

## Chapter 2 Literature Review

This chapter accomplished two goals. The first goal was to place the dissertation within broad literatures on adolescent life and their educational environments, especially their school environments. The second was to present the theoretical foundation for models of social structure, with a focus on school systems adolescents trapped in and their impacts.

### School Effects

Adolescence is an intimate, social switching point in the life course, when a boy or girl is no longer fully within the parental family, but has not yet formed a family of his own, close ties with friends replace the family ties that are so strong during most of the rest of his life. As such, their attention is turned inward, toward the peers who are in similar positions to themselves. Instead of turning to adults for help with the transition, they turn to their intimate friends with whom they experiment and share secrets. At the very time when adolescents are most isolated structurally from adult society, they are making the choices and engaging in behaviors. The schools are partly responsible for these strong associations of adolescents and their peers, especially in Taiwan. By gathering adolescents together for eight hours or more each day, they constitute the locus for associations that expand into the rest of the day.

Coleman's famous work, *the Adolescent Society*, is one of the earliest works that deeply described adolescent school lives, how their relational structure was made, how the climates formed, and how all these influenced adolescent outcomes (Moody, 1999). Coleman argued that the adolescent community was created by the organization of

mass education and adolescent society emerged because students were segregated from adults for most of the day.

“...our adolescents today are cut off, probably more than ever before, from the adult society. They are still oriented toward fulfilling their parents’ desires, but they look very much to their peers for approval as well. Consequently, our society has within its midst a set of small teenage societies, which focus teenage interest and attitudes on things far removed from adult responsibilities, and may develop standards that lead away from those established by the larger society.” (Coleman, 1961, p.9)

Overall, *The Adolescent Society* provides one of the few comprehensive examinations of adolescent relational patterns and their values. The work, however, was limited in many respects. While the attempt was made to choose schools with large status differences (SES and community size), relative few schools, in fact, only ten schools, were chosen. Additionally, while some data were collected over time, little was done to explain changes in the school system. And most importantly, Coleman never articulated a consistent theory underlying his observations. Since Coleman, no comprehensive quantitative study of multiple schools has been done. This leaves us that some improvements could be done to increase our understanding of adolescent society since 1961.

After *The Adolescent Society*, Coleman continued doing a series of studies about American educations in middle schools(Coleman, 1976, 1985, 1991, 1993; Coleman, et al., 1966; Coleman, Fagnano, & Werber, 1994; Coleman, et al., 1982) and concluded that school effects existed in students’ academic performance, however, most of these effects came from the differences of family backgrounds, while only a little came from teachers and peers’ influences. Nevertheless, for every individual, one can not change the ascribed status that origin family gives him, as an education worker, I therefore concerned about what school education can do and what’s the real

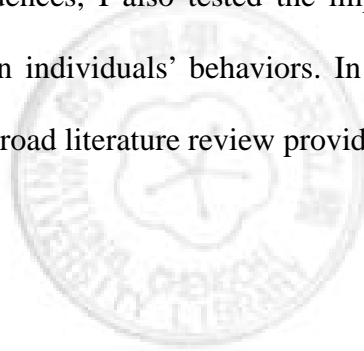
school effects on adolescent developmental outcomes.

Following Coleman's works, numerous studies were conducted which aimed to identify effective schools, assess the magnitude and stability of school contributions to students' outcomes (Alwin, 1976; C.-J. Chen, 2006; Good & Brophy, 1986; Hallinan, 1994; V. E. Lee & Burkam, 2003; Ma & Klinger, 2000; Meyer, 1970; Murphy, 1985; Raudenbush & Willms, 1995; Willms & Raudenbush, 1989; C.-I. Wu & Lei, 2005). Most of these studies confirmed that more differences from family backgrounds than particular school effects. However, recent literature indicated that parental influences are highly stable over childhood and adolescence because parents' plan for their children's education are in place long before high school (Alexander, et al., 1994, 2003; Dauber, et al., 1996; Yi, et al., 2007; Yi, et al., 2008). We can not deny the influences of family background, thus, what else education can do become the next important issue. Does school education maximize or minimize the learning gap among students from different family background? While some confirmed that school magnified these gaps (Bourdieu & Passeron, 1977; C.-J. Chen, 2006; Condrón & Roscigno, 2003; Gamoran & Mare, 1989; Oakes, 1985), some argued that schools offset these learning gaps (Alexander, Entwisle, & Olson, 2007; Cremin, 1951; Downey, von Hippel, & Broh, 2004).

