THE RELATIONSHIP OF RACIAL Identity, PSYCHOLOGICAL ADJUSTMENT, AND SOCIAL CAPITAL, AND THEIR EFFECTS ON ACADEMIC OUTCOMES OF TAIWANESE ABORIGINAL FIVE-YEAR JUNIOR COLLEGE STUDENTS

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The study was conducted during November and December 2006, and the participants were Taiwanese aboriginal students at five-year junior colleges in Taiwan. Five hundred students from twenty junior colleges were recruited, and completed data for 226 students were analyzed.

The data were collected by scoring the responses on six instruments which measured Taiwanese aboriginal junior college students’ potential social capital, racial identity development, academic outcome (expected grade) and their psychological adjustment (stress, social support, self-esteem, and academic engagement). The instruments were designed to gather information on the following: (a) potential social capital scale; (b) multigroup ethnic identity measure; (c) racial identity attitude scale; (d) perceived stress scales; (e) self-esteem scale; (f) social support scale; (g) academic engagement scale; (h) academic outcome (expected grade). This quantitative design used SPSS 12 to analyze the data. Independent *t*-tests, Pearson correlation coefficient, regression model, ANOVA, ANCOVA were applied in the study.

Results from this study indicate racial identity affects academic outcome with the covariate of psychological adjustment. This finding contradicts previous research that racial identity cannot affect students’ psychological adjustment and academic achievement in higher education. For social capital, the study provides encouraging evidence that social capital is directly, significantly correlated with academic outcomes and that students with broader social networks develop better academic
outcomes. Further, when students encounter challenges and conflicts, the broader social network assets are covariates with the positive psychological adjustment to lead to the greater academic outcomes. For racial identity, a higher perception of racial identity does not directly affect academic outcome in this research. This conforms to previous research that racial identity does not have much influence on Taiwanese aboriginal college students to fit in the Han dominant academic environment.
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The following expression of thankfulness to those who nurtured this research along seems insufficient in light of the gifts received.

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CHAPTER I

INTRODUCTION

Ancestors of aboriginal Taiwanese lived on Taiwan before the C’ing Dynasty (1644-1912). According to the Taiwanese Aboriginal Identification Law of the Ministry of the Interior (2001), one is an aboriginal Taiwanese if a student’s father or mother is aboriginal Taiwanese, and if one recognizes or registers his or her aboriginal identity. Aboriginal Taiwanese are few and marginal in relation to other races. In 2005, the Council of Indigenous Peoples of the Executive Yuan (the highest administrative organ in Taiwan) recognized 12 aboriginal Taiwanese tribes (Truku, Saisayat, Thao, Tsou, Rukai, Paiwan, Kavalan, Atayal, Amis, Bunun, Puyuma, and Yami), and each tribe has different customs and languages. In August 2004, Aboriginal Taiwanese numbered 402,300 and accounted for 2% of the total population of the 23,000,000 in Taiwan.

Data from the Taiwanese Ministry of Education in 2004 illustrate the marginal status that only 11,233 Aboriginal Taiwanese are post-secondary students. These constituted less than 1% of the total enrollment in higher education institutions. Other data published by the Ministry of Education for the year 2002 show that 52.28% of all Taiwanese aboriginal post-secondary students enrolled in two-year technical colleges and five-year junior technical colleges. While the total number of students in two-year technical colleges and five-year junior technical colleges’ accounts for 30.17% of all
post-secondary students in Taiwanese higher education. In addition, 165 aboriginal students, which represent 1.69% of all aboriginal post-secondary students, are enrolled in graduate schools in Taiwan where the number of all graduate students is 9.85% of the total number of students in Taiwanese higher education. Furthermore, only 11 Taiwanese Aboriginal, out of 18,705 students, were enrolled in doctoral programs in 2002.

Beside the marginal trend of Aboriginal Taiwanese in education, other comparison data, from the National Policy Foundation of Taiwan, in 2002 indicated that the average Non-Aboriginal Taiwanese family’s income (US $2,559) was 2.3 times higher than that of Aboriginal Taiwanese (US $1,120). The Aboriginal Taiwanese unemployment rate was 2.7 times higher than that of Non-Aboriginal Taiwanese. The average life-spans for male Aboriginal Taiwanese and Non-Aboriginal Taiwanese were respectively 62 and 73; female Aboriginal and Non-Aboriginal were 72 and 79. These data indicate the status and perpetual difficulty that Aboriginal Taiwanese face in their struggle to survive in the Han dominant society.

Unlike the majority of non-aboriginal people in Taiwan, the minority of Taiwanese original inhabitants have endured and survived various alienating programs, projects, and policies designed to end their continuance as a people (Zhang, 2000). In order to adapt to the Taiwanese mainstream, many Aboriginal Taiwanese have surmounted enormous social and economic difficulty. Nevertheless, many more still linger between two cultures, seeking to step in the larger society without being deprived of their values-laden heritage. This perilous dilemma, in turn, leads the Aboriginal
Taiwanese into a state of social, economic, psychological and cultural alienation.

The predominant Han institutions in higher education reflect the views and policies that are alienating the Aboriginal Taiwanese students, who encounter more problems and difficulties in learning than their majority counterparts when they assimilate Han values and when they remain attached to their native culture(s) (Wu, 1998). These inequities of treatment from the educational system have conspired to limit the upward mobility of Taiwanese Aboriginal students in learning, career development, social support, psychological adjustment and cultural identity (Huang, 2000).

Influenced by their cultural background, the minority Aboriginal Taiwanese students have developed unique attitudes and value systems nurtured by their traditional cultural environment, which frequently conflict with the predominant Han’s in terms of value differences relative to education (Liu, 2004). These conflicts often raised the issue of how Taiwanese aboriginal students identify themselves (Lee, 2004; Chang, 2000).

People commonly identify themselves by various distinguishable racial, ethnic, and cultural group characteristics. Factors of skin color, country of origin, language, and religion play important roles in forming distinguishable racial, ethnic, and cultural group boundaries. Alvarez (1996) indicated that it is important to form these boundaries in the psychological adjustment and development of individuals. Identity development or establishing a stable sense of self-concept is an essential task for the Taiwanese aboriginal students and for their individual development in Taiwanese
According to Erickson (1968), identity formation consists of two components: ego-identity and self-identity. A stable identity is associated with positive psychological attitudes, including self-assurance, self-certainty, and a sense of mastery (Adams, Gullotta and Montemayor, 1992; Marcia, Waterman, Matteson, Archer and Orlofsky, 1994). The more competently individuals are able to solve conflicts between the old and the new information the more they are able to grow and become more productive within racial identity models (Cross, Parham and Helms, 1991).

Problem Statement

According to statistics published by the Taiwanese Ministry of Education in 2003, the K-12 dropout rate of Taiwanese Aboriginal students is 1.75%, as compared to the national average of 0.3%. That rate represents a nearly six times higher number of completions than for Taiwanese Non-Aboriginal students. Overall, Taiwanese Aboriginal students have the highest dropout rate among all racial or ethnic groups in K-12.

Confined by the social, economic, and cultural barriers, Taiwanese Aboriginal students have less motivation and willingness to attend higher education than do Han cultural descendents. Multiple unfavorable factors influence them on the lowest end of the population structure in Taiwanese post-secondary education, for example: (1) many Aboriginal Taiwanese students are prejudiced because of preferential treatment when applying for colleges and universities, (additional points were usually given specifically to Aboriginal Taiwanese students in the national higher education
admission exam.); (2) the lack of confidence in finishing all required academic curricula due to the lack of preparation and financial aid (Lee, 2004). The Taiwanese Aboriginal student appears to experience competition more keenly than the non-Aboriginal Taiwanese. Consequently, scholastic successes of Aboriginal Taiwanese students in higher education continue to remain out of proportion within the Han dominated institutions.

Many Taiwanese Aboriginal college students, though limited in number, have overcome various obstacles during their higher education career. Nevertheless, the majority of these minority students may experience more pressure in their academic studies and in their social adjustment and life on campus. It results in many difficulties for Taiwanese Aboriginal students to achieve academically and to earn degrees. For example, creating racial identity development apparently represents a significant aspect in college environments (Fitzpatrick and Shook, 1994). Also, the relationship among students’ social capital, racial identity development, psychological adjustment, and academic achievement represents critical features in their learning process. Given this situation, researchers do not have an accurate description of the educational experience of Aboriginal Taiwanese students enrolled in colleges and universities in Taiwan. Thus this study will provide descriptive information on those factors summarized in the following purpose statement.

**Purpose of Study**

For many college students, the transition from home to a new university setting is
hard to establish their social network and to accumulate social capital in a short time that often linked with many challenges associated with psychological adjustment (Paul and Brier, 2001). Alongside the lack of social capital status, Taiwanese Aboriginal college students experienced additional stressors such as stress of cultural differences and lack of social support in the Han dominating student bodies. The extent of an individual’s true sense of identity formation is associated with confidence in their own thoughts and feelings as well as positive attitudes (Townsend and Belgrave, 2001). Feelings of alienation often appear to conflict with the individual’s sense of identity (Gibbs, 1987), and result in negative psychological outcomes (McCreary and Slavin, 1996). Healthy and secure sense of identity is critical to avoid psychological problems and to improve one’s academic achievement (Berzonsky and Kuk, 2000). This suggests that there may be a relationship between identity formation and academic success and that identity formation has a direct influence on students’ success and/or failure when pursuing a degree in higher education. Obviously, racial identity development should be considered a significant factor in higher education (Fitzpatrick and Shook, 1994). Spencer (2001) indicated the formation of racial identity may constitute an important aspect, which may contribute to academic achievement for many students in higher education.

Specifically, the purposes of this study are to:

1. Attempt to understand the status of the Taiwanese Aboriginal junior college students’ racial identity development.

2. Attempt to understand the impact of Taiwanese Aboriginal junior college
students’ racial identity development on their academic outcomes.

3. Attempt to understand the condition of Taiwanese Aboriginal junior college students’ social capital status.

4. Attempt to understand the impact of Taiwanese Aboriginal junior college students’ social capital on their academic outcomes.

5. Attempt to understand the condition of Taiwanese Aboriginal junior college students’ psychological adjustment.

6. Attempt to understand the condition of Taiwanese Aboriginal junior college students’ psychological adjustment on their academic outcomes.

7. Attempt to understand any relationships among racial identity development, social capital, and psychological adjustment and an expected grade among Taiwanese Aboriginal junior college students.

Preliminary Hypotheses

This descriptive study examined Taiwanese Aboriginal students in higher education in the predominant Han culture. Hypotheses include:

Hypothesis 1: In the five-year junior colleges in Taiwan, most Taiwanese aboriginal students’ racial identity developments are in the position of internalization stage.

Hypothesis 2: In the internalization stage, a higher sense of perceived integral racial identity experience results in higher self-esteem, social support, academic aspiration, academic orientation, academic effort, and lower stress.

Hypothesis 3: In the pre-encounter stage, the factor of perceived integral racial identity
does not act as a factor to affect indicators of psychological adjustment and academic outcome.

*Hypothesis 4:* Factors among psychological adjustment are mutually respectively correlated with each other.

*Hypothesis 5:* Adaptive social network is positively related to racial identity development.

*Hypothesis 6:* Adaptive social network is positively related to psychological adjustment.

*Hypothesis 7:* Adaptive social network is positively related to a better academic outcome.

*Hypothesis 8:* Adaptive psychological adjustment is positively related to the expectations of a better academic outcome.

*Hypothesis 9:* Adaptive racial identity development is positively related to psychological adjustment.

*Hypothesis 10:* Adaptive racial identity development is positively related to a better academic outcome.

**Definition of Terms**

In this study, the following terms are operationally defined.

1. *Taiwanese Aboriginal Students*

   Ancestors of Aboriginal Taiwanese lived on Taiwan before Ch’ing dynasty (1644-1912). According to the Taiwanese Aboriginal Identification Law of the
Ministry of The Interior (2001), one is an Aboriginal Taiwanese if a student’s father or mother is Aboriginal Taiwanese, and if one recognizes and registers his or her Aboriginal identity.

2. Han Students

Non-aboriginal students have Chinese lineage whose ancestors have migrated from main-land China to Taiwan.

3. Predominant Han College or University [PHCU]

Predominant Han colleges and universities are those institutions that enroll a majority of Han students.

4. Five Years Technical Junior College in Taiwan

A technical college system in Taiwanese higher education, this system provides associate degrees after five years of learning; and students’ ages from 16 to 20 after they graduate from junior high.

5. Two-Year Technical College

A technical college system in Taiwanese higher education, this system provides associate degrees after two years of learning. Students’ ages vary from 19 to 20 after they graduated from high school.

6. Social Capital

Social capital refers to the actual or potential resources linked to a durable network and the inclination that arises from these networks to do things for each other (Putnam, 2000). In this study on the issue of social support, one of the networks, students are asked to identify significant adults in their lives for
detailed information.

7. Racial or Ethnic Identity

While specific differences characterize each of these terms, in this study these are used in a broad sense to describe individuals having different racial characteristics or ethnic cultural differences from the dominant culture. As used in this study is linked to descriptions of racial identity in the literature and to the term racial identity as used in paper

8. Academic Outcome

Academic outcome is identified by expected grade, which is provided by student’s self-reported GPA compared with other classmates. Schiel and Noble (1991) indicated that a self-reported grade has sufficient accuracy when studying the educational development of groups of students. In this study, a student’s academic outcome is defined as expected grade.

Limitation and Delimitation

Limitations

In Taiwan, limited research has focused on the relationships among student’s social capital, racial identity development, psychological effects, and academic achievement; therefore, most of the theories, models, and concepts, which deal with minority and majority students’ issues, were applied from the studies in the United States. The cultural differences between Native Americans and other minority groups and Taiwanese should be carefully considered before applying these concepts, models,
and theories into this study. To prevent negative effects from the cultural differences, this translated information has to be reconsidered in the Taiwanese context.

**Delimitations**

1. Twelve aboriginal tribes in Taiwan are officially recognized. In this research distinctions among tribes were not discussed. The focus will be placed on all Taiwanese aboriginal Five-Year Junior College students but not on an individual tribe.

2. In consideration of different school cultures, policies, and budgeting toward Taiwanese Aboriginal students among different colleges systems, a pool of schools with similar characteristics within the Five-Year Junior College system will be selected for the sample of this study.

**Significance of the Study**

After viewing the Data Base System of Taiwanese educational journals, and National Dissertations and Thesis, it was found that only very limited research has examined the relationship between Taiwanese Aboriginal college students’ demographic information and their racial identity development. However, no studies have been reported on the relationships and interactions among the social capital, racial identity attitudes, psychological functioning, and academic achievement of Taiwanese Aboriginal post-secondary students.

By presenting this pioneering study on the relationships among Taiwanese Aboriginal junior college students’ potential social capital, racial identity development,
psychological adjustment, and school outcome, this study should serve as reference in offering valuable information for those who work with Taiwanese aboriginal students on the institutional campuses and for the authorities concerned.
CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This study was designed to examine and describe the relationships among the Aboriginal Taiwanese junior college students’ social capital, racial identity development, psychological adjustment, and academic outcomes. This literature review provides a comprehensive overview of theories, concepts, models, and the relationship among them.

In an effort to address Taiwanese Aboriginal junior college students’ successes and failures in educational pursuits, this chapter begins with the broad notion of the sense of self-concept, which subsequently focuses on the theories of self-identity and racial identity. These notions apply to people’s essential tasks of psychosomatic development regarding the subjects of study on specific racial identity theories. These racial identity theories guide the literature review and provide the knowledge to be adopted and applied to Taiwanese Aboriginal junior college students’ adaptation to higher education. Furthermore, this chapter extensively displays the information of the relationship between racial identity and two outcome areas: psychological adjustment and academic achievement. Finally, literature reviews have been developed to assess the relationship between Taiwanese Aboriginal junior college students’ psychological adjustment and their academic achievement.

In addition, for further understanding, Taiwanese Aboriginal junior college
students’ racial identity development has been affected by another factor concerning students’ social capital. This chapter will not only review the literature on the conceptualization of students’ social capital but also will examine the relationship among the Aboriginal Taiwanese junior college students’ perceived social capital and other variables. For example the literature review on student development identifies social capital as an exogenous factor that relates to racial identity, psychological adjustment, and academic achievement. This literature review is divided into the following: (a) self-concept, (b) self-identity, (c) Racial Identity Development Theories and Models, (d) Racial Identity and Psychological Adjustments, (e) Psychological Adjustments and Academic Achievement, (f) Social Capital, (g) Social Capital and Racial Identity, (h) Social Capital and Psychological Adjustment, (i) Social Capital and Academic Achievement, (j) Variables Investigated and Preliminary Conceptual Framework, (k) Critique of Past Research.

Self-Concept

By self, we generally feel the conscious reflection of one's own being or identity, as an individual separate from other or from the environment (Huitt, 2004). In the event of developing self-concept, many conceptual theories and models have been proposed throughout the years.

From the cognitive aspect, self-concept refers to an individual’s own thought and feelings. In our life span, we continue developing and maintaining our self-concept through the process of experience and reflecting on life. Purkey (1988) indicated that we generally refer to the totality of a complex, organized, and dynamic system of learned experience, beliefs and attitudes that an individual holds to be true about their
personal existence.

In accordance with social learning theory, the individual repetitively interacts with the environment and self-concept is formed through the process of taking action. We reflect on what we have done and can do in comparison to our expectations and others’ and to the characteristics and accomplishments of others (Brigham, 1986; James, 1890). Thus, self-concept is not innate but is built and developed by the individual, who interacts with the environment and reflects on his or her behavior.

Through the process of actively examining oneself, the self-reflection of an individual often leads to new and dynamic ways for self-concept to change. Franken (1994) stated that there is a growing body of research which indicates that it is possible to change the self-concept. Self-concept change is not something that people have the will to change mentally, but rather it depends on the process of self-reflection. Through self-reflection, people often come to view themselves in a new, more powerful way, and it is through this new, more powerful way of viewing themselves that people can develop eventually.

Self-Identity

A number of taxonomies of theories and models of students’ self-identity have been developed. These theories and models vary in the degree to which they subscribe to certain characteristics or features of the developmental process. In viewing self-identity theories and models of students there has been a general movement toward greater differentiation, integration, and complexity in the individual’s thinking, values, and behavior.

