During the past year, how many times did you go to classical		
	_	music concerts or dance/opera performances?" (taking the mean		
		of both parents)		
PC	PC2	"During the past year, how many times did you go to exhibitions		
		in art galleries or museums?" (taking the mean of both parents)		
	PC3	"Did you take your child to classical music concerts or		
		dance/opera performances when he or she was in elementary		
		school?"		
	PA1	"You can easily communicate a relatively complex matter."		
	PA2	"You are well-organized no matter how big or small the thing is."		
PA	PA3	"You can work well with any person."		
	PA4	"You learn how to use products of high technology fairly fast."		
	PA5	"There isn't a lot of things in life that you can not handle."		
	<u>.</u>	Students' Cultural Capital		
	SR1	"Do you frequent book stores, libraries, or book fairs?"		
SR	SR2	"How much time do you spend reading literature on the subject of		
		history, philosophy, biography, politics, economics, and		
		technology?"		
	SR3	"How many books did you borrow from the library in 8 th grade?"		

	SC1 "Do you listen to classical music or go to dance perfo				
SC	SC2	"Do you go to art or literary exhibitions at the gallery or			
		museum?"			
	SC3	"Do you know how to play a musical instrument?"			
	TE1	"What is the student's level of academic progress?"			
TE	TE2 "What is the student's level of effort?"				
	TE3	"How well does the student turn in assignments on time?"			
	TE4	"How well does the student ask and answer questions in class?"			
	SA2	"I am good at learning new technology."			
	SA4	"I am good at expressing my opinions, making reports, and			
SA		explaining things."			
	SA5	"I am very organized."			
	SA6	"I am good at working with others"			
	SA7	"There isn't a lot of things in life that I cannot handle."			
	SAS1	"What level of education do you expect yourself to obtain?"			
SAS	SAS2	"Considering your ability, what level of education do you think			
		you can obtain?"			
		Students' Academic Achievement			
	SAA1	Students' IRT Scores in 2001 (wave 1)			
SAA	SAA2	Students' IRT Scores in 2003 (wave 2)			
	SAA3	"What is the grade of the student this semester?" (the question			
		was asked in the first semester of students' third year at the junior			
		high school in 2003, answered by their homeroom teachers)			

APPENDIX B

Figure 1. Results from Structural Equation Modeling for Model A (errors terms are not included)



Figure 2. Results from Structural Equation Modeling for Model E (errors terms are not included)



Figure 3. Results from Structural Equation Modeling for Model K (errors terms are not included)



Figure 4. Results from Structural Equation Modeling for Model L (errors terms are not included)



Table 2 Summary of Differences between Models

Differences between Models						
Model A	Model E	Model K	Model L			
Key components:	Differences from	Differences from	Differences from			
	Model A:	Model E:	Model K:			
Parental Economic Capital						
– EC1, EC2	Added (based on	Eliminated TE	Eliminated PR3			
	theoretical	due to high inter-	and PC3 due to			
Parental Cultural Capital	reasons):	correlation	low standardized			
PE1	(1) the path	between TE,	reg. weights.			
PR – PR1, PR2, PR3, PR4,	between	Student's				
PR5	Parental	Cultural Capital,				
PC – PC1, PC2, PC3	Economic	and <i>Student's</i>				
PA – PA1, PA2, PA3, PA4,	<i>Capital</i> and	Academic				
PA5	Student's	Achievement				
	Academic					
Student's Cultural Capital	Achievement	Items in <i>TE</i> were				
SR – SR1, SR2, SR3	(2) the path	quite from others				
SC – SC1, SC2, SC3	between	in <i>Student's</i>				
SAS – SAS1, SAS2	Parental	Cultural Capital				
SA – SA2, SA4, SA5, SA6,	Cultural	in that they				
SA7	<i>Capital</i> and	indicated				
TE – TE5, TE12, TE13,	Student's	student's effort				
TE14	Academic	and work habits				
	Achievement	(and teacher's				
Student's Academic		perception of				
Achievement	Eliminated (due to	them) rather than				
– SAA1, SAA2, SAA3	low standardized	student's				
	reg. weights):	academic skills				
	(1) SR3					
	(2) SC					
	(3) SA					
	(4) PA					