In Taiwan, lots of studies discussed the influences of family and school on students' outcome, but really few focused on the school effects. In searching for studies having "school effect" in the title or key words in "Electronic Theses and Dissertations System" and "Taiwan Periodical Index Database", only few studies were found that really focused on school effect of particular schools. Chen (2006) used data from Taiwan Youth Project and concluded that, after controlling factors of personal background, the school variables including school size, mean of parents' educational backgrounds, school location had significant impacts on adolescent

academic performance. She ended up her research with the conclusion that schools enlarged the learning gaps of students' from different backgrounds. However, Chen's research didn't compare the learning gaps before students entered the schools, so we didn't even know how much these gaps came from school education. Besides, Chen only used cross-sectional data in her research, thus, we still didn't know the school role in a long-term time span.

To answer the question about how school structure influences students' performance and to improve our understanding of the mechanisms between schooling and students' outcomes in Taiwan, in this research, I examined the effects particular schools/classes accountable for their contributions to students' outcomes. With the special focus on peer influences, I also tested the impacts of peer relationships in educational environment on individuals' behaviors. In next sections, the theoretical background as well as the broad literature review provided to introduce this research.



## Theoretical Background

Blau's sociological structure theory could be used to explain the observations in school society. In Coleman's arguments, school is one of few social systems independent of our society, because students were tied in schools for more than eight hours a day. This means adolescents live in a distinct society that functions according to its own internal pressures and dynamics.

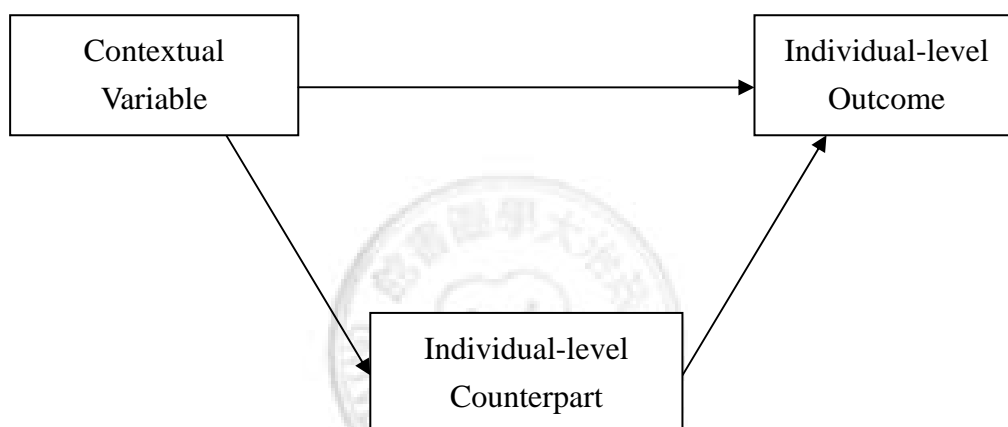


Figure 2.1 Blau's Operational Model

Blau presented a macro-sociological theory that focuses on the effects of social structure on people's associations with other people (1960; 1977). The theory was composed of two analytically distinct categories of social structure. The first category was distributional, that is, it referred to properties that emerge from the distributions of social characteristics. The other was social network approach to social interactions. Entwisle, et al. (2007) followed Blau's theoretical design and fixed the terms as "contexts", the former, and "networks", the latter. Blau's operational model included a contextual variable, networks or contexts, its individual-level counterpart, and an individual outcome (see Figure 2.1). Blau found that there were two types of structural effects, one based on normative variability, the direct effect of normative

environment, and the other on local variability, the indirect effect of opportunity structure. The difference between these two interpretations: the former implied that social processes external to individual characteristics were responsible for the structural impacts and the latter that intra-personal processes were responsible.

Blau conducted a pilot study of a public assistance agency and found both of the two basic social structures could have direct effects and indirect effect on individuals' behaviors. From his research, we can concluded that individual's conduct was influenced not only by the motivating force of one's own value orientation but also by the social pressure resulting from the shared values or social relations of the other members of the group. These structural impacts could act as supportive or constraining force, while individuals' characteristics would moderate these structural effects so that the inverse effects or contingency effects could be observed in Blau's study.