Several taxonomies, each with its own merits, have been proposed for
developmental theories or models of college student change (Drum, 1980; Knefelkamp, Widick, and Parker, 1978; Learner, 1986; Moore, Upcraft, 1990; Rodgers, 1990b; Strange and King, 1990; Widick, Knefelkamp, and Parker, 1980). This chapter reviews two clusters of theories and models in self identity of college student: psychological theories and cognitive–structural theories.

**Psychological Theories**

The families of psychological theories view individual development as a process that involves the accomplishment of a series of development tasks. Over an individual’s life span, he will confront a series of development challenges that require some form of response to his current identity development status. Most psychological theories declare that the individual’s success in resolving each task can sequentially affect the resolution of consecutive tasks and, consequently, the rate and extent of individual’s psychological development (Rodgers, 1989). The followings are some proven psychological theories this study is based on.

1. **Erikson’s Development of Psychosocial Theory**

   There are three elements in the work of Erikson (1959, 1963, 1968) whose research has greatly influenced most psychological theories of college student development. The first is Erikson’s articulation of the “epigenetic principle,” that indicates “anything that grows has a ground plan, that out of this ground plan the parts arise, each part having its time of special ascendancy, until all parts have arisen to form a functioning whole”(Erikson, 1968, p. 92). The notion of this principle implies that it is sequential, age-related, biological, and psychological development to the way that the extent of development of particular character is formed by the individual’s personal environment.
The second influential element in Erikson's Psychosocial Development is represented by eight stages in the life cycle of humans. Each stage is characterized by a psycho-social crisis, which, if resolved in a healthy manner, results in the emergence of ego strengths, or virtues which enhance the person's quality of life and ability to adjust to the social order.

Eriksson’s third important influence to psychosocial theory development, relating to college students’ psychological development, is in his fifth stage of proposition that is the most crucial stage of identity vs. identity confusion. During this crisis stage (students about age 13 to 20), these adolescent students are maturing in the transition from childhood to adulthood. The young person will acquire self-certainty to deal with self-doubt (crises) in his/her psychological development.

(2) Chickering’s Seven Vectors of Student Development
On the study of college student development of self-identity, there are no other psychological theorists who have had a greater influence than Chickering (1969). In order to deal with the change of self-identity, Chickering (1969) proposed a seven “vector of development” which synthesized and integrated the abundant evidences on college students’ change in identity. Also these vectors in Chickering’s theory are systematically labeled “because each seems to have direction and magnitude even though the direction may be expressed more appropriately by a spiral or by steps than by a straight line” (p. 8). Chickering’s seven vectors are:
Vector 1: Achieving Competence
The first of the vectors is “Achieving Competence,” which reflects some of the most basic skills; a college student is expected to have. Developing competence can take a combination of three different forms: intellectual, physical, and interpersonal competence. The intellectual competence encompasses the development of the mind educationally. The physical competence is the entailment to be able to take care of oneself through exercise and wellness. The interpersonal competence involves working well with others, leadership, and good communication skills.

The sense of intellectual competence is essential toward increased competence in physical and manual skills, and in social and interpersonal relations of a college student. In one’s college years, the progression is toward the growth in a student’s “sense of competence, the confidence one has in one’s ability to cope with what comes and to achieve successfully what [one] sets out to do” (Chickering, 1969, p. 9). In his publication of Education and Identity, Chickering had also expressed that both intellectual and interpersonal competence may particularly be given more attention in the development of minority group members and women (Thomas and Chickering, 1984).

Vector 2: Managing Emotions

At the second vector of "managing emotions," college students begin to grow to be aware of their emotions and seek to regulate their emotions to create maximum behavioral outcomes.

During college years, students will replace from parents and society’s strict and reflexive control to be internally adopted behavioral standards and controls. According to Chickering (1969, p. 53), “the task is to develop increasing
capacity for passion and commitment accompanied by increasing capacity to implement passion and commitment through intelligent behavior.” To this capacity, it is particularly important to the salient of cultural change in students’ initial formulation of their model and their formation of cultural lust and hate (Thomas and Chickering, 1984).

Vector 3: Developing Autonomy

The third vector of “Developing Autonomy”, students are "moving through autonomy toward interdependence," seeking to be more self-sufficient, and self-directed; thus, maintain a moderate level of interdependence with friends, family, and other associates.

At this level, the development of autonomy competence leads the college students to disengage from parents’ inculcation and seeks for approval and reassurance as the individual confronts the paradox of personal independence and interdependence. Thus, Chickering (1969, p. 12) deemed autonomy as “the independence of maturity …it requires both emotional and instrumental dependence, and recognition of one’s interdependence”.

Vector 4: Establishing Identity

The fourth vector is "developing mature interpersonal relationships." At this vector, establishing and maintaining healthy interactions with other individuals is emphasized.

Among Chickering’s seven vectors, vector four of “Establishing of Identity” is a pivotal one. The development on the vector of establishing identity based on the growth along the competence, emotions, and autonomy vectors, and this vector will foster and facilitate the outcome changes along the
remaining three vectors. Chickering (1969, p. 80) designated that identity is a “solid sense of self”, and one that may clarify their conceptions of their physical characteristics, personal appearance and of appropriate sexual roles and behaviors.

Vector 5: Freeing Interpersonal Relationships

The fifth vector is "freeing interpersonal relationships." In this vector, college students’ identities have structured, and they are more capable to handle interpersonal relationship in the state of greater openness and acceptance of cultural diversity.

In this vector, Students’ interaction with others emerges “increased tolerance and respect for those of different backgrounds, habits, values, and appearance, and shifts in the quality of relationships with intimates and close friends” (Chickering, 1969, p. 94).

Vector 6: Developing Purpose

The sixth vector is "developing purpose." Students will expand competencies, identity, and interpersonal relationships, and develop future direction and purpose.

A college student at this vector of “developing Purpose” requires the integrate priorities to confirm and guide one’s own life-styles choices, recreational and vocational interests, vocational plans and aspirations in the sense of future direction and purpose. Development along with the front five vectors occurs as the individual develops answers not only to the question “Who am I?” but also to “Who am I going to be?” Not just “Where am I?” but “Where am I going?” (Chickering, 1969, p. 16).
Vector 7: Developing Integrity

The seventh vector is "developing integrity." In this vector, the focus is on developing an ethical and moral framework that serves students to determine the values they wish to live by. The college student in this vector relies on his or her beliefs to begin the formation of the value system and guidelines. Chickering (1969, p. 17) addressed “the clarification of a personally valid set of beliefs that have some internal consistency and that provide at least tentative guide for behaviors”. As students develop along each vector they apprehend more complexity of perceptions and behaviors that are integrated into their established self identity.

(3) Marcia’s Ego Identity Status model

Marcia’s Ego Identity built on Erikson’s (1956, 1963, 1968) Psychological development theory and development stage five during which the central “crisis” of adolescence was toward “Identity vs. Identity Confusion”. The formation of “ego identity” is developed in a dynamic process; James Marcia (1965, 1966) showed two psychological tasks in his model. The first is based on Erikson’s sense to obtain the resolution in “Identity vs. Identity Confusion”. The second task engaged in making of occupational and ideological commitments.

In Marcia’s two juxtaposed psychological tasks, four different responses were proposed to the need for ego identity and formation. “Identity-diffused” individuals are not in the position of experiencing crisis in searching for an identity nor having commitments to the state of any occupational, ideological,
or value areas. “Foreclosed” individuals still have not endured any crisis but have committed and confined to their parents’ behavioral standards and controls without questions and examinations. “Moratorium” individuals have suffered confusion and crisis, distinguishing and evaluating possible alternatives from identity-diffused, but they still have stayed in the unformed identity status. “Identity-achieved” people emerged from a crisis and possess commitments to occupational, political, sexual, and religious roles.

Theories and Models of Cognitive Structure

Jean Piaget (1964) is a significant progenitor of cognitive-structural theories and models of student development, all research in this area owes its origins to his contributions. Whereas psychological theories and models highlight the content of development, cognitive theories and models focus on describing the process of changes and giving meaning to people’s worlds. “One describes what students will be concerned about and what decisions will be primary; the other suggests how students will think about those issues and what shifts in reasoning will occur” (Knefelkamp, Widick, and Parker, 1978).

In cognitive-structural theories, the change of the individual’s development involves a chain of stimulus and response. The individual’s current cognitive structure will conflict with new information and experience (stimulus) that may encounter either of two processes: assimilation or accommodation. And all cognitive-structural theories, in common, posit a series of hierarchal stages, which the successful attainment of lower stage being a prerequisite to move progressively on to the next upper stage. In the research literature, William Perry and Lawrence Kohlberg are both prominent cognitive-structural develop mentalists. The theories include the following points:
(1) Perry’s Scheme of Intellectual and Ethical Development

As with clinical observations by an intensive series of interviews on Harvard College students, William Perry (1970, 1981) sought to categorize conceptually the development in the “structures which the students explicitly or implicitly impute to the world, especially those structures in which they construe the nature and origins of knowledge, of value, and of responsibility” (1970, p. 1). Perry’s sequence stage development model stated that “manifests a logical order—an order in which one form leads to another through differentiations and reorganizations required for the meaningful interpretation of increasingly complex experience” (1970, p. 3).

On the basis of Perry’s scheme, he conceptualized the developmental sequence of original positions into four major clusters: Duality, Multiplicity, Relativism, and Commitment. Dualistic thinking is in the mode of either/or thinking. On the same phenomenon, alternative views or different perspectives in learning process may create discomfort and confusion. In multiplicity, the thinker no longer recognizes answers as right or wrong and believes that all opinions are conceptualized as having comparable claims on correctness. The relativistic thinker recognizes multiplicity of the world and is lead to realize that some opinions held less value for them and critiqued their own ideas and those of others. Therefore, the relativistic thinker understands that all positions are equally valid and that “knowledge is contextual and relative” (King, 1978, p. 38). In commitment, thinkers have conceptualized and developed a completed belief system or identity based on their relative thinking (Evans, Forney, and Guido-Dibrito, 1998).
(2) Kohlberg’s Theory of Moral Development

Lawrence Kohlberg developed a theory more narrowly on moral development than Perry’s theory that tried to explain cognitive and ethical development (Kohlberg, 1969, 1984; Kohlberg, Levine, and Hewer, 1983). Kohlberg’s theory sought to delineate the nature and sequence of progressive changes in cognitive processes when individuals are faced with a moral dilemma. His principle focused on modes of reasoning of cognitive process (thought to be universal) but on the content of moral choice (social and cultural determination).

Kohlberg’s cognitive “stage” theory of moral development identified six stages categorized into three levels: preconventional, conventional, and postconventional.

Level I: Preconventional

The pre-conventional level one contains two stages: stage 1 and stage 2. Preconventional reasoners at stage one is in the obedience and punishment orientation. They do not understand the concept of societal rules but their physical consequences decide whether behavior is “good” or “bad”. At stage two of the natively egoistic orientation, “right” actions are self-focus to satisfy ones’ needs. And other’s need is not deemed as a sense of other’s right but as the bargain of reciprocity (thought to be “you scratch my back and I will scratch yours”).

Level II: Conventional

The conventional level two contains two stages: stage 3 and stage 4. At stage three, the expectations of others (for example, parents and peer groups)
are acknowledged to please others by a need for approval. The conventional thinker has developed a sense of social norms to consider the intention behind the action. Kohlberg’s cognitive theory at stage four is authority as social obligations emerge. Kohlberg (1975, p.571) described this stage as the “‘Law and Order’ Orientation”. “Moral judgments are based on concerns to maintain the social order and to meet the expectations of others. Law is seen . . . as necessary to protect and maintain the group as a hole” (Nucci and Pascrella, 1987, p. 273).

Level III: Postconventional

The pre-conventional level three contains one stage: stage five. At stage five, social contractual legalistic orientation, duty is acknowledged as a social contract to avoid violating the will of majority. Stage five reasoners have developed the mutual obligation within a democratically established order. Behavior at the highest level of stage five, a post-conventional reasoner does not believe the social rules but the broad human right by principles thought to be logical and universal. “Highest value [is] placed on human life, equality, and dignity” (Kohlberg, 1972, p. 15).

The theories, models, and concepts referenced in the self concept and self identity development stages help serve as a guideline to further study the racial identity as well as a foundation of the conceptual framework within the scope of this study.
Racial identity development theories and models

Racial identity represents a significant concept in academia such that many theorists have developed many models of racial identity development in an effort to better recognize and understand individual and racial differences in identity development (Akbar, 1979; Cross, 1971; Gibbs, 1974; Milliones, 1980; Ogbo, 1993; Spencer, 1999; Umana-Taylor, 2004). In order to address the issue of racial identity development, new theories and models have emerged in the recent literature that help researchers understand the experiences of these diverse students during their college years. The racial identity theories and models include the following:

1) Multi-Group Racial Identity Development

Building on the influence of specific cultural heritage, multiple ethnic and racial groups have diverse languages, customs, and values, Sue and Sue (1999) addressed the fact that “Most would agree that Asian Americans, African Americans, Latino/Hispanic Americans, and American Indians each have a distinct cultural heritage that make them different from each other” (p.123). And the word multi-group is to look at the broad concept of being from minority group versus those theories, which have been developed to describe certain group of race. The following theories and models of racial identity development can provide a basis for explaining the broad concept in individual differences.

2) Atkinson, Morten, and Sue’s Model of Minority Identity Development (MID)

Atkinson, Morten, and Sue (1979) reported the minority identity development (MID) model concerned the identity development issues and recognized the process of identity development of many groups of individuals. Sue and Sue (1990) refined the MID into R/CID (racial/cultural identity development), which is recognized as a best
conceptual framework for researchers of this field.

The R/CID model (figure 2.1) includes a five-stage progression of development. The process of R/CID in the five stages is from stage 1, conformity to the majority culture as superior to his or her own, is that individual seeks to fit in the culture and to hold everything in the majority culture. Robinson and Howard-Hamilton (2000) expressed that “for people of color, this is a fatiguing stage as tremendous energies are used to resolve conflicts toward the self, the same racial group, and the group in majority” (p. 82). Stage 2 of dissonance occurs when the traumatic event push individual to reconsider previously held beliefs. Stage 3 of awareness and development has a strong sense of self as an individual and group. In this stage, the individual feels that the majority culture is the oppressor and is responsible for any inequality suffered by the minority culture. Stage 4 of inspection is a personal reflection from the movement away from group identity and anger toward culture of majority. Sue and Sue indicated “The individual begins to discover that this level of intense feeling is psychologically draining and does not permit one to really devote more crucial energies to understanding themselves or to their own racial/cultural group” (p. 135). Stage 5 of integrative awareness can incorporate aspects of his or her culture and others in a well defined sense of individual.
The attitude of self-appreciating to the group affiliation can now demonstrate “selective trust and liking for members of the dominant group who seek to eliminate oppressive activities of the group” (Sue and Sue, 1999, p. 137).

Figure 2.1 The Behavioral Patterns of multicultural competence model (Sue and Sue, 1999)

(3) Phinney’s Ethnic Identity Development

Phinney (1990, 1992) proposed a mode of ethnic identity development that is based on general identity model such as Erikson (1968), Marcia (1980), and Atkinson, Morten, and Sue (1979, 1989). And she considered her model applicable to cope with all ethnic groups in the process of ethnic identity development. Phinney indicates that ethnic identity was closely involved in the process of resolving two basic conflicts that occur as a result of their membership in a non-dominant group. First, non-dominant group members must resolve the treatment of stereotyping and prejudice perceived from the majority culture toward non-dominant group individuals, thus bringing about a
threat to their self-concept. Second, by the dissonance of values between minority and majority, most ethnic minorities must resolve the clash of value systems and lead minority members to negotiate and form a bicultural value system. Though, Phinney’s three-stage model closely resemble Marcia’s four-part model of identity development. However, her model is helpful in triggering the consciousness of ethnic identifying in outlining threats to ethnic self-concept.

The first stage of her model is an unexamined ethnic identity when individuals require exploring beliefs and attitudes toward their ethnicity. At this point in time, if the result of this exploration is not to accept what they have heard from others, individuals will gradually result in lower loyalty and kinship to recognize their ethnicity as an important part of who they are as individuals in society and thus lead to the position of ethnic diffusion.

The second stage in Phinney’s model is ethnic identity search/moratorium. Individuals in this stage become more interested in their own ethnic heritage. To the values displayed by significant others in their surrounding, they will examine accepted information to sustain and reflect about what it means of being a member of their ethnic group.

Ethnic identity achievement is the third stage that makes the commitment to a group membership. Individuals develop a bicultural identity after achieving a level of comfort with who they are in society.

(4) Myers, Speight, Highlen, Cox, Reynolds, Adams, and Hanleys’ Model of OTAID

The model of optimal theory applied to identity development (OTAID) is one to describe the process in which individual moves from a fragmented worldview to a more complete one; this change leads individual connected to the greater community (Myers
The theory considers people with multiple identities, and highlights that spiritual development is an integral part of identity development. The model of OTAID included six developmental phases in illustrating the process of identity development.

Phase 0: Absence of Consciousness — Individuals lack awareness of being.

Phase 1: Individuation — The world is the way it is. Individuals lack awareness of any view of self other than the one to which they initially introduced.

Phase 2: Dissonance — I’m beginning to wonder who I am. Individuals affectively explore those aspects of self that may be devalued others.

Phase 3: Immersion — I focus my energy on people like me. Individuals fully embrace others like themselves who are devalued.

Phase 4: Internalization — I feel good about who I know I am. Individuals have effectively incorporated feelings of worth associated with salient aspect of self, resulting in an increased sense of security.

Phase 5: Integration — With my deeper understanding of myself, I am changing my assumptions about the world. Individuals’ sense of self has developed to a stronger place of inner security so that relationships and perceptions of others reflect this degree of inner peace.

Phase 6: Transformation — It is I. The self is defined toward a sense of personhood that includes the ancestors, those yet unborn, nature, and community.

(Myers and others, 1991, p. 59-60).

These literature reviews on racial identity development begins with broad theories of self-concept and self-identity that apply to multiple ethnic or racial groups and then specifically focuses on theories to a certain ethnic and racial groups.
The federal government recognizes more than 481 tribes in the United States, and each tribe may have different customs and languages. Racial identity development among Native Americans is based on the family, extended family, kinship, or clan affiliation, and lead to form their unique culture and rear the core value of communal concerns, responsibility for family and friends, cooperation, and tribal identification. In the predominant Anglo society, these values can conflict with the majority of individualism, competitiveness, and amassing property. Deloria (1992) noted that in spite of the differences in tribal structure and geographical location, the core value of an Indian tribe is intrinsic to resist enculturation, even though the members of this ethnic and cultural group has moved away from their home community.