APPENDIX C

Fit Measure	Desirable	Model			
	Range	Α	Ε	K	L
Chi-Square		19923	11084	4582	2611
(CMIN)	p >.05	p<.001	p<.001	p<.001	p<.001
df		df=582	df=198	df=125	df=94
RMSEA	<.05 good fit				
	.05079	.052	.066	.053	.046
	reasonable fit				
	.0810				
	mediocre fit				
	>.10 poor fit				
NFI	>.90	.869	.900	.937	.960
RFI	>.90	.851	.872	.913	.942
IFI	>.90	.873	.902	.938	.961
TLI (NNFI)	>.90	.854	.874	.915	.944
CFI	>.90	.873	.901	.938	.961
PNFI	>.50	.760	.704	.685	.663
PCFI	>.50	.763	.706	.686	.664
CN	>200	418	280	416	565
AIC	Less than	20163<	11238<	4713<	2727<
	those of the	152660	110785	72317 (Ind.)	64980 (Ind.)
	Saturated and	20163>	(Ind.)	4713>	2727>
	Independence	1404	11238>	378 (Sat.)	304 (Sat.)
	models		550 (Sat.)		
ECVI	Less than	1.6<	.897<	.376<	.218<
	those of the	12.187	8.844 (Ind.)	5.773 (Ind.)	5.188 (Ind.)
	Saturated and	1.6>	.897>	.376>	.218>
	Independence	.112	.044 (Sat.)	.030 (Sat.)	.024 (Sat.)
	models				

Table 3 Model Fit Indices for Model A, E, K, and L

APPENDIX D

Parameters			Standardized
			Coefficients
Parental_Economic_Capital	\rightarrow	EC2	.534
Parental_Economic_Capital	\rightarrow	EC1	.786***
Parental_Cultural_Capital	\rightarrow	PE1	.694
PR (Parent's Reading)	\rightarrow	PR1	.696
	\rightarrow	PR2	.734***
	\rightarrow	PR4	.633***
	\rightarrow	PR5	.742***
PC (Parent's Cultural Activities)	\rightarrow	PC1	.621
	\rightarrow	PC2	.893***
SR (Student's Reading)	\rightarrow	SR1	.538
	\rightarrow	SR2	.462***
SAS (Student's Acad. Aspirations)	\rightarrow	SAS1	.814
	\rightarrow	SAS2	.800***
Student's_Academic_Achieve ment	\rightarrow	SAA3	.666
	\rightarrow	SAA2	.916***
	\rightarrow	SAA1	.875***

Table 4 Factor Loadings for Model L

*** = p<.001

Note: The unstandardized coefficients for variables EC2, PE1, PR1, PC1, SR1, SAS1, and SAA3 were set to be 1 and no significance test is reported in AMOS output.

APPENDIX E

Paramatara			Standardized
Farameters			Coefficients
Parental_Economic_Capital	$\leftrightarrow $	Parental_Cultural_Capital	.721***
Parental_Economic_Capital	\rightarrow	Student's_Cultural_Capital	.108***
Parental_Cultural_Capital	\rightarrow	Student's_Cultural_Capital	.532***
Parental_Cultural_Capital	\rightarrow	PR	.945***
Parental_Cultural_Capital	\rightarrow	PC	.640***
Student's_Cultural_Capital	\rightarrow	SAS	.782***
Student's_Cultural_Capital	\rightarrow	SR	.509
Student's_Cultural_Capital	\rightarrow	Student's_Academic_ Achievement	.727***
Parental_Economic_Capital	\rightarrow	Student's_Academic_ Achievement	.039 (p=.073)
Parental_Cultural_Capital	\rightarrow	Student's_Academic_ Achievement	.042 (p=.181)
444			

Table 5 Structural Coefficients for Model L

*** = p<.001

Note: The unstandardized coefficients for variable SR was set to be 1 and no significance test is reported in AMOS output.

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