Recent developments on data collections and analytic methods, including social network analysis and multilevel analysis, therefore, Blau's approach to empirical modeling survives to this day with the theoretical underpinnings have largely been lost. Nowadays, analysts begin with models conceptualized and operationalized at the individual level, appending measures of local area characteristics derived from the census, administrative records, or special surveys. The literature has become preoccupied with whether contextual effects exist given a competition between individual and contextual effects, however, Blau's essential insight, that contextual effects operate through, and in concert with, individual effects, is little in evidence(B. Entwisle, et al., 2007). This research tried to re-examine Blau's structural theory in school settings, aimed to have more understandings about the mechanisms that structure act on individuals' outcome, and tried to answer how school environments, class contexts and class networks, shape individuals' behaviors.

## Individual's Integration into School System

In *The Adolescent Society*, Coleman indicated that one element of acceptance or approval in an adolescent society is simply the number of friends one has (1961). Does this have an effect on the way one sees himself—on the liking he has for himself as he is? Figure 2.2 indicated that it does. In the questionnaires, Coleman asked students to report the question “If I could trade, I would be someone different from my self.” Coleman found that both boys and girls who are not chosen by others were more likely to want to be someone different and there was a general decrease in wanting to be someone different with an increase in the number of friends. And the negative image about oneself was found to be related with one's withdrawal from the school system and rejection of the school system. From Coleman's research, one could conclude that students' positions in their school system did significantly influence students' adaptation in school system.

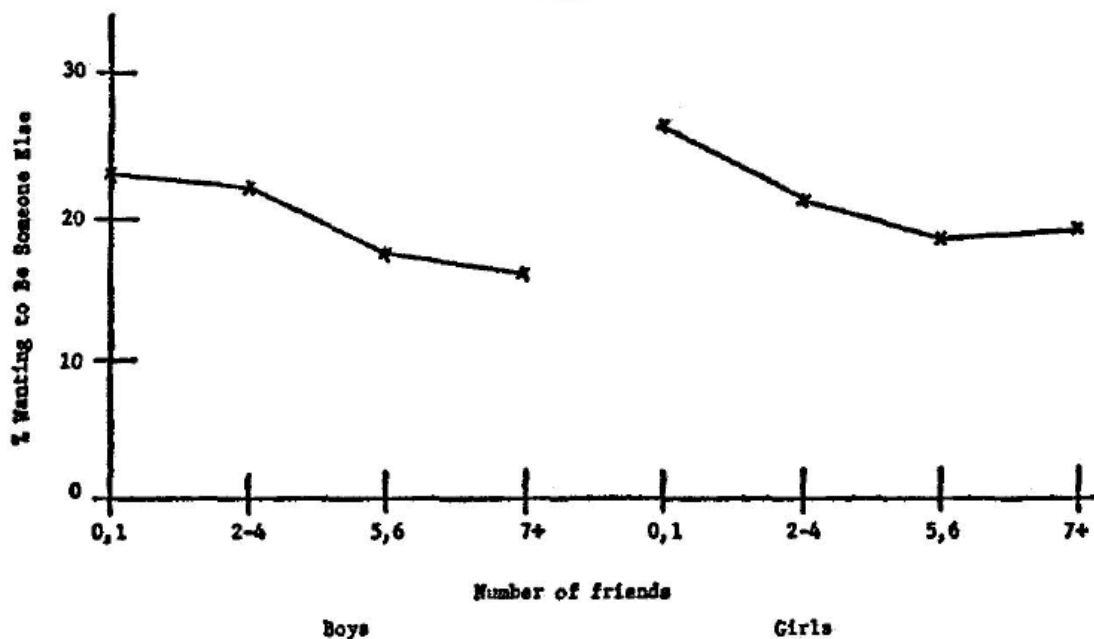


Figure 2.2 Relation between friend numbers and wanting to be someone else

In fact, socially isolated were found to be related to adolescent suicidal thoughts (Bearman & Moody, 2004), weapon carrying (Moody, 2002), lower self-esteem (C.-I. Wu & Lei, 2001), and bad mental health (C.-I. Wu & Li, 2001). Not only socially isolation, indegree and outdegree were found to be related with students' self-esteem, mental health (C.-I. Wu & Lei, 2001; C.-I. Wu & Li, 2001), academic performance (M.-Y. Chang & Wu, 2008; Crosnoe, Cavanagh, & Elder, 2003; Crosnoe & Elder, 2004; Morgan & Sorensen, 1999) and deviant behaviors (Y.-S. Hsieh, et al., 2007; Snijders & Baerveldt, 2003).