Native American students in the predominant White colleges must interact with the White dominant values system, the clash between Native Americans and Anglo values may result in the deleterious effects from such conflicts.

LaFromboise, Trimble, and Mohatt’s Five Category Indian Identification

According to residential patterns, level of tribal affiliation, and extent of commitment to maintaining tribal heritage, LaFromboise, Trimble, and Mohatt (1990) classified five categories of Indianness:

Traditional - These individuals generally speak and think in their native language and know little English. They observe “old-time” traditions and values.

Transitional - These individuals generally speak both English and the native language in the home. They question basic traditionalism and religion yet cannot fully accept dominant culture and values.

Marginal - These people may be defensively Indian but are unable, because of
their ethnicity, to live the cultural heritage of their tribal group or to identify with the dominant problems.

Assimilated - Within this group are the people who, for the most part, have been accepted by the dominant society. They generally have embraced the dominant culture and values.

Bicultural - Within this group are those who are, for the most part, accepted by the dominant society. Yet they also know and accept their tribal and traditions and culture. They can thus move in either direction, from traditional society to the dominant society, with ease [p. 683].

(7) Horse's Indian Identity

Horse (2001) described a brief five items of Indian identity in terms of “factors that influence our individual and group consciousness as either tribal people or as American Indian” (p. 100). Five factors affect consciousness:

i. How well one is grounded in the native language and culture:

ii. Whether one’s genealogical heritage as an Indian is valid;

iii. Whether one embraces a general philosophy or worldview that drives from distinctly Indian ways, that is, old tradition;

iv. The degree to which one thinks of him or herself in a certain way, that is, one’s own idea of self as an Indian person; and

v. Whether one is officially recognized as a member of a tribe by the government of that tribe [p. 100].

(8) Ryan and Ryan's Five Levels of Indianness

The Ryan and Ryan (1989) model describes five types or levels of “Indianness”. The idea of this widely used model is that an Indian person at any of the five levels of
acculturation cannot be equally mentally healthy. Since the Indian person is labeled as “marginal” as not fully relate in either Indian or non-Indian society, not socializing appropriately with either Indian or non-Indian people, not enjoying and acting in either Indian or non-Indian culture, and not recognizing as a member in either Indian or non-Indian racial groups.

(9) Parham and Helm’s Model of Racial Identity

In assessing racial identity development, Parham and Helm’s Model (1985) is the most widely adopted one, and was derived from Cross’ (1971) nigrescence theory. They examined whether racial identity attitudes were related to self-actualization and affective states of Black students, and highlighted four stages of racial identity development, Preencounter, Encounter, Immersion/Emersion, and Internalization to associate to feelings of inferiority, anxiety, anger, or self acceptance. These stages include:

Stage 1: Preencounter

In this stage the individual’s worldview is dominated by Euro-American fame of reference as he or she thinks, acts, and behaves on being assimilated and integrated into the dominant-white world. The black person in the Preencounter stage neglects race component to his self-identity, and also denies devalues Blackness. In addition, Paraham and Helms (1985) pointed a black person in this stage acknowledges and naturalizes to the dominant white culture, and denies the existence of racism.

Stage 2: Encounter

Individual in stage 2 involves some experience due to a shocking personal or social event (for example, the assassination of Martin Luther King, Jr.) that triggers a reevaluation of initial views and belief in understanding the blacks’ position in the
world. The shaken self-image drives Black person examine his/her views about race. In addition, the individual recognizes the worldview of racism is inappropriate, also begins to develop aspects of a new identity and appreciate Blackness. Then, the individual starts to transition toward greater accessibility to new conceptualizations of identity (Palm and Helms, 1985).

**Stage 3: Immersion/Emersion**

Following the encounter experience, the individual seeks to eliminate all old perspective for a new understanding of self as Black (Black hairstyles, wears ethnic clothing, associates only with Blacks, etc.). In this stage, the individual has general anger toward white and idealizes that everything of value must be black. The person’s ideology is to devalue everything white or relevant to Whiteness, and value everything black or relevant to Blackness (Palm and Helms, 1985).

**Stage 4: Internalization**

In this stage, individuals characterize a resolution of racial identity conflicts and become comfortable with racial identity. They internalize and obtain a greater appreciation to be acknowledged for being black and more aware of what being Black means than generalizing their anger toward all Whites. The individual in this stage can recognize and appreciate other ethnic heritages, and percept more flexible in his or her ideology or thinking (Palm and Helms, 1985).

On the basis of Cross’s (1971) five sequential stages theory in racial identity development, Parham and Helms’ (1985) developed the Racial Identity Scale (RAIS) assessing racial identity development. Helm (1990) applied Black Racial Identity Attitude Scale (RIAS-B) to test racial identity status of middle-west American college students. This scale is the most frequently adopted instrument for measuring minority
students’ standings of racial identity development.

With the guidance of the ample concepts, models, and theories previously mentioned, they will contribute in the construction of a specific framework of Taiwanese aboriginal college students in this study.

Racial Identity and Psychological Adjustments

Life in Taiwan is dominated by Han’s values. The influence from Han dominant society is racism that often neglects Aboriginal Taiwanese racial identity development and psychological adjustment. Aboriginal Taiwanese are often not exposed to their contribution to Taiwanese history nor to the struggles of their own communities. Although, in education, Aboriginal Taiwanese cultural heritage is rendered invisible, their racial identity may have incorporated many stereotypes form the Han dominant society and the media of who they are and what they should be. Hamamoto (1994) suggested that these images of minority serve to perpetuate “psychological dominance” (Baker, 1983, p. 35).

Despite recent research on Taiwanese adolescents’ racial identity development (Cho, 2004; Chen and Liu, 1999; Huang, 1999; Sun, 1997) and on their psychological adjustment (Hsu and Li, 2002) in Taiwanese higher education, empirical studies of the relationship between racial identity and psychological adjustment regarding perceived stress, social support, self-esteem, or other factors influencing Aboriginal Taiwanese students’ mental health have hardly been found. Due to limited research on this topic in Taiwan, this research will infer, to the extent possible, theoretical perspectives on the condition of minorities from the United States for testing in Taiwanese higher education.
Racial identity formation represents a critical task for African American students. Researchers have looked at the effects of racial identity and its relationship of African American psychology adjustment. As an African American in predominantly white colleges and universities (PWCU’s), African American students are less likely to meet, and maintain positive ethnic identity (Wilson and Constantine, 1999). The impression of not having a positive view of African self may hardly improve self-esteem and psychological competence. Thus, Researchers have integrated racial identity as a construct of identifying depression, self-esteem, self-concept, and psychological functioning among African American populations (Arroyo and Zigler, 1995; Carter, 1991; Hall, 2001; Munford, 1994; Verkuyten and Lay, 1998).

In order to delineate Asian Americans who respond to the value of identifying oneself as an Asian American to the racial oppression, it is necessary to refer to one’s sense of identification with one’s original culture on a shared sense of cultural markers, such as traditions, language, history, etc. Chickering and Reisser’s (1993) model of psychological development can be helpful in coping with the factors associated to the manner in which Asian Americans respond to and internalize race-related societal matters into their racial identity and psychological adjustment.

In this model, developmental tasks are presented as seven core issues and challenges that Asian college students may encounter in the dominated Western culture. Since the traditional Asian familial and cultural values of collectivism, interdependence, placing the needs of the family above the self, interpersonal harmony, and the difference to authority often contradicts those of the dominant Western society (Kim, Atkinson, and Yan, 1999). As for Asian American students, the dominant White culture may exert opposing forces on their racial identity developments and psychological
adjustments. Some researchers indicated that Asian Americans are influenced strongly in their racial identity by others (Leong, 1985; Yeh and Huang, 1996), so external influences may have a greater impact on Asian American students’ racial identity and psychological adjustment. In order for Asian Americans to perceive and develop positive and healthy racial evaluations, it may be essential to receive validation from other Asian Americans about the racial aspects of themselves. Otherwise, they may internalize such negative racial messages and diminish their positive racial identity development and psychological adjustments.

A recent national report (O’Brien, 1992) indicated that American Indians continue to meet with limited successes in higher education, few of them graduate and many drop out of their chosen programs in colleges and universities. Sanders (1987) noted that American children felt isolation, rejection, and anxiety as they confront the incompatibility of their cultural value system with their Anglo-American classmates. Although many Native Americans have moved away from their home community, Native Americans as members of ethnic or cultural groups have resisted enculturation more than any other groups (Deloria, 1992).

Sanders indicated that Native American K-12 levels students face attacks on their self-esteem, family styles, and racial identity. As well as the few Native American students who have attended post secondary education systems confronted by the stress endured by de-culturative forces. Adding to the emphasis of cultural conflicts, surveying data indicated that Native American students face a number of psychological coping and adjustment problems. Beiser and Attneave (1982) suggested that alcohol problems were possibly the major cause to the high rate of utilization of mental health treatment in this population. Oetting, Beavais, and Edwards (1988) survey of 3,000
high school students showed that marijuana, inhalants, stimulants, hallucinogens, and sedatives were been used at significantly higher rates than other ethnic groups. In short, the study of Taiwanese aboriginal students can be further carried out with better understanding how Native American college students function in cultures of origin to relate to their racial identity process and how they also function in host cultures to identify their psychological adjustment.

In order to recognize the effects of racial identity in perceived psychological adjustments, the relationships between racial differences and perceived psychological adjustments of stress, social support, and self-esteem are clearly distinct and described below.

Racial Identity Development and Perceived Stress

Among college students, Smedley, Myers, and Harrell (1993) indicated racial differences in perceived stress. Ford and Goode (1994) defined minority suffered stress as stress linked with being part of minority group. Knowing that racial differences exist in perceived stress implies looking at different vulnerability factors of stress such as threats to racial identity, culture-specific values, and patterns of living.

Minority college students encounter stress in dealing with the conflict of cultural difference, as well as in adapting to the majority culture. Launier (1997) acknowledged that many of the factors of minority students’ stress may be causing negative psychological outcomes of emotional distress, hurt, distrust, and pessimisms. These factors of threats require adjustment strategies to be utilized in buffering the potential psychological effects (Anderson, 1991). And most of the researches have recognized that minority centric cultural identity can buffer negative outcomes related
to stress.

Racial Identity Development and Social Support

The concepts which have not been widely researched are the relationships between social support and racial identity development neither among Aboriginal Taiwanese nor in Native American. However, Wu (1998) reported that Aboriginal Taiwanese college students were subjectively closer to their network supporters—families, friends, neighbors, church, they were tendentious to report higher levels of happiness than their counterparts.

Lee (2004) has examined racial identity development attitudes and perceived family cohesion in Aboriginal Taiwanese high School Students. She indicated that students with higher scores on ethnic identity tend to demonstrate better interpersonal relationships in their families and more adaptive in daily life.

Also, studies assessing racial identity and support groups and associations of off-campus supporters in college students showed that the participants’ friendship network was based on aborigines although they had Han friends. The strategies they used for relationship adjustment was looking for supporting groups and associations (Wu, 2004).

Racial identity development and self-esteem

The relationships between racial identity and self-identity on Africa Americans have been widely documented in the literature reviewed. Many researchers such as Parham and Helm’s (1981), Baldwin and Bell’s (1985), Speight, Vera, Derrickson (1996) reported significant relationships between racial identity development and
self-esteem. Their finding suggested that a strong sense of racial identity determines high level of self-esteem. Also, Rosenberg, et al (1995) indicated that well developed self-esteem may affirm positive attitudes about themselves, and self-esteem in itself as a buffer may be functional against poor psychological health, and negative behaviors.

In Taiwan, the effects of racial identity on self-esteem have been rarely surveyed. However, research obtained from the 321 respondents of sixth and seventh grade Taiwanese aboriginal students in Nantou County by Chang (2000) reported a positive correlation between racial identity and personal identity. Drawing from the conclusion of Erikson’s Psychosocial Development of self-identity, young person acquires self-certainty to deal with self-doubt (crises) in the first four stages; the students were not only affirming a positive attitude about self-identity but also self-esteem. Lee (2004) reported that students with higher scores on racial identity tend to demonstrate higher level of self-esteem in high school students in Taiwan.

Racial Identity and Academic Achievement

Many documented research studies have tied the connections between ethnic identity and academic achievement. Many research studies have shown a positive association between ethnic identity and positive views of education (Phinney and Tarver, 1988; Smith et al., 1999; Taylor et al., 1994). For example African American Students’ racial identity developments may be crucial to an academic achievement, especially those in Predominantly White Institution (PWI’s) (Witherspoon and Thomas, 1997). The high race salience in ethnic identity of students results in significant academic outcomes. Students in the position of cultural acculturation and assimilation will have better academic achievement than those in cultural dissociation and marginal
Psychological Adjustments and Academic Achievement

Self-esteem and Academic Achievement

The conclusion of many documented studies is that academic achievement and self-esteem are positively correlated (Bankston and Zhou, 2002; Lockett and Harrell, 2003; Schmidt and Padilla, 2003; Verkuyten and Brug, 2002). Shavelson and his colleagues (quoted in Elshenawi and Badary, unpublished) also claimed that self-esteem is related to academic achievement and has direct relationship to its physical, emotional and social sides.

But, there are many studies which showed reversed logic that self-esteem does not lead to academic achievement. O'Malley (1976) examined the relationship between self-esteem and academic achievement on the samples of tenth grade students. They showed that academic achievement does not have an independent correlation with self-esteem. In 1986, a group of California state legislators decided they needed some research to back up their claim that low self-esteem was the irrevocable cause behind a variety of problems such as drug abuse, teen pregnancy, and poor academic performance. However, the result showed no correlation between self-esteem and these deviate behaviors.

Stress and Academic achievement

Many researchers found that stress is strongly related to emotional depression, and high levels of stress are also linked to lower academic outcomes. So, suffering from prolonged stress is likely to reduce the efficiency of a person, and such stress in school tends to result in students performing poorly academically. Bell (1995), Dubois and
Felner (1992) and Ganesan (1995) have found that stress contributed significantly to poor academic performance of adolescents.

**Social Support and Academic achievement**

There is a consistent relationship between academic achievement and social support, with higher performing students persisting in their studies to a greater degree than their lower achieving cohorts. The transition to college involves a perceptible increase in stress level in most college students (Fisher and Hood, 1987; Towbes and Cohen, 1996). Social support is one potential buffer of stress (Arthur, 1998). It shows social support may be rather crucial in successful transition to the college environment (Hays and Oxley, 1986), and low perceived social support is related to non-persistence (Mallinckrodt, 1988).

A considerable amount of research has indicated that the presence of parental social support is positively related to college achievement (Cutrona, Cole, Colangelo, Assouline and Russell, 1994). Also, the linkage has been established between negative peer influence and academic outcomes (Berndt, Laychak and Park, 1990; Berndt and Keefe, 1995), a similar link may be established between positive peer influence and academic outcomes (Epstein, 1983).

**Academic Engagement and Academic achievement**

Theoretical development of concept in academic engagement obtained a great deal of attention in the late 1980’s and early 1990’s. In developing the model of academic engagement, Finn (1989), Wehlage et al. (1989), and Newmann et al. (1992) adopted both psychological and behavioral dimensions to measure academic engagement. Johnson et al. (2001) divided the psychological and behavioral components into different aspects of educational experience. They labeled the affective component...
“school attachment” for measuring to what extent students feel embedded in the community of school. Crosnoe (2001) further distinguish attachment from valuing education or academic orientation.

Studies have documented that high levels of engagement lead to higher academic achievement. Engagement Behaviors explained a modest but significant covariance in academic achievement (Roscigno and Ainsworth-Darnell, 1999; Singh, Granville, and Dika, 2002; Smerdon, 1999).

Social Capital

The lineage of concept in regards to social capital has a variety of inter-related definitions, based on the value of social networks. Although the idea of social capital has been approached by all social science fields, the modern usage of the term can be traced back to Jane Jacobs’ work on urban planning in the 1960s. In her article with a reference to the value of networks, she did not explicitly define the term of social capital. The concept of social capital does not reappear until it was adopted by Pierre Bourdieu in 1972, and a clear formulation from his work was better documented in 1984. Pierre Bourdieu (1986) distinguished three forms of capital: economic capital, cultural capital, and social capital. He defined social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (Bourdieu 1986, 248).

Drawing on Bourdieu’s previous research, James Coleman in 1980s’ is credited as being the spark for much of the contemporary debate, which was then significantly fuelled to achieve public awareness in the 1990s’. Coleman (1988) in his discussions
of the social context of education asserted social capital is a relational construct and as providing resources to others through relationships with individuals. He specifically defined social capital by its function (Coleman 1990a) and refers to “an asset that a person or persons can use as a resource. In brief explanations, Coleman (1990b) indicated “Social capital is any kind of social relationship that is a resource to the person”.

Social capital reflects the value of cooperative social activity. The explicit relation on social capital cannot be shaped by individuals acting in separation from one another. Thus, the World Bank defines social capital as "the institutions, relationships, and norms that shape the quality and quantity of a society are social interactions” (World Bank, 2000).

Social Capital and Racial Identity

The relationship between social capital and racial identity is not clearly interpretable based on the available studies; while ethnic behaviors tend to be highly correlated with social capital in some contexts (Bankston and Zhou, 1995). In this paper, I argue that insufficient social capital may lead to unhealthful racial identity development; since, the effects of Taiwanese Aboriginal college students’ social capital status on their racial identity developments should be properly assessed to help student to resolve challenges for their learning in the Han dominant campuses.

Ethnic identification continues to be expressed through individuals’ transnational kinship networks (Goulbourne, 2002). Consequently, Taiwanese aboriginal students utilize founded network and relationships of family/kinship as important social and material factors in defining their ethnic identities. However, for many college students,
the transition from home to a university setting is a time often linked with many challenges associated with psychological adjustment (Paul and Brier, 2001). The clash between Taiwanese Aboriginal and Han values may result in the deleterious effects from such cultural conflicts. Taiwanese aboriginal college students have difficulty establishing or reproducing social relationships in the short term. Alongside the lack of social capital status, Taiwanese Aboriginal college students experienced additional stressors such as stress of cultural differences and lack of social support in the Han dominating student bodies. Moreover, study on racial attitudes in the United States that focus on the impact of context on attitudes indicated those white respondents’ racial hostility increases along with the increases in racial diversity of the area they live in (Glaser, 1994; Huckfeldt and Kohfeld, 1989). Power threat, the explanation of the mechanism behind this relationship, refers to the perceptions that the dominant group is hostile towards minority groups while they fear losing economic and social privileges (Goodhart, 2004).

