

FACTORS INFLUENCING GIFTED STUDENTS' TRANSITION, ADAPTATION,
AND PERSISTENCE IN COLLEGE

by

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ABSTRACT

The popular belief that has been held for many years has been that students who have been identified as gifted would succeed academically in college because of their previous success in high school. However, in countries with a disadvantaged and unequal school system, one that is stratified according to groups' socioeconomic status, such as Chile, this statement could be questioned. Using quantitative and qualitative methodologies, the three studies presented in this dissertation have provided evidence confirming that gifted students had difficulties related to the transition to and persistence in college. Some of these difficulties were related to gifted students' initial academic performance in college and could be explained by their high school academic preparedness. Students who attended public schools had lower scores on the college entrance test (PSU) and had a lower academic performance in college than their gifted counterparts from voucher (charter) schools, as found in studies I and II. However, despite several academic difficulties, such as failing courses and falling behind their classmates, all students showed high levels of commitment, motivation, and a strong overall desire for continuing their higher education studies, as shown in studies II and III. Other difficulties were related to initial problems regarding social adaptation to college, as shown in study II. Implications for research and practice were discussed in all three studies, and include suggestions such as the creation of pre-college and within-college support programs

for college gifted students who have not been provided with challenging and/or high-level opportunities to meet college academic expectations.

CHAPTER I: INTRODUCTION

Context and Significance

“He is going to do great in college, he is gifted”. This has been a phrase usually mentioned by parents and/or teachers that could be heard anywhere in the world about a student’s “guaranteed” success in college given by the mere fact that he or she has been identified as gifted. However, the process of undergoing tertiary studies has been identified as extremely complex and influenced by several individual and environmental variables. Some of these variables have been studied in gifted students, with a special focus on psychological factors such as motivation, self-concept, and perfectionism. However, the phenomenon as a whole, including students’ educational background and psychosocial variables has not been addressed fully in the literature. Specifically, how these variables could affect vulnerable populations of gifted students (e.g. low-income students, females) and how they affected the process of acquiring a college degree. This process included the following stages: (a) college preparedness, also called “college readiness”; (b) transition and adaptation to college; and (c) persistence in college.

The manuscripts presented in this dissertation have included quantitative and qualitative analyses of the three stages of acquiring a college degree: preparedness, adaptation, and persistence. These stages have been considered for analysis as they constitute the natural progression of students toward college graduation. The overall purpose of the dissertation was to conduct in-depth analyses of these three stages in the population of gifted students; specifically, investigate which individual, academic, and/or

environmental variables were related to each of the stages and in which ways they could predict gifted students' academic and social success in college.

Literature Review

Definition of Giftedness

For the purposes of the investigations presented in this dissertation, the term giftedness was conceptualized following the definition provided by Gagne (2009). Gagne, in his theory of giftedness and talent, provided a comprehensive model to understand how natural superior abilities, that manifest in 10% of the population, could develop into systematically developed abilities with the intervention of internal and external catalysts such as motivation (intrapersonal catalyst) and educational opportunities (environmental catalyst).

This theory has been used widely in programs for the gifted in Chile. First, it has been used as part of a set of criteria and local norms for identifying underserved gifted students through the use of a non-verbal assessment. For example, from a pool of 200 students from public schools who took the test in 2011, their performance was compared to their own group of reference to identify 10% of students with talent *potential* who would be served through a special program. The theory of giftedness and talent also has been used regularly throughout these special programs to provide academic opportunities to gifted students through extracurricular enrichment activities in which the main goal of educators and practitioners has been to act as environmental catalysts to help students develop their natural abilities (or potential) into talents in a meaningful and consistent way.

College Preparedness

High school students have been expected to develop a series of abilities and concepts by the time they think about applying to college. Solid mastery of curricular concepts, familiarity with multiple choice tests, motivation, and parental support have been listed as some of the crucial factors that constituted a student's background to face future college demands.