The meaning of friend number one has in fact is not only one element of acceptance or approval in an adolescent society (Coleman, 1961), it also represented students' relational integration into school system (Moody, 2001). In social network applications, the outdegrees are measures of expansiveness and the indegrees are measures of receptivity (Wasserman & Faust, 1994). The more friends one nominated in school class (outdegree), the more time and energy one would pay for his/her school class. The more popularity (indegree) one is, the more opportunities one would have to involve in activities in his/her school class. Students' indegree and outdegree not only represent their positions in their school networks, but also reflect the degree they integrate into their school classes. As a consequence, I used outdegree and popularity to measure the degree students integrate into their school classes. The more outdegree and popularity, the more degree students integrate into their school classes.

Besides outdegree and popularity, I also used permeability as an indicator of integration. Permeability measured the ratio of friend number outside school class of the total friend number students nominated. Higher permeability means students have more connections outside class which implied less involve into school class.

According to the findings of past research and the definitions of students'



integration into school classes, I would expect students who have higher degree of integration into their school classes would have better performance in their junior high schools and in their high school placements. That is, the more friend students have in their school classes, no matter they nominated or they are nominated, the better performance student would have. And the less outside friend students have, the better performance they would have.



## Contexts as Social Structures

In Blau's model, one basic type of social structure is social units within which individuals and groups of individual are contained. Neighborhoods, firms, voluntary associations, and schools are examples of these social units. To fix the term, I followed the concept from Entwisle et al.(2007) and referred to the characteristics about the social unit as "contexts".

Reasons why local contexts might matter for individual behavior can be classified in variety of ways in neighborhood studies. For example, neighborhood institutional resources, community social organization and collective socialization, contagion, competition for scarce community resources, relative deprivation were identified as possible mechanisms explaining neighborhood effects(B. Entwisle, 2007; B. Entwisle, et al., 2007; Jencks & Mayer, 1990; Leventhal & Brooks-Gunn, 2000; Moffitt, 2001; Sampson, et al., 2002). However, when we talked about the influences of school context on individual students' behavior, the mechanisms remained still unclear.

In fact, lots of studies discussed the influences of numerous factors of school contexts separately. For example, school size(C.-J. Chen, 2006; Coleman, 1961; Y.-S. Hsieh & Chen, 2008; Rutter, 1983), school types(Coleman, et al., 1982; Hoffer, Greeley, & Coleman, 1985), school social-status composition(C.-J. Chen, 2006; Y.-S. Hsieh & Chen, 2008; K.-H. Lin & Chang, 2008; Ma & Klinger, 2000; Meyer, 1970), school area(C.-J. Chen, 2006; Y.-S. Hsieh & Chen, 2008; K.-H. Lin & Chang, 2008), schools with students of high average ability(Meyer, 1970; Rutter, 1983) and schools' tracking system(Hallinan, 1994) were identified as important factors to influence

students' academic performance. Although we could see the correlations between the characteristics of school contexts and students' outcome from these results, the mechanisms behind these phenomena were ignored. Besides, previous research of the school effects on students' performance had produced inconsistent findings. For example, in *Coleman Report*, Coleman concluded that students' achievement was strongly related to their family background while schools make little differences in students' outcome(1966), however, compared with the British research of Rutter which asserted that schools made a significant differences(1983).

For the inconsistent findings of past studies and for the unobserved mechanisms, the most important purpose I would like to accomplish in this research was to find out the mechanisms behind the observed phenomena. From Blau's operational model in Figure 2.1 , two types of structural effects were found, the direct effect of normative environment and the indirect effect of opportunity structure. For the indirect effect, interpreted as the effect of opportunity structure, is through its individual-level counterpart. Then, which factors would be the most important individual-level counterpart? In the research of Entwisle et al.(2007), it was found that for individual household, the impact of the village-level variable was translated through its household-level counterpart, numbers of reachable in path length 1(outdegree). This was the findings in neighborhood research. As a result, my question next was would these be the same in school context? In *the Adolescent Society*, Coleman found that both boys and girls who were not chosen by others were more likely to want to be someone different and these negative self evaluations subsequently made them withdrawal from the school system or rejected by the system. Past studies also found social isolation would increase students' suicidal thoughts(Bearman & Moody, 2004) and the probabilities to involve in weapon carrying(Moody, 2002). Following these studies, I then argued that individuals'

integration into school systems really matter for successful adaptation.

Consequently, in this research, I tested Blau's operational model and tried to answer whether local context affect the behaviors of students, and if so, how? Whether individuals' integration into school system moderates the impacts of school context? Operationally, school context were measured by the degree of urbanization of school areas and class type. As to the measurement of individuals' integration, three indicators, outdegree, popularity and permeability, were used to measure individuals' connections within their school classes.