Under the comparable situation, Taiwanese Aboriginal college students will struggle in forming their healthy racial identities on the basis of insufficient social capital. These issues raise the need for the study of the relationship between ethnicity and social capital in far more nuanced ways.
Social Capital and Psychological Adjustment

Recently, research in sociology and organizational theories have come to emphasize the role of social network in social capital (Adler and Kwon, 1999; Burt, 2000; Lin, 1999a; 1999b). Lin (1999a) adopts social networks as mediators to access and mobilized in purpose of understanding the process of self perception, psychological adjustment, and academic achievement. For example, young people’s social networks have been studied in relation to deviant behaviors (Ennett and Baumann, 1993; Vondra and Garbarino, 1988), self-esteem (Blyth and Traeger, 1988; Feiring and Lewis, 1991), and psychological well-being as related to social support and stress reduction (Blyth and Traeger 1988; Coates 1985; Cotterell 1992). Through investigation of social interaction in the environment contexts, the negative effects of low social capital status on perception of psychological well-being have been established by researchers.

Social Capital and Academic Achievement

In 1960s, Researchers were largely influenced by the civil rights movement and the “War on Poverty” that revealed the extent of educational inequity in the United States (Ornstein, 1974). The relationship between social class of students’ social capital backgrounds and education has been well documented by educators and politicians as the causes of unequal opportunities and results there of. The 1966 Coleman Report was the landmark study of Equality of Educational Opportunity. The results of his study demonstrated a functional relationship between social class of a student body and academic success of the students. Studies on the influence of family background of parental socioeconomic status, which include parents’ education (highest), family structure, and family income, on the academic achievement of
students explain a statistically and practically significant covariance between family background of parental socioeconomic status and academic achievement (Sandra, 2003). Another survey is Calvo-Armengol et al. (2005) which examines social network effects on educational outcomes by method of Nash Equilibrium. They found that increasing centrality by embedded agents in a social network appeared a significant increase in academic achievement.

Variables Investigated and Preliminary Conceptual Framework

The literature review of this study provides the necessary concepts, models, and theories; also describe the relationships among the variables for conducting and forming a conceptual design for this study. Therefore, this study explores the relationships of the Taiwanese Aboriginal junior college students’ social capital as a social embeddedness (the number of members in the social network and their characteristics) to the individual development of racial identity, psychological adjustment, and academic outcome (Figure 2.2). This study also examines and describes the Taiwanese Aboriginal junior college students’ development of racial identity in an effort to understand the characteristics of their stages of racial identity and the potential impact of their identities on psychological adjustment, social capital and academic outcome individually (Figure 2.3). Finally, this research will measure academic outcome which is affected by the individual extent of psychological adjustment, social capital, and racial identity (Figure 2.4).
In sum, the research adopts the variables of social capital, racial identity, psychological adjustment, and academic achievement for conducting and forming the preliminary conceptual framework (Figure 2.5).
Critique of Past Research

Among Aboriginal Taiwanese tribes, racial identity development is based on the family, extended family, kinship, or clan affiliation. Deloria (1992) noted that in spite of the differences in tribal structure and geographical location, the core value of a tribe is intrinsic to resist enculturation, even though the member of this ethnic and cultural group has moved away from their home community.

Taiwanese Aboriginal students in the predominant Han colleges must interact with the Han dominant values system, the clash between Han-Taiwanese and Aboriginal Taiwanese values may result in deleterious effects from such conflicts. Many researchers have acknowledged the debilitating effects of psychological adjustments of stress, social support, and self-esteem; however, not much attention was given to Taiwanese minority students, particularly Taiwanese Aboriginal students’ status of, social support, racial identity, psychological, and academic achievement in higher education. Due to this lack of acknowledgement of the distinction in college experience, the relationship among Taiwanese Aboriginal college students’ racial identity, psychological functions, and academic achievement remains vague.

It appears that very limited research has looked at the relationship between racial
identity development and the perception of stress, social support, and self-esteem among Taiwanese Aboriginal college students. However, Wu (2004) concluded these findings: (1) cultural difference did not have much influence on Taiwanese aboriginal college students to fit in the Han dominant academic environment. (2) Although they had Han friends, Taiwanese Aboriginal college students’ social support of friendship network were based on peer students of aborigines or from schools’ aboriginal societies. (3) Most of the Aboriginal college students had experienced racial discrimination from teachers or classmates in their academic experience. Wu’s study raises the issue as if there were no cultural factor to affect students’ psychological functions. If so why do aboriginal college students still have the feelings of racial discrimination and still look for aborigines’ social support? Cultural difference should have a critical influence on Taiwanese aboriginal college students to fit in the Han dominant academic environment.

On the other hand, Hutnik (1991) found evidence of four strategies of self-categorizations into ethnic minority identity: (a) Assimilation--high identification with the majority group, low identification with the minority group; (b) Dissociation--high identification with the minority group, low identification with majority group; (c) Acculturation--high identification with both the majority and minority group; (d) Marginality--low identity with both the majority and minority group. Among these four categories, students in the status of assimilation and acculturation tend to have more positive learning attitudes and academic achievement to dissociation and marginality; especially acculturation students can not only maintain their racial dignity, but also accept majority’s culture to reach the ideal of cultural integration (Cummins, 1986; Dehyle, 1992). Without a doubt, cultural differences between Taiwanese Han and aboriginal college
students must play an important role to affect Taiwanese aboriginal students’ learning at schools.

Owing to the cultural difference to majority, minorities would develop their unique and functional cultural modes to succeed in the mainstream. Recognition and understanding of minority culture as an integral dimension in their racial identity development and forming their positive psychological adjustments, Tsai (2003) reported that most of the Taiwanese Aboriginal elites graduated from colleges whose racial identity modes belong to the categories of assimilation type and acculturation type.
CHAPTER III

METHODS

Introduction

Aboriginal Taiwanese junior college students, as a minority in the Han dominant main stream, have increasingly become the subject of investigation during recent years in Taiwanese higher education. This chapter describes the methodological procedures utilized for the research. The analysis examines relationships among potential social capital, racial identity development, psychological adjustment, and academic achievement.

In order to present the research design and conceptual frameworks and develop the rationale for the variables selected for investigation, this research called for Taiwanese five-year junior college students to provide information. The participants, instrumentations, operationalization of variables, administration of the instruments, collection of the data, and statistical methods and procedures are discussed in this chapter.

Subjects and Procedures

The study was conducted during November and December 2006, and the participants were Taiwanese aboriginal students at five-year junior colleges in Taiwan. Five hundred questionnaires were distributed to achieve a large enough sample size in order to maintain the accuracy of estimates and to ensure a representative sample. For
constructing the sample frame, Taiwan was divided into four areas (north, middle, south and east areas), and schools were selected in each area for cluster sampling. Twenty Taiwanese aboriginal junior college students were selected from these areas. Five hundred participants were recruited from Taiwanese junior colleges in this study. For protection of human subjects permission was granted for the using of human subjects for research by the University of North Texas Institutional Review Board. The school’s consent was granted by the Dean in each participating school before students were informed. The students’ responses were obtained through letters, which offered consent forms, directions, and questionnaires. Students’ information remains confidential and is not identifiable by anyone but the researchers involved.

Instrumentation

The data for this study were collected by scoring the responses on six instruments which measured Taiwanese Aboriginal junior college students’ potential social capital, racial identity development, academic achievement (expected grade) and their psychological adjustment (stress, social support, self-esteem, and academic engagement). The instruments were designed to gather information on the following: (a) Potential Social Capital Scale; (b) Racial Identity Attitude Scale (RIAS); (c) Multigroup Ethnic Identity Measure; (d) Perceived Stress Scales (PSS); (e) Self-Esteem Scale (RSE); (f) Social Support Scale (SSS); (g) Academic Engagement Scale; (h) Academic Outcome (Expected Grade); also, the information of demographic characteristic will be obtained.

Brief instructions in each questionnaire were provided on how to complete the instrument. The average time required for respondents completing the survey
instrument was about 25 minutes.

The Measure of Potential Social Capital Scale

The potential social capita scale measured respondents’ social support network. The social support network scale is discussed below.

According to Blyth and Traeger’s (1988) study on the issue of social support networks, students are asked to identify significant adults in their lives for detailed information. Important adults chosen by respondents are described in the questionnaire as; (a) people you spend time with or do thing with; (b) people who make important decisions about things in your life; (c) people you go to for advice; (d) people you would like to be like; and (e) people who will help you.

The quality of social support network includes density of network, heterogeneity of network, network size, frequency of interaction, and network of stability. The students listed as many as they chose to measure the size of network, but only described the first ten adults’ detail information to estimate the of density of network, heterogeneity of network, frequency of interaction, and stability of network. Density of network was used to calculate the percent of non-kin members in the network. The heterogeneity of network was measured by the percentage of non-aboriginal members in individual student’s network. Frequency of interaction was calculated by averaging scores on responses of 1 to 4 for the frequency of interaction across those ten network members; Cronbach’s alpha for this scale reported in the study of Sandra (2003) was 0.76. Finally, stability of network members relates to how long the respondent has known this member (α=.76; Sandra, 2003).

The Multigroup Ethnic Identity Measure

Phinney’s (1992) Multigroup Ethnic Identity Measure includes 12 items for an
overall perceived integral racial identity score. Across a wide range of ethnic groups and ages, the measure has been extensively used and consistently shown good reliability, typically with alphas .80. All items used a five-point rating scale from 1 (strongly disagree) to 5 (strongly agree), and a scale score was derived by reversing negative items and obtaining the mean.

*The Measure of Racial Identity Attitude Scale*

In this study, the Racial Identity Development Scale (RAIS) was used to understand the status of Taiwanese Aboriginal junior college students’ racial identity development. The RAIS consists of 50 statements for collecting data, and the participants answer the questionnaire on a level of 1 (strongly disagree) to 5 (strongly agree). Total scores for each of the four stages (Pre-encounter, Encounter, Immersion-Emersion, and Internalization) were attained by summing response of per statement of every subscale, and the total scores were divided by the number of items for the average score of the subscale. For example, a highest score on encounter placed the student in the Encounter Stage.

Helms (1990) reported Cronbach’s α of 0.76, 0.51, 0.69, and 0.80 and accepted Construct Validity for the stages of Pre-encounter, Encounter, Immersion-Emersion, and Internalization. Sample statements were “I believe that being Taiwanese Aboriginal is a positive experience”, and “I believe that to be Taiwanese Aboriginal is not necessarily good”.

In Taiwan, Ku (2004) adopted Helms’s RAIS in her research to measure Taiwanese Aboriginal college student’s racial identity. She revised RAIS and kept 47 statements based on experts’ ratings of face validity and content validity. The accepted
Cronbach’s α is reported as 0.78, 0.82, 0.65, and 0.87 respectively for the stages of Pre-encounter, Encounter, Immersion-Emersion, and Internalization.

*The Measure of Perceived Stress Scales (PSS)*

The fourteen questions of the Perceived Stress Scale (PSS; Cohen, Kamarck, Mermelstein, 1983) is the most widely used psychological instrument for measuring the perception of stress. It is a five point Likert-type scale, and items were designed for a number of direct queries for scoring current levels of experienced stress. In each question, respondents were asked about their perceptions during the last month, and to indicate how they felt or thought in a certain way. Then, PSS scores were obtained by reversing the scores (e.g. 0=4, 1=3, 2=2, 3=1 and 4=0) on the seven negative items (4, 5, 6, 7, 9, 10, and 13) and then summing across all 14 items. Statement included “In the last month, how often have you been upset because of something that happened unexpectedly”. The PSS is stable over time $r=.80$ in its test–retest reliability and correlates $r=.62$ with the Stress Inventory (Machulda et al., 1998).

*The Measure of Self-Esteem Scale (RSE)*

People are always motivated by their positive or negative orientation; Self-Esteem is an overall evaluation of one's worth or value, which Rosenberg defines as "totality of the individual's thoughts and feelings with reference to him as an object”. The Rosenberg (1965) Self-Esteem Scale (RSE) is now commonly scored as a Likert scale. The RSE included ten questions with four point scale ranging from strongly agree to strongly disagree. The original scale was developed in the 1960s for the respondents of 5,024 high school juniors and seniors from ten randomly selected schools in New York State.

The scale has high reliability, its correlations of test-retest are in the range of 0.82
to 0.88, and its Cronbach’s alpha is acceptable in the range of 0.77 to 0.88 for various samples (Rosenberg, 1986). To score the items and assign a value to each of the 10 items are based on a four point Likert scale for items 1,2,4,6,7: Strongly Agree=3, Agree=2, Disagree=1, and Strongly Disagree=0, and items 3,5,8,9,10 are reversed: Strongly Agree=0, Agree=1, Disagree=2, and Strongly Disagree=3.

**The Measure of Actual Social Support**

The Measure of scale of Actual Social Support was developed by Jou (1994). This questionnaire consisted of 13 statements, which are used to measure actual social support. The total score for the ASS can range by a Likert scale from 1, “not at all” to 4, “very much”; higher scores denoted higher actual social support that respondent had obtained. The questions of ASS tended to divide actual support into four dimensions of factor groups, namely actual emotional social support, actual academic social support, actual interpersonal and cultural social support, and actual daily living support. Statements like “Gives me guidance and advice about my attitudes or behavior toward others” were answered in response to questions relating to interpersonal and cultural social support. In Jou’s study, the internal consistency had been well examined (α=0.95), and scores on the scale were calculated by summing cores on the 13 items.

**The Measure of School Engagement Scale**

Students’ academic engagement Scale for this study included academic aspiration, orientation, and academic effort. According to the suggestions of Smerdon’s (1999) study in the multidimensional approach to conceptualizing students’ value of education, two of the related factors are assessed: academic orientation and academic effort. Six items measured academic orientation about students’ valuing and enjoyment of school. And academic effort was measured by four items about student’s schoolwork effort.
Both measures applied a four-point scale for scoring the measures. The Cronbach’s alpha for academic orientation and effort measures in Smerdon’s study were .83 and .81.

Educational aspirations of students were measured with one question asking the respondents how far he or she expects to go in school. Scores are recorded from 1=associate degree to 4=doctoral degree.

*Academic Outcome (Expected Grade)*

Academic outcome is identified by expected grade, which is provided by student’s self-reported GPA compared with other classmates. One item assessed on a 5-point scale (from mostly below Ds to mostly As) was used to measure students’ expected grades. Schiel and Noble (1991) indicated that a self-reported grade has sufficient accuracy when studying the educational development of groups of students.

**Design and Analysis**

This quantitative design used SPSS 12 to conduct the initial data analysis. Frequency and distribution were examined for all variables. A conceptual model for the study including latent variables is shown in Figure 3.1.
Independent t-tests for comparisons based on gender, grade levels, racial identity position, and family structure are computed on all variables in the model; also, ANOVA was to compare the different stages of perceived integral racial identity on the other factors. Further, the study used Pearson correlation coefficient to investigate the relationships among the variables of social capital, racial identity, psychological adjustment, academic engagement, and academic outcome. A regression mode for quantitative and qualitative predictors was used to test the relationship between social capital, racial identity, psychological adjustment, academic engagement and dependent variable of academic outcome. At last, ANCOVA was adopted to identify the relationship between each of racial identity and social capital and academic outcome by
Hypotheses

Hypothesis 1: In the five-year junior colleges in Taiwan, most Taiwanese aboriginal students’ racial identity developments are in the position of internalization stage.

In the process of racial identity development, most Taiwanese aboriginal students in their elementary and junior high school life have gone through some conflicts from the pre-encounter to encounter, and to immersion/emersion stage; and then moved to the stage of internalization in their five years junior colleges life.

Hypothesis 2: In the internalization stage, a higher sense of perceived integral racial identity experience results in higher self-esteem, social support, academic aspiration, academic orientation, academic effort, and lower stress.

A stronger sense of perceived integral racial identity predicts higher self-esteem; so as to perceive better status of social support, stress, academic aspiration, and academic orientation, and academic effort.

Hypothesis 3: In the pre-encounter stage, the factor of perceived integral racial identity does not act as a factor to affect indicators of psychological adjustment and academic outcome.

Students in the pre-encounter stage are indifferently to perceive the effectiveness of racial identically; naturally, there are no relationships between the factors of perceived integral racial identity, indicators of psychological adjustment.

Hypothesis 4: Factors among psychological adjustment are mutually respectively correlated with each other.

The psychological adjustment is a perception to an individual; factors of the
psychological adjustment should be as a hole to affect with each other.

*Hypothesis 5:* Adaptive social network is positively related to racial identity development.

Shortage of Social Capital to interact with people will be associated with racial identity deviation that will in turn affect Taiwanese Aboriginal students’ Racial Identity developments and their ability to positively identify with their Taiwanese Aboriginal culture.

*Hypothesis 6:* Adaptive social network is positively related to psychological adjustment.

Shortage of Social Capital will be associated with psychological debilitation that will in turn affect psychological adjustment and result in poor perception of self-esteem, social support, and in a higher status of stress so that will affect academic aspiration, orientation, and effort in student’s pursuing better academic outcome.

*Hypothesis 7:* Adaptive social network is positively related to a better academic outcome.

A lack of social networks limits other contacts that would benefit academic performance and is associated with psychological debilitation.

*Hypothesis 8:* Adaptive psychological adjustment is positively related to the expectations of a better academic outcome.

Poor perception of psychological adjustment will be associated with psychological debilitation that will in turn affect students’ expected grade in a negative faction.

*Hypothesis 9:* Adaptive racial identity development is positively related to psychological adjustment.

Negative Racial Identity development will be associated with psychological
debilitation that will in turn affect Psychological Adjustment to have poor perception of self-esteem, social support, and to have higher perception of stress; also, affect academic aspiration, orientation, and effort in pursuing better academic outcome.

Hypothesis 10: Adaptive racial identity development is positively related to a better academic outcome.