Following these discussions, I therefore predict students are more likely to have better academic performance in a school located in higher urbanized area and in a better school class, and this effect will be moderate by individual's integration. My interest was how a given school characteristic affects students' outcome after controlling individual characteristics. This interest was in the effect of belonging to a school with a given organization on individual outcomes.

## Networks as Social Structures

The second basic type of social structure in Blau's structural theory is social relations within the social units or groups of individual are contained. One of the primary questions is explaining how global relationship patterns in local settings influence individuals' outcome. My interest was in describing and explaining features of the social system – that is, on understanding the population of actors and their relations as a complete and interconnected whole and how these influence individual actors' outcomes. This interest brings me to the sub-field of sociology known variously as “social networks” or “structural analysis.” Focusing directly on the topology of social relations and the consequences of such relational patterns, this approach to sociology is perfect for answering questions about the structural influences.

Having friends, occupying a central position in the network of peer groups, and being liked by the friends one chose are special important businesses of adolescents. Because adolescents grow and development in their friendship network, influence and are influenced by their friends, past studies even drew a conclusion that adolescent are influenced more by their peers than by their parents or teachers(Harris, 1995). While a lot of attention has been paid, both in theory and practice, to the adolescent peer group; to its structure, its values and its importance for the individual, for the complexity nature of peer influence, we still don't know much about the peer influences(Moody, 1999).

Recent studies tended to view peer group as a context for the development of adolescent(Hundleby & Mercer, 1987; Kindermann, 1993; A. M. Ryan, 2001).

Schools and classrooms are inherently social places, and it seems likely that peers have an important influence on adolescent achievement beliefs and behaviors. However, less is known about how the peer group influences achievement (Blumenfeld, 1992; Kindermann, 1993; A. R. Ryan, 2000). Ryan (2001) found that peer groups did socialize some academic characteristics and peer group context in the fall predicted changes in students' liking and enjoyment of school and their achievement over the school year. In Ryan's research, the peer group per se was the analysis unit, so we can know the influences of peer group but we can not know how the peer group influences individual students.

With the special focus on school effect, this research therefore wants to examine peer influences in structural dimension. That is, how a network as a whole influences individual's behavior. To describe the characteristics of a network, social cohesion is the best index. Moreno & Jennings (1937) defined cohesion as "the forces holding the individuals within the groupings in which they are," and Festinger, Schachter, & Back (1950) defined cohesion as "the total field of forces which act on members to remain in the group." Fredkin (2004) reviewed past works about cohesion and emphasized the causal mechanisms of cohesion to the outcome variable. He concluded that social cohesion is the causal system that determines individuals' membership attitudes and behaviors.

Therefore, this paper examined how the whole peer effect, the social cohesion, act on individual student in order to testify the school effect. In fact, the cohesion of a network describes how connected members are through direct or indirect ties. Networks in which actors have more ties, on average, are more cohesive than those in which actors have fewer ties. Networks in which actors can reach many others through direct ties or indirect paths are more cohesive than are networks in which relatively few are reachable. The more cohesive a network, the more likely that values

and information can travel through social ties to all members and that activities can be coordinated among networks. I therefore expected to observe the direct influence of class cohesion on individual's outcomes and the indirect effect through individual's position in the class, that is, individuals' integration into class.

Besides class network, Coleman(1961) indicated that the value, activities, and interests characterized the "teen-age culture" as a whole. In believing the influences of adolescent culture, he focused much of his attention in *The Adolescent Society* on schools' "value climate", including the importance of good grades, and the ascriptive criteria in the adolescent status systems, such as athletics, and found all these value climates, the culture, influenced individuals' outcomes in schools.

Griffith(2000) combined all these unseen parts as class climate. He defined class climate as the consensus among student and parent perceptions regarding the school environments. Besides, Stockard and Mayberry reviewed past studies about school/classroom climate, they found, among the aspects of school/classroom climate, most strongly associated with student academic achievement are: high expectations among school staff, students, and parents for student achievement; orderly school and classroom environments; high morale among school staff and students; and an instructional atmosphere characterized by high expectations for students, positive treatment of students, active engagement of students, and positive social relationships among students(1992). To illustrate, in the comprehensive review of the school climate literature, they reduced various aspects of school and classroom climate to concepts of "social order" and "social action." Social order refers to social structure in schools, such as school goals, norms, and values. Social action refers to the day-to-day interactions among students, school staff, and teachers. Following their design, in this study, school climate also included two parts, social order and social action, however, in my operational model, these two parts of school climate were

summed up as a whole to represent the climate of school.