Negative Racial Identity development will result in a negative academic outcome, and also in psychological debilitation that will consecutively affect students’ Expected Grade in a negative faction.
CHAPTER IV

ANALYSIS AND RESULTS

Introduction

This chapter presents the results of the study, and the major objectives include six sections. The first section illustrates the proceeding of data collection. The second section demonstrates statistics of demographic indicators. The third section outlines descriptive statistics for all variables of interest. The fourth section describes independent t-tests and ANOVA on comparing all interested variables based on gender, grade levels, family structure, and racial identity position. The fifth section of the chapter presents several correlations to examine the expected relation patterns among social capital, racial identity, psychological adjustment, and academic outcome. The sixth section presents the regression model for psychological adjustment indicators on individual dependant variables of social network, perceived integral racial identity, and expected grade. The last section applies ANCOVA to test the effects of four individual stage’s perceived integral racial identity on expected grades by covariates of psychological adjustment.

The Proceeding of Data Collection

The primary data were collected during November and December 2006, and the participants were Taiwanese aboriginal five-year junior college students in Taiwan. Five hundred questionnaires were distributed by letters to these schools (Hsing Wu
College, Chang Gung Institute of Technology, Mingchi University of Technology, National Taichung Institute of Technology, Central Taiwan University of Science and Technology, National Taichung Nursing College, Tajen University, Fooyin University, and Tzu Chi College of Technology). Two hundred eighty-eight questionnaires were returned from all 500 recruited participants. However, only 226 of the returned questionnaires were useable for the study.

Sociodemographic Characteristics

The participants’ sociodemographic characteristics included gender, age, grade level, having stayed in Taiwan, and family structure. Of the 226 useable responses, 28 or 12.4% were male and 198 or 87.6% were female. The mean of the respondents’ ages was 2.47, corresponding to actual ages are around 16 to 19 years old. The grade levels contain grade 1 respondents 73 (34.3 %), grade 2 respondents 44 (20.8 %), grade 3 respondents 32 (15.1 %), grade 4 respondents 29 (13.7 %), grade five 33 (15.6 %), and grade six (extension) 1 (0.5 %). At last, about 28.3% of students live in one-parent households, while the remaining 71.7% have two parents living at home.

Descriptive Statistics

Descriptive statistics for each of the study variables (potential social capital, racial identity, psychological adjustment, and academic outcome) include mean and standard deviation are discussed below.

Potential Social Capital

For measuring the size of network, the average of network members for a student was 8.53 persons. About 28% of students’ network members are kin members (family
related) of the density of network, while the remaining 72% students are non-kin members. The number of individuals in the network is not relatively dense toward kin members. The homogeneous of network is 43% (non-aboriginal Taiwanese), as students are only somewhat likely to known aboriginal Taiwanese network members (57%). The mean of student’s frequency of interactions with network members is 2.54 which correspond to three or four times a week. Students’ networks were relatively stable with a mean of 3.15 that indicated students have known network members on an average of five to six years (Table 4.1).

Table 4.1

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Capital</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Network Size</td>
<td>226</td>
<td>8.53</td>
<td>4.44</td>
</tr>
<tr>
<td>Percent non-kin</td>
<td>226</td>
<td>5.44</td>
<td>2.80</td>
</tr>
<tr>
<td>Percent non-aboriginal</td>
<td>226</td>
<td>2.03</td>
<td>1.69</td>
</tr>
<tr>
<td>Frequency of Interaction</td>
<td>226</td>
<td>2.54</td>
<td>1.89</td>
</tr>
<tr>
<td>Network Stability</td>
<td>226</td>
<td>3.15</td>
<td>1.28</td>
</tr>
</tbody>
</table>

**Perceived Integral Racial Identity (PIRI)**

To describe the respondent’s true sense of perceived integral racial identity development, Multigroup Ethnic Identity Measure was used. The mean score for perceived integral racial identity for all respondents was 4.14. Respectively, the averages of the each four stage’s perceived integral racial identity were pre-encounter 3.07, encounter 3.44, immersion-emersion 3.41, and internalization 3.42 (Table 4.2).

The ratios of student number for each stage are pre-encounter 10 (3.6%), encounter 33 (14.8%), immersion-emersion 31 (13.9%), and internalization 151 (67.7%). The stage of internalization was rated at 67.7% which indicates that most students
accepted or approved of their Taiwanese indigenous heritage. The pre-encounter scale indicated that 3.6% of the students consider race as a minor component of personal identity and devalue their aboriginal heritage and may hold feeling of self-hatred.

**Table 4.2**

*Descriptive Statistics for All Students’ PIRI and Students in Each of the Four Stage’s PIRI*

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>All respondents’ PIRI</td>
<td>226</td>
<td>4.17</td>
<td>.61</td>
</tr>
<tr>
<td>Students in Pre-encounter’s PIRI</td>
<td>10</td>
<td>3.07</td>
<td>.22</td>
</tr>
<tr>
<td>Students in Encounter’s PIRI</td>
<td>33</td>
<td>3.44</td>
<td>.32</td>
</tr>
<tr>
<td>Students in Immersion/Emersion’s PIRI</td>
<td>31</td>
<td>3.41</td>
<td>.47</td>
</tr>
<tr>
<td>Students in Internalization’s PIRI</td>
<td>151</td>
<td>3.42</td>
<td>.31</td>
</tr>
</tbody>
</table>

*Psychological Adjustment*

In the literature, the indicators of psychological adjustment include self-esteem, social support, stress, academic aspiration, academic orientation, and academic effort. The mean of 3.56 on the students’ self-esteem scale, corresponding with a rate of 1=strongly disagree to 5=strongly agree, indicates that students perceive lower self-esteem. On the stress scale, students perceive light stress, as a neutral mean of 2.88 on a scale of 1=almost never to 5=most of the time. On the social support scale, students feel generally positively supported (mean=2.80) on a scale of 1=not at all to 5=nearly completely (Table 4.3).

In the terms of academic engagement as related to psychological adjustment, the mean of 2.06 (1=associate bachelor’s degree, 2=bachelor’s degree, 3=master’s degree, 4=doctoral degree) on the academic aspiration scale indicates students plan to pursue bachelor degrees after obtaining an associate-bachelor’s degree from a junior college. On academic orientation and effort, students are generally positively oriented to
students are generally positively oriented to school \((M=3.51)\) and put effort into their learning \((M=3.60)\), as scored on scales of 1=strongly disagree to 5=strongly agree. (Table 4.3).

**Table 4.3**

*Descriptive Statistics for Variables on Psychological Adjustment*

<table>
<thead>
<tr>
<th>Variables</th>
<th>(N)</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychological Adjustment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td>226</td>
<td>3.56</td>
<td>.60</td>
</tr>
<tr>
<td>Stress</td>
<td>226</td>
<td>2.89</td>
<td>.79</td>
</tr>
<tr>
<td>Social Support</td>
<td>226</td>
<td>2.80</td>
<td>.62</td>
</tr>
<tr>
<td><strong>School Engagement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Aspiration</td>
<td>226</td>
<td>2.06</td>
<td>.65</td>
</tr>
<tr>
<td>Academic Orientation</td>
<td>226</td>
<td>3.51</td>
<td>.56</td>
</tr>
<tr>
<td>Academic Effort</td>
<td>226</td>
<td>3.60</td>
<td>.64</td>
</tr>
</tbody>
</table>

**Academic Outcome**

In the current coursework, the average student expected mostly Cs \((M=3.01)\) on a scale of 1=mostly Es, 2=mostly Ds, 3=mostly Cs, 4=mostly Bs, 5=mostly As.

**Academic Outcome**

In the current coursework, the average student expected mostly Cs \((M=3.01)\) on a scale of 1=mostly Es, 2=mostly Ds, 3=mostly Cs, 4=mostly Bs, 5=mostly As.

**Group Comparisons for All Interested Variables**

Group comparisons were run to determine whether there were any differences on all model variables based on gender, grade levels, family structure, and racial identity position (pre-encounter, encounter, immersion/emersion, internalization). Variables’ means and standard deviations by groups as well as the independent t-test (Table 4.4) and ANOVA (Table 4.5 and 4.6) analyses are shown as below. The results are
summarized in the following sections.

**Gender Based Differences on All Model Variables**

Independent t-test was used to compare male and female students on all model variables in the study. Female students in the samples reported higher social network status than male. Based on the same analysis, there were no differences on the other model variables of perceived integral racial identity, academic engagement, and variable of academic outcome.

**Grade Levels Based Differences on All Model Variables**

In this study, student’s grade level was categorized into the first group (grade 1, 2 and 3) and the second group (grade 4, 5 and 6-extension). The first and second groups were compared on all model variables using independent t-test. The difference between the first and the second groups to all variables indicated no statistically significant differences.

**Family Structure Based Differences on All Model Variables**

The categories of one and two parents at home were compared on all model variables using independent t-test (Table 4.4). The results indicated that if there were two-parent-at-home students had a higher material status than students with one-parent-at-home. There were significant differences between groups for self esteem status; one-parent-at-home students ($M=3.70$, $SD=.57$) indicated higher levels of self esteem than two-parent-at-home students ($M=3.50$, $SD=.61$). One-parent-at-home students reported significantly lower stress status ($M=2.25$, $SD=.80$) than two parents at home students ($M=2.51$, $SD=.81$). One-parent-at-home students reported significantly higher scores ($M=3.72$, $SD=.55$) than two-parent-at-home students ($M=3.41$, $SD=.54$) on academic orientation; and
one-parent-at-home students were also significantly higher on academic effort ($M=3.88$, $SD=.67$) than Two-parents-at-home students ($M=3.47$, $SD=.58$). Though, this result is not easily interpreted, students with one-parent-at-home seemed more academically inclined to seek help in academic orientation than two parents at home.

Table 4.4

The Differences of All Variables Based on Gender, Grade levels, Family structure, and Perceived Integral Racial Identity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Gender ($n=226$)</th>
<th>Grade Levels ($n=226$)</th>
<th>Family Structure ($n=226$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male/Female</td>
<td>Grade (1,2,3)/</td>
<td>(One/Two Parents at Home)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4,5,6-extension)</td>
<td></td>
</tr>
<tr>
<td>Material Status</td>
<td>.93</td>
<td>.69</td>
<td>.004**</td>
</tr>
<tr>
<td>Social Network</td>
<td>.003 **</td>
<td>.74</td>
<td>.71</td>
</tr>
<tr>
<td>Perceived Integral Racial Identity</td>
<td>.84</td>
<td>.40</td>
<td>.08</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>.23</td>
<td>.44</td>
<td>.025*</td>
</tr>
<tr>
<td>Social Support</td>
<td>.86</td>
<td>.14</td>
<td>.24</td>
</tr>
<tr>
<td>Stress</td>
<td>.55</td>
<td>.94</td>
<td>.023*</td>
</tr>
<tr>
<td>Academic Aspiration</td>
<td>.46</td>
<td>.18</td>
<td>1.00</td>
</tr>
<tr>
<td>Academic Orientation</td>
<td>.40</td>
<td>.11</td>
<td>.000***</td>
</tr>
<tr>
<td>Academic Effort</td>
<td>.17</td>
<td>.27</td>
<td>.000***</td>
</tr>
<tr>
<td>Expected Grade</td>
<td>.10</td>
<td>.91</td>
<td>.24</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001

Racial Identity Positions Based Differences on All Model Variables

Table 4.5

Differences for Categorized Four Racial Identity Stages on All Variables

<table>
<thead>
<tr>
<th>PIRI</th>
<th>Material Status</th>
<th>Social Network</th>
<th>Self Esteem</th>
<th>Social Support</th>
<th>Stress</th>
<th>Aspiration</th>
<th>Orientatio</th>
<th>Effort</th>
<th>Expected Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>.000***</td>
<td>.595</td>
<td>.792</td>
<td>.009**</td>
<td>.512</td>
<td>.512</td>
<td>.946</td>
<td>.769</td>
<td>.146</td>
<td>.145</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001

Lastly, ANOVA was used to compare four stages (pre-encounter, encounter, immersion/emersion, internalization) of racial identity development on all model variables. Students reported no differences of all stages of racial identity development...
on all model variables; but, the variables of perceived integral racial identity and self-esteem were strongly significantly different (Table 4.5). In addition, post hoc (Table 4.6-1) indicated that scores on racial identity for those in the pre-encounter stage were significantly different than the scores of those in the other three stages of perceived integral racial identity; and its mean was in the lowest level (mean=3.01) among four stages, and the stage’s internalization (mean=4.28) was in the highest level. Based on the same analysis, the stage of pre-encounter’s self-esteem (mean=2.88) was in lowest position among four stages, and internalization (mean=3.61) was in the highest position among four stages (Table 4.6-2).

Table 4.6-1

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(I)</th>
<th>(J)</th>
<th>Mean Difference (I-J)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Integral Racial Identity</td>
<td>1.00</td>
<td>2.00</td>
<td>-1.1624</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>(M=3.01, SD=.16)</td>
<td>(M=4.17, SD=.59)</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(M=4.05, SD=.59)</td>
<td>4.00</td>
<td>-1.0366</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>(M=4.28, SD=.55)</td>
<td></td>
<td>-1.2649</td>
<td>.000***</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001
In the Internalization stage, correlations between PIRI and each of the Psychological Adjustment Indicators are as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Self Esteem</th>
<th>Social Support</th>
<th>Stress</th>
<th>Aspiration</th>
<th>Orientation</th>
<th>Effort</th>
<th>Academic Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIRI</td>
<td>.406***</td>
<td>.240**</td>
<td>-.233**</td>
<td>.030</td>
<td>.238**</td>
<td>.247**</td>
<td>.056</td>
</tr>
<tr>
<td></td>
<td>(.000)</td>
<td>(.003)</td>
<td>(.004)</td>
<td>(.713)</td>
<td>(.003)</td>
<td>(.002)</td>
<td>(.496)</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001

Table 4.7

In the Internalization stage, correlations between PIRI and each of the Psychological Adjustment Indicators are as follows:

- Self Esteem: .406***
- Social Support: .240**
- Stress: -.233**
- Aspiration: .030
- Orientation: .238**
- Effort: .247**
- Academic Outcome: .056

*p<.05, **p<.01, ***p<.001

Group Correlations

In the Internalization stage, Correlations between PIRI and Each of the Variables among Psychological Adjustment Indicators

In the internalization stage, PIRI is not only positively correlated with self-esteem, but also correlated with social support, academic orientation, academic effort, and negatively correlated with stress; however, PIRI is not correlated with academic outcome (Table 4.7).
In the Pre-encounter Stage, Correlations between Self Esteem and Each of the Variables among PIRI, and Psychological adjustment Indicators

In the pre-encounter stage, PIRI is not correlated with other indicators of social support, stress, academic aspiration, academic orientation, academic effort, and academic outcome; nevertheless, PIRI is highly negatively correlated with self-esteem (Table 4.8).

Table 4.8

<table>
<thead>
<tr>
<th></th>
<th>Self Esteem</th>
<th>Social Support</th>
<th>Stress</th>
<th>Aspiration</th>
<th>Orientation</th>
<th>Effort</th>
<th>Academic Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIRI</td>
<td>-.837*</td>
<td>.002</td>
<td>.015</td>
<td>-.010</td>
<td>.448</td>
<td>.495</td>
<td>-.691</td>
</tr>
<tr>
<td></td>
<td>(.010)</td>
<td>(.996)</td>
<td>(.971)</td>
<td>(.981)</td>
<td>(.266)</td>
<td>(.213)</td>
<td>(.058)</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001

Correlations among psychological adjustment variables and PIRI

The correlations among psychological adjustment factors are shown in Table 4.9. Academic aspiration was only lightly positively correlated with academic effort, and was negatively correlated with stress; and was not correlated with self esteem, social support, and academic orientation. The strongest correlations among variables of psychological adjustment were the positive correlation between academic orientation and effort (r=.58, p<.001), and negatively correlated between self esteem and stress (r=-.56, p<.001).
The Correlations among PIRI, Social Network, and Expected Grade

The correlations among PIRI, social network, and expected grade were shown in Table 4.10. Social network was significantly correlated with overall perceived integral racial identity ($R=.198$, $P=.003$), and also significantly correlated with expected grade ($R=.167$, $P=.003$). However, the results of correlations between expected grade and PIRI indicated no significant correlation ($R=.04$, $P=.546$).

Table 4.10

<table>
<thead>
<tr>
<th></th>
<th>Social Network</th>
<th>PIRI</th>
<th>Expected Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Network</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PIRI</td>
<td>.198** (.003)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Expected Grade</td>
<td>.167** (.003)</td>
<td>.040 (.546)</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table 4.9

Correlations among Psychological Adjustment Variables and PIRI

<table>
<thead>
<tr>
<th></th>
<th>Self Esteem</th>
<th>Social Support</th>
<th>Stress</th>
<th>Aspiration</th>
<th>Orientation</th>
<th>Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Esteem</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>.312**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stress</td>
<td>-.557***</td>
<td>-.133*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration</td>
<td>.041</td>
<td>.058</td>
<td>-.178*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation</td>
<td>.278**</td>
<td>.296**</td>
<td>-.191**</td>
<td>.116</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Effort</td>
<td>.365**</td>
<td>.200**</td>
<td>-.210**</td>
<td>.160*</td>
<td>.57</td>
<td>1.00</td>
</tr>
<tr>
<td>PIRI</td>
<td>.493***</td>
<td>.261***</td>
<td>-.245***</td>
<td>.026</td>
<td>.247**</td>
<td>.306***</td>
</tr>
</tbody>
</table>

*** Correlation is significant at the 0.001 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Group Regressions

The group regressions examined how indicators of psychological adjustment (self-esteem, social support, stress, academic aspiration, academic orientation, and academic effort) were regressed to explain each variable of social network, perceived integral racial identity, and expected grade. The results for each regression model that include standardized regression coefficients and $R^2$ are shown in Table 4.11.

Table 4.11

| Psychological Adjustment Predictors on Each of Social Network, Overall Perceived Integral Racial Identity, and Expected Grade |
|---|---|---|---|
| Psychological Adjustment | $N$ | Sig | $R$ | $R^2$ |
| Social Network | 226 | .008** | .274 | .075 |
| Perceived Integral Racial Identity | 226 | .000*** | .522 | .273 |
| Expected Grade | 226 | .000*** | .401 | .161 |

Predictors: (constant), Self-Esteem, Social Support, Stress, Aspiration, Orientation, Effort

* $p<.05$, ** $p<.01$, *** $p<.001$

Regression of Psychological Adjustment Indicators on Social Network

All predictors of psychological adjustment were regressed to the variable of social network. The results for the regression were statistically significant, and regression coefficient is .274 (.008) that explains variance of 8% on expected grade.