Operationally, assessments of school/ classroom climate rely on perceptions of individual students, school staff, and parents. In Taiwan, lots of studies focused on the effect of class climate on students' outcomes in classes, however, they often assessed students their own perceptions of school/classroom climate and test the effect of these perceptions on individual students' outcomes(J.-C. Chen, 1993; Kao, 2006; Kuo, 2006; S.-C. Lin, 2002). These approaches have generally ignored within-group agreement and how this agreement relates to the group's overall evaluation of the school environment. The second lines to measure class climate, researchers have used aggregated scores of perceptions of individual students, school staff, and parents to assess school/classroom climate(Brookover, et al., 1978; Halpin, 1966; Halpin & Croft, 1963; Hoy & Clover, 1986; Hoy, Tarter, & Bliss, 1990; Moos, 1979; Walberg, 1967). Since the aim of this research is to examine the school effect of the climate, the aggregate measurements will be better. Therefore, in the present research, in order to examine the sources of school effects, the aggregative characteristics of academic climate and social climate of the schools based on data from teachers' questionnaires were obtained to testify the contextual effects on students' outcome.

Past studies approximately agree that school climate and class climate are terms associated with "effective schools" or schools in which students have excelled academically(Brookover, et al., 1978; J.-C. Chen, 1993; Chiou & Wen, 2007; Griffith, 2000; Kao, 2006; Kuo, 2006; S.-C. Lin, 2002; McDill, et al., 1969; Michael, 1961). However, the mechanism of this contextual effect was less mentioned. As the discussion above, following Coleman's work, I argue that individual's integration is the key factor. As a result, I expected to observe that the effect of school context on individuals' outcome would be different because individual have different degree of integration.



Besides, most of these studies analyzed the effect by using OLS regression or contextual analysis. Single-level models that mix individual and aggregated explanatory variables fail to consider the inherent structure of the data can lead to statistical errors and of course lead to misinterpretation of group effects(Aitkin & Longford, 1986). In fact, student-level or individual-level variables have different meanings when aggregated(Burstein, 1980). For example, parent SES is an indicator of the student's home resources; yet, parent SES aggregated to the school level might be an indicator of school resources and the normative environment(Raudenbush & Bryk, 1992). Aggregated or average group explanatory predictors may have a significant effect on the outcome because the group effect is truly important or because it is a proxy for omitted individual effects(Burstein, 1980). Multilevel analysis was developed for three purposes: to improve estimation of effects within individual units (e.g., developing an improved estimate of a regression model for an individual school by borrowing strength from the fact that similar estimates exist for other schools); to model the cross-level effects; and to partition the variance and covariance components among levels(Raudenbush & Bryk, 1992). Thus, the problem of "unit of analysis" would be solve by using Multilevel analysis.

Following these discussions, I therefore predict students are more likely to have better academic performance in a class with better climate and cohesive network, and these effects would be moderated by individual's integration. My interest is how a given school networks affects students' outcome after controlling individual characteristics and multilevel analysis is used to re-examine the effect of class climate and class cohesion.

## Comparisons of Two Education System

In Taiwan, what the meaning of a person's education status is not only a diploma per se, but means that a person with higher education will have a higher class of occupation, higher income, and higher social status, which gives the diploma a more important value for a person, wherefore Credentialism rises and develops (Y.-J. Huang & Chen, 2005a, 2005b). To advance to a higher school for the diploma, students have to be competent enough so that they could get a higher score in entrance exam and jostle for the so-called top high schools. The first tracking system students' have to face in Taiwan is the tracking of high schools, normal high schools and senior vocational schools. These are two totally different educational routes, and after this intersection, students have different curriculums and different opportunities to enter higher education, which states students from these two different tracks will have different careers. Under Credentialism, normal high schools seem to be the only choices of students and parents, so, passing the entrance exam and advance high schools, especially top high schools, becomes a such important life event students have to face.

The single channel, the entrance exam, therefore, brought huge academic stress to students in Taiwan. Education reform was administered in order to mitigate the stress of education competition (Y.-H. Chang, Hsueh, & Huang, 1996; Y.-G. Chen, et al., 2006; C.-S. Wu, 2006; C.-S. Wu & Kao, 2007). The new education system, the Multi-Channel School Admission System, was implemented to substitute for the old education system, the single entrance channel of the entrance exam. The Multi-Opportunities for School Entrance System assigns examination affairs to

experts and allowing schools to admit students through multiple channels. According to their test scores, academic performance and aptitude, students can choose to enter a higher-level school either through schemes of application, recommendation, or through the competency test. Figure 2.3 displays the flow chart of the Multi-Opportunities for School Entrance System.