Regression of Psychological Adjustment Indicators on Perceived Integral Racial Identity (PIRI)

All predictors of psychological adjustment are also used in regressing to the variable of the PIRI. The results for the regression were statistically significant. The regression coefficient of .522 (.000) explains the variance of 27% on the PIRI.
Regression of Psychological Adjustment Indicators on Expected Grade

At last, all predictors of psychological adjustment are adopted in regressing to the variable of expected grade. The results for the regression is statistically significant, and regression coefficient is .401 (.000) that explains variance of 16 % on expected grade.

Group Analyses of Covariance

The group analyses of Covariance examined how each stage’s (1) PIRI on its academic outcome by covariate of psychological adjustment, (2) social network on its academic outcome by covariate of psychological adjustment

PIRI on Its Academic Outcome by Covariate of Psychological Adjustment

Given the result of the group correlations, there was no correlation between perceived integral racial identity (PIRI) and expected grades (Table 4.10). Nevertheless, the PIRI was correlated with most of the psychological adjustment variables; furthermore, the psychological adjustment variables were also on good correlations to the expected grade (Table 4.12). In this section, analysis of covariance (ANCOVA) was used by adding variables of psychological adjustment as covariates, and also to obtained regression net effects for initial differences between all stages’ OPIRI (fixed factor) and its expected grade (dependant variable).

Though, the total respondents’ (226) scores of PIRI directly had no relationship with their academic outcome, the result of ANCOVA indicates statistical significant difference ($P=.045, F=2.725, R^2=.192$) by adding covariates of psychological adjustment. The results confirm the indirect effects of all stages’ PIRI on expected grades when the covariates of psychological adjustment are applied (Table 4.12). In
addition, the results of pairwise comparisons (Table 4.13) indicated only first stage of
pr-encounter OPIRI reported significantly different to the other three stages.

Table 4.12

ANOVA of Each Stage’s PIRI on Its Academic Outcome by Covariate of Psychological Adjustment

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrast</td>
<td>7.757</td>
<td>3</td>
<td>2.586</td>
<td>2.725</td>
<td>.045*</td>
</tr>
<tr>
<td>Error</td>
<td>201.134</td>
<td>212</td>
<td>.949</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
*p<.05, **p<.01, ***p<.001

Table 4.13

Pairwise Comparisons for Each Stage’s PIRI and Expected Grade by Covariate of Psychological Adjustment

<table>
<thead>
<tr>
<th>(I) PIRI</th>
<th>(J) PIRI</th>
<th>Mean Difference (I - J)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>2.00</td>
<td>-.895*</td>
<td>.026*</td>
</tr>
<tr>
<td>3.00</td>
<td>1.00</td>
<td>.895*</td>
<td>.026*</td>
</tr>
<tr>
<td>4.00</td>
<td>1.00</td>
<td>1.086**</td>
<td>.007**</td>
</tr>
<tr>
<td>2.00</td>
<td>1.00</td>
<td>.191</td>
<td>.437</td>
</tr>
<tr>
<td>4.00</td>
<td>1.00</td>
<td>8.198E-02</td>
<td>.673</td>
</tr>
<tr>
<td>3.00</td>
<td>1.00</td>
<td>1.004**</td>
<td>.007**</td>
</tr>
<tr>
<td>2.00</td>
<td>1.00</td>
<td>.109</td>
<td>.571</td>
</tr>
<tr>
<td>4.00</td>
<td>1.00</td>
<td>-8.198E-02</td>
<td>.673</td>
</tr>
</tbody>
</table>
*p<.05, **p<.01, ***p<.001

Social Network on Its Academic Outcome by Covariate of Psychological Adjustment

In this section, analysis of covariance (ANCOVA) was used by adding variables of psychological adjustment as covariates to obtain regression net effects for initial differences between all stages’ social network (fixed factor) and its academic outcome (dependant variable).

Though, the total respondents’ (226) scores of social network directly have a
relationship with their academic outcomes, the result of ANCOVA also indicates marginal statistical significant difference ($p = .052$, $F = 2.61$, $R^2 = .17$) by adding covariate indicators of psychological adjustment. The results confirm the effects of all stages’ social network on academic outcomes when the covariates of psychological adjustment are applied (Table 4.14). In addition, the results of pairwise comparisons (Table 4.15) indicated only first stage of Pre-encounter social network reported significantly different to the other three stages.

**Table 4.14**

<table>
<thead>
<tr>
<th>ANCOVA of All Stages’ Social Network on Its Academic Outcome by Covariate indicators of Psychological Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Contrast</td>
</tr>
<tr>
<td>Error</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001

**Table 4.15**

<table>
<thead>
<tr>
<th>Pairwise comparisons for Each Stage’s Social Network and Academic Outcome by Covariate of Psychological Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I) Social Network</td>
</tr>
<tr>
<td>1.00</td>
</tr>
<tr>
<td>3.00</td>
</tr>
<tr>
<td>4.00</td>
</tr>
<tr>
<td>2.00</td>
</tr>
<tr>
<td>3.00</td>
</tr>
<tr>
<td>4.00</td>
</tr>
<tr>
<td>3.00</td>
</tr>
<tr>
<td>4.00</td>
</tr>
<tr>
<td>2.00</td>
</tr>
<tr>
<td>3.00</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The present study examined the relationship of racial identity, psychological adjustment, social network, and their effects on academic outcome of Taiwanese aboriginal junior college students. This chapter presents (1) the summary of the research findings, (2) discussion, (3) conclusions, (4) Implications, (5) directions for future research.

The Summary of Research Findings

The major findings of the study are presented according to the hypotheses from the successive groups of constructs in the model of social network, racial identity, psychological adjustment, and academic outcome.

The Finding for Hypothesis 1

After experiencing challenges and conflicts in their racial identity development, most of the Taiwanese aboriginal five-year junior college students had passed through pre-encounter, encounter, and immersion/emersion stage in their elementary and junior high school life. These students in their five-year junior college life reported the internalization stage as the highest rate at 67.7% among all four stages. The evidence indicated that most Taiwanese aboriginal five-year junior college students are in the stage of internalization, and accept or approve of their Taiwanese indigenous heritage.
This result was in agreement with hypothesis one that most Taiwanese aboriginal students’ racial identity development is in the position of internalization stage for students at the five-year junior colleges in Taiwan.

**The Finding for Hypothesis 2**

In the internalization stage, the results indicated that perceived integral racial identity (PIRI) was positively correlated with self-esteem, social support, academic orientation, academic effort, and negatively correlated with stress; however, it did not correlate with academic outcome. This result was in agreement with hypothesis two that the higher sense of racial identity experiences the higher the sense of self esteem, social support, academic aspiration, academic orientation, academic effort, and lower stress.

**The Finding for Hypothesis 3**

In the pre-encounter stage, results showed that perceived integral racial identity (PIRI) were not correlated with psychological adjustment indicators (social support, stress, academic aspiration, academic orientation, academic effort) and academic outcome; nevertheless, PIRI was highly negatively correlated with self-esteem. Excluding self-esteem, the result was consistent with the hypothesis three that the factor of perceived integral racial identity in the pre-encounter stage cannot act as a factor to affect indicators of psychological adjustment and academic outcome. The results also indicated PIRI and self-esteem were different to the other three racial identity stages (encounter, immersion/emersion, internalization), also, the pre-encounter stage experience lowest PIRI and self-esteem, and the internalization stage was in the highest position.

**The Finding for Hypothesis 4**

Academic aspiration was only lightly positively correlated with academic effort,
and was negatively correlated with stress and was not correlated with self esteem, social support, and academic orientation.

*The Finding for Hypothesis 5*

For the relationship between adaptive social network and racial identity; the result revealed that social network was significantly correlated with perceived racial identity. It is consistent with the hypothesis #5 that adaptive social network is positively related to racial identity development.

*The Finding for Hypothesis 6*

For the relationship between social network and psychological adjustment indicators, the psychological adjustment indicators were related to social network. The results indicated adaptive social network is positively related to psychological adjustment, and support hypothesis #6 that a shortage of adaptive social network will be associated with psychological debilitation which results in poor perception of self-esteem, social support, stress, academic aspiration, academic orientation, and academic effort.

*The Finding for Hypothesis 7*

For the relationship between adaptive social network and academic outcome, the results indicated adaptive social network is directly related to academic outcome in a positive direction. In addition to the direct correlation between social network and academic outcome, there is an indirect correlation between social network and academic outcome by adding covariable indicators of psychological adjustment. Hypothesis seven indicated that a shortage of adaptive social network will be associated with students’ academic outcomes in a negative faction.
The Finding for Hypothesis 8

For the relationship between adaptive psychological adjustment and academic outcome, the psychological adjustment indicators were analyzed with academic outcome. Poor perception of psychological adjustment was associated with psychological debilitation and will result in poor academic outcome. The results indicated adaptive psychological adjustment was positively related to academic outcome, and inconsistent with the hypothesis #8.

The Finding for Hypothesis 9

For the relationship between adaptive racial identity development and psychological adjustment, a regression analysis was performed with the psychological adjustment factors and racial identity. The results indicated adaptive racial identity was positively related to psychological adjustment. The findings were consistent with hypothesis #9 that racial identity development is associated with Psychological adjustment which had a debilitating effect on self-esteem, social support, academic aspiration, academic orientation, and increased stress.

The Finding for Hypothesis 10

To the relationship between racial identity development and academic outcome, the results indicated the perceived integral racial identity (PIRI) was not directly related to academic outcome. However, there is indirect correlation between them by adding covariate indicators of psychological adjustment.
Discussion

Grounding the study on Erikson’s Psychosocial Development of self-identity, results of the study indicated most of the students (67.8 %) are in the fourth stage of internalization, and a small group of the students (3.6 %) are in the first stage of pre-encounter. These two groups are adopted as typical ones to explain the differences toward their indicators of psychological adjustments on the basis of perceived integral racial identity (PIRI). In thinking about the distinction of the psychological adjustment indicators between the first stage of pre-encounter and the fourth stage of internalization, the results indicated that they are drastically different. In the stage of internalization, students’ PIRI was positively correlated with psychological adjustment indicators; the higher PIRI indicated higher social support, self-esteem, academic aspiration, academic orientation, academic effort, and the lower perceived stress. Nevertheless, the stage of pre-encounter’s PIRI was only negatively correlated with the indicator of self-esteem, but not the other factors.

Researchers have used integrated racial identity as a construct to identify depression, self-esteem, self-concept, and psychological functioning among African American populations (Arroyo and Zigler, 1995; Carter, 1991; Hall, 2001; Munford, 1994; Verkuyten and Lay, 1998). However, the five-year Taiwanese aboriginal junior college students’ perceived integral racial identity of the first stage cannot act as a factor to affect indicators of psychological adjustment, but only negatively affect self-esteem. Parham and Helm (1981), Baldwin and Bell (1985), Speight, Vera, Derrickson’s (1996) findings suggested that a strong sense of racial identity determines high level of self-esteem. Rosenberg, et al (1995) indicated that well developed self-esteem may affirm positive attitudes about themselves, and self esteem in itself. Drawing from the
conclusion of Erikson’s Psychosocial Development of self-identity, a young person acquires self-certainty to deal with self-doubt (crises) in the first of the four stages; the students were not only affirming a positive attitude about self-identity but also self-esteem. The literature supports the results of this study that a strong sense of racial identity development in the fourth stage of internalization may contribute to positive psychological functions in five-year Taiwanese aboriginal junior college students.

This study provided a conceptual model (Figure 3.1) to explain and clarify the relationships of the Taiwanese Aboriginal junior college students’ social capital, racial identity, psychological adjustment, and academic outcome. The fuller relationships among the conceptual model are illustrated as below.

*The Relationships between Psychological Adjustment and Academic Outcome*

In the study, all predictors of psychological adjustment indicators were considered relative to the variable of academic outcome. The results of the regression analysis were statistically significant. The conclusion of many documented studies is that academic achievement and self-esteem are positively correlated (Bankston and Zhou, 2002; Lockett and Harrell, 2003; Schmidt and Padilla, 2003; Verkuyten and Brug, 2002). Shavelson and his colleagues (quoted in Elshenawi and Badary, unpublished) also claimed that self-esteem is related to academic achievement and has direct relationship to its physical, emotional and social sides.

Many researchers found that stress is strongly related to emotional depression, and high levels of stress are also linked to lower academic outcomes. So, suffering from prolonged stress is likely to reduce the efficiency of a person, and such stress in school tends to result in students performing poorly academically. Bell (1995), Dubois and Felner (1992) and Ganesan (1995) have found that stress contributed significantly to
poor academic performance of adolescents. There is a consistent relationship between academic achievement and social support, with higher performing students persisting in their studies to a greater degree than their lower achieving cohorts. A considerable amount of research has indicated that the presence of parental social support is positively related to college achievement (Cutrona, Cole, Colangelo, Assouline and Russell, 1994). Also, the linkage has been established between negative peer influence and academic outcomes (Berndt, Laychak and Park, 1990; Berndt and Keefe, 1995), a similar link may be established between positive peer influence and academic outcomes (Epstein, 1983).

Theoretical development of the concept academic engagement obtained a great deal of attention in the late 1980’s and early 1990’s. Researchers labeled the affective component “school attachment” for measuring to what extent students feel embedded in the community of school. Studies have documented that high levels of engagement lead to higher academic achievement. Engagement behaviors explain a modest but significant covariance in academic achievement (Roscigno and Ainsworth-Darnell, 1999; Singh, Crosnoe, 2001; Granville, and Dika, 2002; Smerdon, 1999).

The Relationships between Social Capital and Racial Identity
Insufficient social capital may lead to detrimental racial identity development. Students’ social capital status should be properly assessed to help students resolve challenges for their healthy and positive racial identity development in the Han dominant campuses. Though, the relationship between social capital and racial identity is not clearly interpretable based on the available studies; ethnic behaviors tend to be highly correlated with social capital in some contexts (Bankston and Zhou, 1995).
Ethnic identification continues to be expressed through individuals’ transnational kinship networks (Goulbourne, 2002). Consequently, for many college students, the transition from home to a university setting is a time often linked with many challenges associated with psychological adjustment (Paul and Brier, 2001). The Taiwanese aboriginal five-year junior college students in the short term have difficulty establishing or reproducing social relationships, and will struggle in forming their healthy racial identities on the basis of insufficient social capital. These issues raise the need for the study on the relationship between ethnicity and social capital in far more nuanced ways. The results in this study offered the evidence that social capital was significantly correlated with racial identity development. This supports the fact that well established social capita will result in improved racial identity.

The Direct Relationship between Social Network and Academic Outcome, and the Indirect Relationship between Social Network and Academic Outcome with Covariate of Psychological Adjustment

In this study, student’s psychological adjustment was not only statistically significantly related to the variable of the social network, but also to academic outcome. Psychological adjustment indicators act as a mediator to the relation between social network and academic outcome. The results provide evidence that the variable social network can not only directly affect academic outcome, but also indirectly affect academic outcome with covariate indicators of psychological adjustment.

Bourdieu (1986) defined social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition”. In brief explanations, Coleman (1990a, 1990b) refers to social capital as “an asset that a person
or persons can use as a resource”. Hence, if students have developed more extensive social networks, academic outcomes should be higher. Social network has direct effects on academic outcomes; and improved social networks may improve healthy psychological adjustment and result in greater academic outcome.

*The Direct Relationship between Racial Identity and Academic Outcome, and the Indirect Relationship between Racial Identity and Academic Outcome with Covariate of Psychological Adjustment*

Given the same analysis as above, students’ of psychological adjustment were individually regressed to the variables of the racial identity and academic outcome, and the results were statistically significant. Psychological adjustment indicators act as a mediator to the relation between racial identity and academic outcome. The variable of racial identity does not affect academic outcome; but indirectly affects academic outcome as a covariate with psychological adjustment. Feelings of alienation often appear to conflict with the individual’s sense of identity (Gibbs, 1987), and result in negative psychological outcomes (McCreary and Slavin, 1996). A healthy and secure sense of identity is critical to avoid psychological problems and to improve one’s academic achievement (Berzonsky and Kuk, 2000). This suggests that there is a relationship between identity formation and academic success through the covariate of psychological adjustment and that identity formation has an indirect influence on students’ success and/or failure when pursuing a degree. Obviously, Taiwanese aboriginal five-year junior college students’ racial identity development should be considered as a significant factor to their academic success.

Social network is an accumulated social asset that students possess. Bourdieu (1986) defined a social network as “the aggregate of the actual or potential resources
which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition”. In this study, the evidence indicated that social network has direct effect on academic outcome, and also indirect effect with the covariate of psychological adjustment on academic outcome when students encounter and resolve challenges and conflicts.

Nevertheless, racial identity is a perception of ethnic identity but not an asset. Unless, students encounter psychological challenges and conflicts from related ethnic events, psychological adjustment indicators cannot operate to be a buffer in coping with academic outcome. Most students in this study are in the fourth stage of internalization; individuals in this stage characterize a resolution of racial identity conflicts and become comfortable with racial identity. This provides further evidence that racial identity did not have a direct effect on the expected grade as reported by the subjects. Thus, racial identify may not effect expected grades of aboriginal students without the covariable of psychological adjustment factors in higher education in Taiwan.

The study is the first countrywide survey in Taiwan on the Taiwanese aboriginal five-year junior college students. Second, the study is unique in its complex and nuanced conceptualization in forming a model to present the relationships among the related factors of social capital, racial identity, psychological adjustment, and academic outcome, and it also describes Taiwanese aboriginal five-year junior college students’ actual college experience. This study identified most Taiwanese aboriginal five-year junior college students are in the fourth stage of internalization. The factor of racial identity affects academic outcome as a covariable with the indicators of psychological adjustment; the findings amend the existing research that racial identity
cannot act as a factor to affect students’ psychological functions and academic achievement in higher education (Tsai, 2003; Wu’s, 2004).

Conclusions

The present study demonstrated the efficacy of conceptual modeling the relationship of racial identity, psychological adjustment, social capital, and their effects on academic outcome of Taiwanese aboriginal junior college students. The hypotheses in the study revealed how the variables (racial identity, social network, psychological adjustment, academic outcome) related with each other in the established model, and also described how indicators of psychological adjustment interacted with each other.