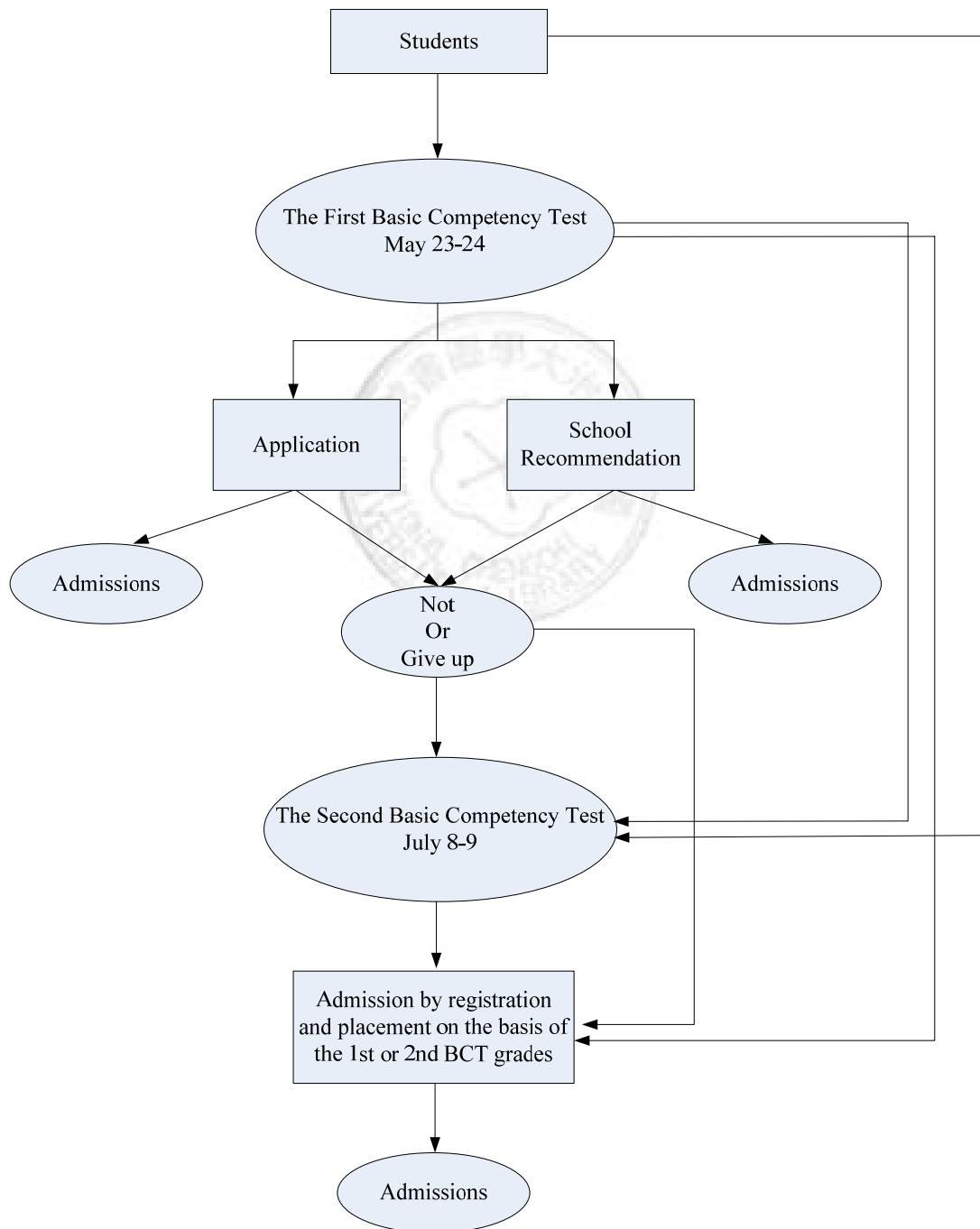


Figure 2.3 Multi-Opportunities for School Entrance System

Education reformers believed that the new education system, the Multi-Opportunities for School Entrance System, would bring diverse values into schools so that not only the academic-orientated value would be rewarded by teachers and students (C.-S. Wu & Kao, 2007). If the education reform could really bring multiple values into class, the class environment should tolerate more opinions or values which will make the whole class more cohesive. However, past studies indicated that the goal of education reform seems not accomplished and students' learning stress didn't be mitigate (Ko, 2006). The reasons are, for the first, the credentialism never disappeared and the top high schools are still there so that students need to study hard to enter top high schools. Second, the credentialism and academic orientation made multiple values hard to be brought to parents and students. Third, although it's good for the original idea of Multi-Opportunities for School Entrance System, the fairness is questioned by teachers and parents. And finally, the uncertainty of education reform made school teachers and parents didn't know how to do to help students successful adapt the transitions of education system and this uncertainty did increase students' learning stress because the tests for advancing high school become more and more. The climate for students to go to cram schools becomes even more prevailing after education reform. Lots of studies documented that family SES become more important for students to enter a better high school under the multi-opportunities for school entrance system than under the education system before education reform (C.-J. Chen, 2006; J.-J. Chen & Liu, 2004; Y.-G. Chen, et al., 2006; Y.-S. Hsieh & Chen, 2008; S.-m. Huang, 2004c; D.-R. Lee, 2007; C.-Y. Lin & Huang, 2008a; K.-H. Lin & Chang, 2008; Liu, 2006). Since the effect of family SES become more and more significant, the school effect should become relatively less significant. I therefore predict that the effects of school networks and school

contexts would be less significant for students from the new education system than those from the old system. And since students from the new system would be observed to spend more time at cram schools, I expected to observe that students from the new system would integrate into the school system less than students from the old system.

Although education reform was administered over ten years, because of the deficiency of data, we really don't know much about the effect of education reform. Most studies about the education reform are opinion papers, papers with information analysis, or some reports about the feelings of students, parents, and teachers. Really few empirical studies were found to discuss the effect of education reform. In fact, Taiwan Education Panel Survey (TEPS) had interviewed 11th graders in the year of 2001, who are the students joining the last entrance exam. Comparing this student cohort with other student cohorts of later surveys of TEPS, maybe we can know something about the effect of education reform. Yet, we didn't see any empirical reports about the education reform using data from TEPS. Besides, the TEPS survey in the year of 2001 didn't really observe students' lives in their junior high schools, we can only know the outcomes of these students after they graduated from junior high school. The impacts of entrance exam, the single channel, on adolescent junior high schools' life can not be testified by using data from TEPS.

The second dataset can be used to compare the different education systems is Taiwan Youth Project (TYP). At 2000, TYP collected 2800 7th graders and 2800 9th graders as well as one of their parents and their headmaster of the class. The 9<sup>th</sup>-grader sample was under the entrance exam while the 7<sup>th</sup>-grader sample was under the basic competency test. Following them over eight years, TYP intended to examine and document the developmental processes and life experiences of Taiwanese youth entering young adulthood. However, the data of 9<sup>th</sup>-grader sample was started at students' grade 9, the last year in junior high schools, we can not use this data to infer

students' whole life in junior high schools.

In order to compare students' junior high school life differences under two different education systems, I will combine data from two different panel studies, Taipei Youth Project with students from the old education system and Taiwan Youth Project with students from the new education system. Because the student cohort of Taiwan Youth Project came from the early stage of education reform, Nine-year Integrated Curricula wasn't administrated at that time. Thus, the only differences of these two student cohort is the difference of the entrance to senior high school. The difference of education systems between two student cohorts are displayed in Table 2.1 .

Table 2.1 The difference between two education systems

Education System	The Old System	The New System
Student Sample	YPS 7 <sup>th</sup> graders in 1996	TYP 7 <sup>th</sup> graders in 2000
Exam Type	Entrance Exam	Basic Competency Test
Exam Time	July	May, July
Number of Channels	Single	Multiple
Channel of Entrance	Admissions by Registration and Placement	School Recommendation(10%~50%) Applications(10%~30%) Admissions by registration and placement(50% at least)
Curriculum	Old Curriculum (Not Nine-year Integrated Curriculum)	

These comparisons focused on adolescent life in school campus. In this research, I would display the characteristics in networks and contexts under the two different educational systems. By comparing the similarities and differences between the two different student cohorts, I intended to scrutinize whether education reform changes students' life experiences. In short, in this research, I first explored the characteristics of local network and context, and further, to consider local structure

influences on human, I examined the contextual effects on students' academic performance with controlling for the influences of family backgrounds. And finally, I compared two macro structure effects of different educational systems, showing their impacts on individuals who trapped in those systems. With the concern of the school effects on individual students under two different education systems, this research ended up with the practical issue about school effectiveness.