For social capital, the study provides encouraging evidence that social capital is directly, significantly correlated with academic outcomes and that Taiwanese aboriginal five-year junior college students with broader social networks develop better academic outcomes.

For racial identity, the study shows that a higher perception of racial identity does not directly lead to better academic outcomes. This conforms to earlier research in Taiwan that cultural difference does not have much influence on Taiwanese aboriginal college students to fit in the Han dominant academic environment (Wu, 2004). However, the evidence in this study indicated that most Taiwanese aboriginal five-year junior college students perceived their racial identity status to be in the fourth stage of internalization; students relatively possess positive racial identity attitudes; unless they encounter significant challenges and conflicts. That is the reason why racial identity does not directly affect academic outcome, the process of racial identity activation operates with positive psychological adjustment indicators and leads to
improved academic outcomes when students encounter significant challenges and conflicts.

**Implications**

*To The Policy Makers*

Given that the majority of aboriginal Taiwanese students in this study were found to be in the internalization stage, attention needs to be given to understanding how these students may develop across the stages from pre-encounter to internalization successfully so that greater numbers may be successful from kindergarten through high school and so that they enter higher education and successfully complete higher education. Because of the policy of adding points to assist the aboriginal Taiwanese junior college students on the national admission test, the five-year aboriginal Taiwanese junior college students may feel inferior and experience be discrimination by other students. The Policy Makers should help increase the numbers enrolling in higher education but also fund programs to enhance students’ learning and facilitate academic excellence. Additionally, the Taiwanese aboriginal five-year junior college students should be possibly grouped in fewer or selected schools rather than distributed across all schools.
To Higher Education

This research indicates that a lack of social network for students limits academic achievement and completion; thus, higher education institutions need to develop ways to promote and enhance the development of social networks for Taiwanese aboriginal students. Some strategies include: after school programs to provide services and resources that promote the development of social networks. This study indicates that staff or student mentors may be effective in guiding and assisting these students in regard to academic and social activities and thus promote social networking. Individuals who may assist in this include academic advisors, academic counselors, and local senior students as mentors. The study suggests encouraging students to attend social activities inside or outside campuses to increase interaction opportunities with the local people, students, staff, and faculties; and even connecting you with other campus resources.

Directions for Future Research

This study raises three questions for future studies. (1) The results of this study revealed that most Taiwanese aboriginal five-year junior college students are in the fourth stage of internalization. In Parham and Helm’s Model (1985) in assessing racial identity development, stage two is a critical stage for self-image and to lead students to reexamine his/her views about self identity. It is necessary for research to identify which educational system contains most of the Taiwanese aboriginal students in the critical stage two; (2) in comparison between Native American and Aboriginal Taiwanese students, the results of this study reveal many questions and issues for future study toward the discipline of the comparative education. For instance, most
aboriginal Taiwanese five-year junior college students are in the fourth stage. Are Native American junior colleges students also in the same stage?
APPENDIX A

ENGLISH VERSIONS OF STUDENT CONCENT FORM
Dear Student,

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

Title of Study:  *The Relationship of Racial Identity, Psychological Adjustment, Social Capital, and their effects on Academic Achievement of Taiwanese Aboriginal Junior College*

Principal Investigator:  *Lin, Chia-Hsun*, a graduate student in the University of North Texas (UNT) Department of *Higher Education*.

**Purpose of the Study:**

You are being asked to participate in a research study which involves predicting the academic achievement of Taiwanese aboriginal junior college students from the selected variable.

**Study Procedures:**

You will be asked to provide information about the questionnaires of social capital, racial identity, and psychological adjustment; and your school will be asked to offer your GPA that questionnaires will take about 25 minutes of your time.

**Foreseeable Risks:**

The potential risks involved in this study are no foreseeable risks in this study.

**Benefits to the Subjects or Others:**

We expect that this study should serve as reference in offering valuable information for those who work with Taiwanese aboriginal students on the institutional campuses and for the authorities concerned.
Procedures for Maintaining Confidentiality of Research Records:

The confidentiality of your individual information will be maintained in any publications or presentations regarding this study. Students’ information is not identifiable by anyone but the researchers involved. Also, this study will maintain signed consent forms and coded survey results in separate locations.

Questions about the Study

If you have any questions about the study, you may contact Lin, Chia-Hsun at telephone number :(04)2219-6647, 0938-891-382, and E-mail: hclin@ntit.edu.tw

Review for the Protection of Participants:

This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at 0021-940-565-3940 with any questions regarding the rights of research subjects.

Research Participants’ Rights:

Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

- **Lin, Chia-Hsun** has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.

- You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.
• You understand why the study is being conducted and how it will be performed.

• You understand your rights as a research participant and you voluntarily consent to participate in this study.

• You have been told you will receive a copy of this form.

____________________________________
Printed Name of Participant

____________________________________
Signature Name of Participant Date

For the Principal Investigator or Designee:

I certify that I have reviewed the contents of this form with the participant signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

____________________________________
Printed Name of Participant

____________________________________
Signature Name of Participant Date
APPENDIX B

ENGLISH VERSION OF THE QUESTIONNARES
Questionnaires for “The Relationship of Racial Identity, Psychological Adjustment, Social Capital, and their effects on Academic Outcomes of Taiwanese Aboriginal Junior College”

**Part I: Demographic Information**

Please check the appropriate box for each of the following questions

1. Sex: □ Male, □ Female
2. School ____________, Department ____________
3. Age: □ 18-19, □ 20-21, □ 22-24, □ over 25 years old
4. Grade: □ Grade 1 or 2 or 3, □ Grade 4, 5 or Extension
5. Tribe of Mine ________
6. Parents Tribes
   Father: ________________
   Mother: ________________
7. Parents Education
   Father: □ Elementary, □ Junior High, □ High School, □ Junior College,
   □ College/University, □ Graduate
   Mother: □ Elementary, □ Junior High, □ High School, □ Junior College,
   □ College/University, □ Graduate
8. Family Structure: □ Two parents at home, □ One parent at home, □ Guardian at home, □ No Guardian at home
9. Your Economic Status: □ Very good, □ Good, □ Normal, □ Worse, □ Worst
10. Your Major Income form: □ Family, □ Part time job, □ Scholarships, □ Others__________
11. Your Secondary Income form: □ Family, □ Part time job, □ Scholarships, □ Others__________
12. GPA in Your Class: □ Very good, □ Good, □ Normal, □ Worse, □ Worst
**Part II: Social Support Network**

**Please follow the below instruction to check the appropriate box for your social support network**

List as many as you want and who can help you to face difficulties, but only offer up to the first ten adults’ detail information. If over ten people, only key in his family name.

1. Key in family name: _____ He is my: □Parents, □Relatives, □Friends, □Classmates, Others____

   How long have you known this person: ____ years

   By your long term experience, the average interaction between you:
   □ Occasionally(0-1 time a week), □ Sometimes(2-3 times a week),
   □ Frequently(4-5 times a week), □ Always(Daily)

2. Key in family name: _____ He is my: □Parents, □Relatives, □Friends, □Classmates, Others____

   How long have you known this person: ____ years

   By your long term experience, the average interaction between you:
   □ Occasionally(0-1 time a week), □ Sometimes(2-3 times a week),
   □ Frequently(4-5 times a week), □ Always(Daily)

3. Key in family name: _____ He is my: □Parents, □Relatives, □Friends, □Classmates, Others____

   How long have you known this person: ____ years

   By your long term experience, the average interaction between you:
   □ Occasionally(0-1 time a week), □ Sometimes(2-3 times a week),
   □ Frequently(4-5 times a week), □ Always(Daily)
4. Key in family name: _____ He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, □ Others____

How long have you known this person: ____ years

By your long term experience, the average interaction between you:
□ Occasionally (0-1 time a week), □ Sometimes (2-3 times a week),
□ Frequently (4-5 times a week), □ Always (Daily)

5. Key in family name: _____ He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, □ Others____

How long have you known this person: ____ years

By your long term experience, the average interaction between you:
□ Occasionally (0-1 time a week), □ Sometimes (2-3 times a week),
□ Frequently (4-5 times a week), □ Always (Daily)

6. Key in family name: _____ He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, □ Others____

How long have you known this person: ____ years

By your long term experience, the average interaction between you:
□ Occasionally (0-1 time a week), □ Sometimes (2-3 times a week),
□ Frequently (4-5 times a week), □ Always (Daily)

7. Key in family name: _____ He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, □ Others____

How long have you known this person: ____ years

By your long term experience, the average interaction between you:
□ Occasionally (0-1 time a week), □ Sometimes (2-3 times a week),
□ Frequently (4-5 times a week), □ Always (Daily)
8. Key in family name: _____ He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____

   How long have you known this person: ____ years

   By your long term experience, the average interaction between you:
   □ Occasionally (0-1 time a week), □ Sometimes (2-3 times a week), □ Frequently (4-5 times a week), □ Always (Daily)

9. Key in family name: _____ He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____

   How long have you known this person: ____ years

   By your long term experience, the average interaction between you:
   □ Occasionally (0-1 time a week), □ Sometimes (2-3 times a week), □ Frequently (4-5 times a week), □ Always (Daily)

10. Key in family name: _____ He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____

    How long have you known this person: ____ years

    By your long term experience, the average interaction between you:
    □ Occasionally (0-1 time a week), □ Sometimes (2-3 times a week), □ Frequently (4-5 times a week), □ Always (Daily)

11. Please, key in family name: ___, He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____

12. Please, key in family name: ___, He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____

13. Please, key in family name: ___, He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____

14. Please, key in family name: ___, He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____

15. Please, key in family name: ___, He is my: □ Parents, □ Relatives, □ Friends, □ Classmates, Others____
### Part III: Racial Identity Scale

**Racial Identity Scale**

The statements which follow refer to feelings and experiences for your racial identity

<table>
<thead>
<tr>
<th>Please use the following statements to indicate the extent from agree box to disagree box</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Partial Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I believe that being Taiwanese Aboriginal is a positive experience.</td>
<td>☐</td>
<td>☐</td>
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<td>2. I know through experience what being Taiwanese Aboriginal in Taiwan means.</td>
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<td>3. I feel unable to involve myself in Han experiences and am increasing my involvement in Taiwanese Aboriginal experiences.</td>
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<td>4. I believe that large numbers of Taiwanese Aboriginal are untrustworthy.</td>
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<td>☐</td>
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<td>5. I feel an overwhelming attachment to Taiwanese Aboriginal.</td>
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<td>6. I involve myself in causes that will help all oppressed people.</td>
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<td>7. I feel comfortable wherever I am.</td>
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<td>8. I believe that Han people look and express themselves better than Taiwanese Aboriginal people.</td>
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<td>9. I feel very uncomfortable around Taiwanese Aboriginal people.</td>
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<td>10. I feel good about being Taiwanese Aboriginal, but do not limit myself to Taiwanese Aboriginal activities.</td>
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<td>11. I often find myself referring to Han people as honkies, devils, pigs, etc.</td>
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<td>12. I believe that to be Taiwanese Aboriginal is not necessarily good.</td>
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<td>13. I believe that certain aspects of the Taiwanese Aboriginal experience apply to me, and others do not.</td>
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<td>14. I frequently confront the system and the man.</td>
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<td>15. I constantly involve myself if Taiwanese Aboriginal political and social activities (art shows, political meetings, Taiwanese Aboriginal theater etc.)</td>
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<td>16. I involve myself in social action and political groups, even if there are other Taiwanese Aboriginal involved.</td>
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<td>17. I believe that Taiwanese Aboriginal people should learn to think and experience life in ways which are similar to Han people.</td>
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<td>18. I believe that the world should be interpreted from a Taiwanese Aboriginal perspective.</td>
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<td>19. I have changed my style of life to fit my beliefs about Taiwanese Aboriginal people.</td>
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<td>20. I feel excitement and joy in Taiwanese Aboriginal surroundings.</td>
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<td>21. I believe that Taiwanese Aboriginal people came from a strange, dark, and uncivilized continent.</td>
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<td>22. People, regardless of their race, have strengths and limitations.</td>
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<td>23. I find myself reading a lot of Taiwanese Aboriginal literature and thinking about being Taiwanese Aboriginal.</td>
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<td>24. I feel guilty and/or anxious about some of the things I believe about Taiwanese Aboriginal people.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐</td>
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<td>25. I believe that a Taiwanese Aboriginal people's most effective weapon for solving problems is to become part of the Han people's world.</td>
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<td>26. I speak my mind regardless of the consequences (e.g., being kicked out of school, being imprisoned, and being exposed to danger).</td>
<td>☐ ☐ ☐ ☐ ☐ ☐</td>
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<tr>
<td>27. I believe that everything Taiwanese Aboriginal is good, and consequently, I limit myself in Taiwanese Aboriginal activities.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐</td>
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<tr>
<td>28. I am determined to find my Taiwanese Aboriginal identity.</td>
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<tr>
<td>29. I believe that Han people are intellectually superior to Taiwanese Aboriginal.</td>
<td>☐ ☐ ☐ ☐ ☐ ☐</td>
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<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>30. I believe that because I am Taiwanese Aboriginal, I have much strength.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>31. I feel that Taiwanese Aboriginal people do not have as much to be proud of as Han people do.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>32. Most Taiwanese Aboriginal I know are failures.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>33. I believed that Han people should feel guilty about the way they have treated Taiwanese Aboriginal in the past.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>34 Han people can’t be trusted.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>35. In today’s society if Taiwanese Aboriginal people don’t achieve they have only themselves to blame.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>36. The most important thing about thing is that I am Taiwanese Aboriginal.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>37. Being Taiwanese Aboriginal just feels natural to me.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>38. Other Taiwanese Aboriginal people have trouble accepting me because my life experiences have been so different from their experiences.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>39. Taiwanese Aboriginal people who have any Han people’s blood should feel ashamed of it.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>40. Sometimes, I wish I belonged to the Han race.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>41. The people I respect most are Han people.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>42. A person’s race usually is not important to me.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
43. I feel anxious when Han people compare me to other members of my race.

44. I can’t feel comfortable with either Taiwanese Aboriginal people or Han people.

45. A person’s race has little to do with whether or not he/she is a good person.

46. When I am with Han people, I pretend to enjoy the things they enjoy.

47. When a stranger who is Taiwanese Aboriginal does something embarrassing in public, I get embarrassed.

48. I believe that a Taiwanese Aboriginal person can be close friends with a Han person.

49. I am satisfied with myself.

50. I have a positive attitude about myself because I am Taiwanese Aboriginal.


1. Actual Social Support

The statements which follow refer to feelings and experiences for your actual social support

Please use the following statements to indicate what is your actual social support obtained

<table>
<thead>
<tr>
<th>Not at all</th>
<th>A little</th>
<th>Some</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Listens to me when I feel depressed, worried, or irritated.</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2. Stays with me when I feel lonely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Comforts me when I feel frustrated or sad.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Helps to find materials for my research and studies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Understands and encourages me when I am worried about my researches and studies, or examinations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Clarifies difficult points from lectures.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Gives me guidance and advice about my attitudes or behaviors toward others.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Provides information about others’ behaviors, attitudes interests, likes and dislikes, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Listens to me when I have difficulties with Japanese culture or customs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Someone to talk to who understands me when I encounter problems regarding values.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Lends me money when I don’t have any at hand.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Lends me or shares with me the necessary appliances, tools, etc. for everyday living.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Provides information for foreign students about part-time work, scholarships, activities, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Self-Esteem Scale

The statements which follow refer to feelings and experiences for your self-esteem

<table>
<thead>
<tr>
<th>Please use the following statements to indicate the extent from agree box to disagree box</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Partial Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I'm a person of worth, at least on an equal plane with others.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>2. I feel that I have a number of good qualities.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>3. All in all, I am inclined to feel that I am a failure.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>4. I am able to do things as well as most other people.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>5. I feel I do not have much to be proud of</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>6. I take a positive attitude toward myself.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>7. On the whole, I am satisfied with myself.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>8. I wish I could have more respect for myself</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>9. I certainly feel useless at times</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>10. At times I think I am no good at all</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>11. I feel that I'm a person of worth, at least on an equal plane with others.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>12. I feel that I have a number of good qualities.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

3. Stress Scale

The statements which follow refer to feelings and experiences for your stress

<table>
<thead>
<tr>
<th>Please use the following statements to indicate the extent from agree box to disagree box</th>
<th>Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Fairly Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In the last month, how often have you been upset because of something that happened unexpectedly?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
2. In the last month, how often have you felt that you were unable to control the important things in your life?

| □ | □ | □ | □ | □ |

3. In the last month, how often have you felt nervous and "stressed"?

| □ | □ | □ | □ | □ |

4. In the last month, how often have you felt confident about your ability to handle your personal problems?

| □ | □ | □ | □ | □ |

5. In the last month, how often have you felt that things were going your way?

| □ | □ | □ | □ | □ |

6. In the last month, how often have you found that you could not cope with all the things that you had to do?

| □ | □ | □ | □ | □ |

7. In the last month, how often have you been able to control irritations in your life?

| □ | □ | □ | □ | □ |

8. In the last month, how often have you felt that you were on top of things?

| □ | □ | □ | □ | □ |

9. In the last month, how often have you been angered because of things that were outside of your control?

| □ | □ | □ | □ | □ |

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

| □ | □ | □ | □ | □ |

### 4. School Engagement Scale

((a). Educational Aspiration Scale (b). Educational Effort and Orientation scale)

#### (a) Aspiration Scale

**Please Check the appropriate box for your educational aspiration**

<table>
<thead>
<tr>
<th>How far do you expect to in school.</th>
<th>□ Junior college</th>
<th>□ Four years university or college</th>
<th>□ Master degree</th>
<th>□ Doctor degree</th>
</tr>
</thead>
</table>
(b) Educational Effort and Orientation Scale

The statements which follow refer to feelings and experiences for your educational effort and orientation. Please use the following statements to indicate the extent from agree box to disagree box.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Partially Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoy school because learning things that will help in the future.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Academic success is important for success in life.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Look forward to school because like subjects studied</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Participation in classes is fun</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>My teachers encourage me to learn</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I often study things that interest me.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I feel I am responsible for my learning</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I always try hard, no matter how difficult the work.</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>When I fail, that makes me try that much harder</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>I always try to do my best in school</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
APPENDIX C

CHINESE VERSION OF CONCENT FORM
親愛的同學，您好！

這份同意函是想邀請您參與本研究，在您同意前請先閱讀如下說明。

這份問卷主要是想了解「原住民大學生的族群認同、社會資產及心理調適之關聯及對學業成就之影響」的學術研究問卷，所以您所提供的寶貴意見及學校提供的學業成績資料，不僅有助於本研究的完成，亦可作為將來學校對原住民五專生的教學、課程、與行政上的改進參考。

本問卷採用不具名方式作答，不對外披露個人資料，且將同意函與提供的資料分別存放，受訪者將可放心作答。此研究經由「美國北德州州立大學受訪者權益保障委員會(IRB)」認可，且本問卷對受訪者並無潛在的不良影響；如果有任何問題請聯絡國立台中技術學院林佳勳老師(電話:04-2219-6647)。

懇請您協助與參與我們的研究提供您寶貴的意見，您的看法對這項有關原住民五專生的研究非常重要，此問卷大約可在二十五分鐘內完成。在此衷心感謝您的協助！
APPENDIX D

CHINESE VERSION OF THE QUESTIONNAIRES
基本資料，請填寫或勾選您的基本資料

1. 性別：□男、□女。

2. 學校 ___________、系科 ___________。

3. 年齡：年齡：□14-15 歲、□16-17 歲、□18-19 歲、□20-21、□20-24、□25 以上。

4. 目前是五專：□一年級、□二年級、□三年級、□四年級、□五年級、□延修。

5. 本人族籍 ________。

6. 父親與母親的族群?
   父親是：□原住民________族、□閩南人、□客家人、□外省人、□其他 ________。
   母親是：□原住民________族、□閩南人、□客家人、□外省人、□其他 ________。

7. 您的經濟狀況：□非常緊迫、□緊迫、□尚可、□寬裕、□非常寬裕。

8. 您的主要收入來源：□家庭、□工讀、□獎學金、□其他 ________。

9. 您的次要收入來源：□家庭、□工讀、□獎學金、□其他 ________。

10. 您在班上的平均學業成績狀況：□非常好(前 10 名)、□好(11 至 20 名)、□普通(21 至 30 名)、□不好(31 至 40 名)、□非常不好(40 名以後)。

13. 父親與母親的教育程度：
   父親是：□不識字、□小學、□國中、□高中(職)、□專科、□大學、□研究所。
   母親是：□不識字、□小學、□國中、□高中(職)、□專科、□大學、□研究所。

14. 您的家庭結構，家中成員包括：
   □父親及母親、□父親或母親(單親家庭)、□家中之監護人不是父親或母親(是祖父母、伯父、叔父等)、□監護人不在家中。
儘可能列出能與您互動，幫您面對困難，分享彼此想法的人。這些人包括父母、老師、親戚、朋友、同學及其他人。溝通工具包括面談、信件、電話、E-mail、MSN等。人數如果超過十位，從第十一位開始只需填入他(她)的姓。

第1位
- 他(她)的姓是：
- 他(她)是：□原住民、□非原住民。
- 他(她)是我的：□父母、□親戚、□老師、□朋友、□同學、□其他□□。
- 我們已經認識幾年：□□年(如果不足一年，請填入一年)。
- 以長期感受來講，你們之間的互動頻率是：□偶而(如每週零到一次)、□有時(如每週二到三次)、□常常(如每週四到五次)、□總是(如每天都有)。

第2位
- 他(她)的姓是：
- 他(她)是：□原住民、□非原住民。
- 他(她)是我的：□父母、□親戚、□老師、□朋友、□同學、□其他□□。
- 我們已經認識幾年：□□年(如果不足一年，請填入一年)。
- 以長期感受來講，你們之間的互動頻率是：□偶而(如每週零到一次)、□有時(如每週二到三次)、□常常(如每週四到五次)、□總是(如每天都有)。

第3位
- 他(她)的姓是：
- 他(她)是：□原住民、□非原住民。
- 他(她)是我的：□父母、□親戚、□老師、□朋友、□同學、□其他□□。
- 我們已經認識幾年：□□年(如果不足一年，請填入一年)。
- 以長期感受來講，你們之間的互動頻率是：□偶而(如每週零到一次)、□有時(如每週二到三次)、□常常(如每週四到五次)、□總是(如每天都有)。
**第4位**

- 他(她)的姓是: ____。
- 他(她)是: □原住民、□非原住民。
- 他(她)是我的: □父母、□親戚、□老師、□朋友、□同學、□其他______。
- 我們已經認識幾年: ______年(如果不足一年，請填入一年)。
- 以長期感受來講，你們之間的互動頻率是: □偶而(如每週零到一次)、□有時(如每週二到三次)、□常常(如每週四到五次)、□總是(如每天都有)。

**第5位**

- 他(她)的姓是: ____。
- 他(她)是: □原住民、□非原住民。
- 他(她)是我的: □父母、□親戚、□老師、□朋友、□同學、□其他______。
- 我們已經認識幾年: ______年(如果不足一年，請填入一年)。
- 以長期感受來講，你們之間的互動頻率是: □偶而(如每週零到一次)、□有時(如每週二到三次)、□常常(如每週四到五次)、□總是(如每天都有)。

**第6位**

- 他(她)的姓是: ____。
- 他(她)是: □原住民、□非原住民。
- 他(她)是我的: □父母、□親戚、□老師、□朋友、□同學、□其他______。
- 我們已經認識幾年: ______年(如果不足一年，請填入一年)。
- 以長期感受來講，你們之間的互動頻率是: □偶而(如每週零到一次)、□有時(如每週二到三次)、□常常(如每週四到五次)、□總是(如每天都有)。
<table>
<thead>
<tr>
<th>第 7 位</th>
</tr>
</thead>
<tbody>
<tr>
<td>他(她)的姓是: _____。</td>
</tr>
<tr>
<td>他(她)是: □原住民、□非原住民。</td>
</tr>
<tr>
<td>他(她)是我的: □父母、 □親戚、 □老師、 □朋友、 □同學、 □其他_____。</td>
</tr>
<tr>
<td>我們已經認識幾年:_____年(如果不足一年，請填入一年)。</td>
</tr>
<tr>
<td>以長期感受來講，你們之間的互動頻率是: □偶而(如每週零到一次)、 □有時(如每週二到三次)、 □常常(如每週四到五次)、 □總是(如每天都有)。</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>第 8 位</th>
</tr>
</thead>
<tbody>
<tr>
<td>他(她)的姓是: _____。</td>
</tr>
<tr>
<td>他(她)是: □原住民、□非原住民。</td>
</tr>
<tr>
<td>他(她)是我的: □父母、 □親戚、 □老師、 □朋友、 □同學、 □其他_____。</td>
</tr>
<tr>
<td>我們已經認識幾年:_____年(如果不足一年，請填入一年)。</td>
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<tr>
<td>以長期感受來講，你們之間的互動頻率是: □偶而(如每週零到一次)、 □有時(如每週二到三次)、 □常常(如每週四到五次)、 □總是(如每天都有)。</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>第 9 位</th>
</tr>
</thead>
<tbody>
<tr>
<td>他(她)的姓是: _____。</td>
</tr>
<tr>
<td>他(她)是: □原住民、□非原住民。</td>
</tr>
<tr>
<td>他(她)是我的: □父母、 □親戚、 □老師、 □朋友、 □同學、 □其他_____。</td>
</tr>
<tr>
<td>我們已經認識幾年:_____年(如果不足一年，請填入一年)。</td>
</tr>
<tr>
<td>以長期感受來講，你們之間的互動頻率是: □偶而(如每週零到一次)、 □有時(如每週二到三次)、 □常常(如每週四到五次)、 □總是(如每天都有)。</td>
</tr>
</tbody>
</table>
第 10 位

- 他(她)的姓是：______。
- 他(她)是：□原住民、□非原住民。
- 他(她)是我的：□ 父母、 □ 親戚、 □ 老師、 □ 朋友、 □ 同學、 □ 其他 ______。
- 我們已經認識幾年：______年(如果不足一年，請填入一年)。
- 以長期感受來講，你們之間的互動頻率是：□偶而(如每週零到一次)、 □ 有時(如每週二到三次)、 □ 常常(如每週四到五次)、 □ 總是(如每天都有)。

人數如果超過十位，從第十一位開始只需填入他(她)的姓。

第 11 位 只須填入姓氏: _____。
第 12 位 只須填入姓氏: _____。
第 13 位 只須填入姓氏: _____。
第 14 位 只須填入姓氏: _____。
第 15 位 只須填入姓氏: _____。
第 16 位 只須填入姓氏: _____。
第 17 位 只須填入姓氏: _____。
第 18 位 只須填入姓氏: _____。
請針對下列的描述，依照您的感覺及想法，勾選出最符合您的程度。

<table>
<thead>
<tr>
<th>1. 我開始學習唱原住民本族的歌謠</th>
<th>非常不同意</th>
<th>不同意</th>
<th>部分同意</th>
<th>同意</th>
<th>非常同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. 我開始對「原住民升學優待制度」是應該的想法產生懷疑</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>3. 我希望自己是漢人</td>
<td>□</td>
<td>□</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. 我很高興自己身為原住民，也很願意參加漢族各種的相關活動</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>5. 我開始學習原住民的母語</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>6. 當別人問我是不是原住民時，我會樂於承認</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>7. 我覺得漢人應為其不平等對待原住民的方式感到愧疚</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>8. 我認為原住民是較為落後且文化素質貧乏的族群</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>9. 我已經依照原住民的生活信念去改變個人原有的生活風貌</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>10. 我相信原住民的文化是優秀的</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>11. 我想多瞭解原住民的一些傳統文化 (如神話、傳統祭典等)</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
</tr>
<tr>
<td>12. 我覺得大部分漢人的整體表現優於原住民</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
<td>□</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>13. 我以身為原住民而感到驕傲。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>14. 我願意幫助原住民及其他被壓迫的族群去爭取公平合理的待遇。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>15. 我不希望別人知道我是原住民。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>16. 我常常責備許多漢人對待原住民是不公正及有偏見的。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>17. 我認為各族群的文化是無法分辨優劣的。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>18. 當我聽到漢人使用「番仔」來稱呼原住民時，我感到被羞辱。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>19. 如果處於全部都是原住民的團體與環境裡，我會感到不自在。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>20. 我開始參加關於原住民的團體和活動（如文化、教育、政治、宗教等）。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>21. 我覺得應該從原住民的立場去看酗酒、正名、還我土地等問題。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>22. 我開始願意參加原住民本族的祭典和活動。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>23. 對於原住民我有強烈的情感，並願意盡力幫助原住民在社會中成長。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>24. 我認為解決原住民問題最有效的方法是融入漢族社會。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>25. 在原住民團體中，我感到自在、愉快。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>26. 每個人的優點與限制，與個人的族群背景無關。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>27. 我會開始去思考身為原住民的意義為何。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>28. 我肯定原住民的族群認同，並相對尊重他族的族群認同。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>29. 我認為原住民應當學習用漢人的方式來思考和生活。</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td></td>
</tr>
<tr>
<td>項目</td>
<td>描述</td>
<td>非常不同意</td>
<td>不同意</td>
<td>部分同意</td>
<td>同意</td>
</tr>
<tr>
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<td>------</td>
</tr>
<tr>
<td>30</td>
<td>我認為身为原住民是一种難能可貴的榮耀</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>31</td>
<td>當我和漢人朋友在一起時、我會感到自卑</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>1</td>
<td>我認為自己是個有價值的人，至少與別人不相上下</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>2</td>
<td>我覺得自己有許多優點</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>3</td>
<td>我常覺得自己是一個失敗者</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>4</td>
<td>我做事的能力可以和大多數人一樣好</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>5</td>
<td>我覺得自己沒有什麼值得自豪的地方</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>6</td>
<td>我對自己抱持肯定的態度</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>7</td>
<td>我對自己感到滿意</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>8</td>
<td>我要是能看得起自己就好</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
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<tr>
<td>9</td>
<td>有時我感到自己很沒用</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
<tr>
<td>10</td>
<td>有時我覺得自己一無是處</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
<td>□ □ □ □</td>
</tr>
</tbody>
</table>
如下的陈述是有关您对实际社会支持的经验与感觉
实际社会支持是指有些人能提供您实际上的帮助
请指出您实际获得社会支持的程度

<table>
<thead>
<tr>
<th></th>
<th>完全没有获得</th>
<th>略有获得</th>
<th>很多获得</th>
<th>很多获得</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.当我感到意志消沉、烦恼、焦躁不安时，能和我商谈，听我倾诉。</td>
<td>□ □ □ □</td>
<td></td>
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<tr>
<td>2. 当我寂寞时能陪我。</td>
<td>□ □ □ □</td>
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<tr>
<td>3. 当我有挫折感、伤心的时候，能够安慰我。</td>
<td>□ □ □ □</td>
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<td></td>
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<tr>
<td>4. 能帮我寻找学习及考试所需的资料。</td>
<td>□ □ □ □</td>
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<tr>
<td>5. 当我不了解上课内容时，能尽量地说明给我听。</td>
<td>□ □ □ □</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6. 当我有学习、考试的烦恼时，能够体谅我、鼓励我。</td>
<td>□ □ □ □</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>7. 和别人交往时，对我的行动、态度，给予指导和建言。</td>
<td>□ □ □ □</td>
<td></td>
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<tr>
<td>8. 告诉我别人的行为、态度、兴趣、喜好等情报。</td>
<td>□ □ □ □</td>
<td></td>
<td></td>
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<tr>
<td></td>
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</tr>
<tr>
<td>9. 当我对汉族的文化风俗、生活习惯感到困扰时，能听我倾诉及体谅我。</td>
<td>□ □ □ □</td>
<td></td>
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<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. 当我有价值观的困扰时，能体谅我且与我沟通。</td>
<td>□ □ □ □</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

121
11. 手邊暫時缺錢時，能借錢給我………………………………………… □ □ □ □ □ □ □
12. 能告訴我打工機會、獎學金、活動等等的情報……………………… □ □ □ □ □ □ □
13. 能送我或借我日常生活用品………………………………………… □ □ □ □ □ □ □

請您回想過去一個月的情緒狀況，依照您的感覺及想法，勾選出最符合您自己的程度。

<table>
<thead>
<tr>
<th>號碼</th>
<th>過去一個月的情緒狀況</th>
<th>沒有</th>
<th>相當少</th>
<th>有時候</th>
<th>總是</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>在上個月中，您多常因為無預期發生的事情而感到煩躁………………</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
<tr>
<td>2.</td>
<td>在上個月中，您多常感覺到無法掌控許多生活中重要的事情……</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
<tr>
<td>3.</td>
<td>在上個月中，您多常感覺到自己過分緊張及有壓力…………………</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
<tr>
<td>4.</td>
<td>在上個月中，您多常感覺到沒有信心及能力來處理個人問題………</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
<tr>
<td>5.</td>
<td>在上個月中，您多常感覺到做事無法順心如意………………………</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
<tr>
<td>6.</td>
<td>在上個月中，您多常感覺到生活枯燥無味……………………………</td>
<td>□ □</td>
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<tr>
<td>7.</td>
<td>在上個月中，您多常感覺到無法處理所有應處理的事情……………</td>
<td>□ □</td>
<td>□ □</td>
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<tr>
<td>8.</td>
<td>在上個月中，您多常發怒，因為事情無法掌控………………………</td>
<td>□ □</td>
<td>□ □</td>
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<tr>
<td>9.</td>
<td>在上個月中，您多常感覺到事情累積太多而無法處理………………</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
<td>□ □</td>
</tr>
</tbody>
</table>
| 項目 | 描述 | 沒有 | 相當少 | 有時候 | 常 | 總
|------|------|------|---------|--------|---|---
| 10. | 在上個月中，您多常感覺到對於許多事情無法做決定 |        |         |         |    |    |
| 11. | 在上個月中，您多常被人際關係所困擾 |        |         |         |    |    |
|  | 請您回想過去一週的情緒狀況，依照您的感覺及想法，對於下列的描述，勾選出最適合您自己的程度。 |      |         |         |    |    |
| 1. | 我覺得不快樂，感到沮喪及悲傷 |        |         |         |    |    |
| 2. | 我覺得很煩，而感到不安及無助 |        |         |         |    |    |
| 3. | 我容易感到失望 |        |         |         |    |    |
| 4. | 我覺得現在比以前容易難過 |        |         |         |    |    |
| 5. | 我覺得自己很笨，不論做什麼，都不會讓我變得更好 |        |         |         |    |    |
| 6. | 我覺得別人都不瞭解我 |        |         |         |    |    |
| 7. | 我覺得比以前沒有信心，且感到人生沒有意義 |        |         |         |    |    |
| 8. | 我非常在乎別人對我的看法及反應 |        |         |         |    |    |
| 9. | 常因為這裡痛、那裡痛，使我覺得身體不舒服 |        |         |         |    |    |
| 10. | 我常覺得心跳很快而感覺相當的緊張或恐慌 |        |         |         |    |    |
| 11. | 我常覺得胃痛或肚子不舒服 |        |         |         |    |    |
12. 考試前或考試期間會感到緊張或煩躁因而影響考試成績……

13. 我變得什麼事都往壞處想……………………………………………

14. 我變得沒有判斷力，而對事情無法做決定…………………………

15. 我變得常常自責且不喜歡自己…………………………………………

請針對下列的描述，依照您的感覺及想法，勾選出最符合您的程度。

<table>
<thead>
<tr>
<th>議題</th>
<th>非常不同意</th>
<th>不同意</th>
<th>部分同意</th>
<th>同意</th>
<th>非常同意</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 我認為在學校用心學習有助於未來事業的成功…………………</td>
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<tr>
<td>2. 我認為學業成就是人生成功的重要因素……………………………</td>
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<tr>
<td>3. 我經常期待上課的到來………………………………………………</td>
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</tr>
<tr>
<td>4. 我對學校上課深感興趣………………………………………………</td>
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<tr>
<td>5. 老師們鼓勵我用心學習………………………………………………</td>
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</tr>
<tr>
<td>6. 我經常學習有興趣的知識……………………………………………</td>
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</tbody>
</table>
7. 我觉得我应该负责努力学习
   習………………………………………………… □ □ □ □ □

8. 無論功課如何困難我會用心學習
   習……………………………………… □ □ □ □ □

9. 我會因過去失敗而更加用心學習
   習……………………………………… □ □ □ □ □

10. 我總是在學校盡力學習
    習…………………………………………… □ □ □ □ □

問卷到此結束，非常感謝您！
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