Academic preparation. A student's academic preparation, also named *college readiness* (Moore, Slate, Edmonson, Bustamante, & Onwuegbuzie, 2010), has been defined as the mastering of high school curricular content areas. These areas could be divided into general academic areas, such as reading, writing, and mathematics, and specific content areas that are related to the academic track chosen by the student (e.g. Chemistry and Physics). However, a critical debate that has been sustained over the years has been whether a high school's preparatory curriculum was solid enough to prepare students to attend college or whether it only constituted a preparation for life and for a quick incorporation to the workforce. Also, part of this debate has been the question about who has been more favored in the high school curriculum. Usually, high school students whose parents had a college degree had an increased *social and cultural capital* (Bourdieu, 1977; Coleman, 1988) and therefore could easily benefit from the high school curriculum. On the other side, those who were first generation college (FGC) students have been defined as more disadvantaged because they do not undergo the same rigorous academic preparation as their counterparts (Martinez & Klopott, 2005).

Differences have been noted by authors in high school students' preparation for postsecondary education. For example, Greene and Forster (2003) found that half of the high school graduates in the United States did not graduate with the minimum requirements needed to attend a four-year college. Moreover, around 40% of the undergraduate students in the US needed to take remedial courses when entering college because of the lack of a solid academic preparation (Attewell, Lavin, Domina, & Levey, 2006). In addition, the majority of students enrolled in remedial courses in college came from vulnerable populations, such as students from low socioeconomic status (SES), English language learners, students of color, and FGC students.

The quality of the curriculum and teaching and learning experiences also have been studied as affecting college readiness, mainly the existing mismatch between college expectations and high school academic experiences. Researchers have found that the cognitive and academic skills required in college differ from what is taught in high school. College professors expect their students to display an array of abilities that include interpreting, arguing, solving complex problems, and drawing conclusions, among other important abilities that were essential to succeed in college but were not necessarily part of the high school curriculum (National Research Council, 1999). Also, college courses had a faster pace than high school classes and the workload (e.g. amount of readings) was considerably higher (Conley, 2007). All these differences between educational systems have led to a situation of inequity in the access to higher education, especially for vulnerable populations whose enrollment rate in college has been considerably low. Because of this situation, many universities in the United States and

around the world have been changing their admission procedures to merit-based processes instead of relying on standardized testing (Rooney & Schaeffer, 1998). In Chile, some universities have started implementing the same kind of entrance procedures for students who are at the top of their classes. In fact, in 2012, 5% of the students with the best academic performance in high school entered college without taking the entrance test. Even though college access has been granted for students, the question that has remained with this type of initiatives is whether students would be able to succeed in such a competitive environment, especially if lacking relevant college-related skills.

Achievement. Besides students' preparation for the complexities inherent in college and college courses, college readiness also has been associated with scores obtained by students on college entrance tests, such as the Scholastic Aptitude Test (SAT). For example, Menson, Patelis, and Doyle (2009) reported that New England students studying a rigorous curriculum with special emphasis in core areas (i.e. English, Math, Natural Sciences, and Social Sciences) had significantly higher scores on the SAT than students who did not, achieving at an average of 50 points higher in critical reading, mathematics, and writing.

Several minorities also have not achieved the expected scores on standardized college entrance tests, such as low-income Latinos and African-American students in the United States. Gandara (1995), in an exploratory study of achievement differences in Scholastic Achievement Test (SAT) and Advanced Placement (AP) test results between Latino students and their peers who were also high school graduates, reported that for high achieving Latino students who took the SAT, their scores were significantly lower

than their White and Asian counterparts. She also found that not all Latino students taking AP courses passed those exams, stressing that taking AP courses did not necessarily guarantee the passing of exams for high ability students.

Other authors, such as Ramist, Lewis, and McCamley-Jenkins (1994), also have found discrepancies in achievement scores between African American students and peers from other ethnicities. Particularly, these authors found that African American students had lower SAT scores, lower GPAs (Graduate Point Average), and lower representation in AP classes than their Asian and White peers.

Several reasons have been given to explain the discrepancy in achievement of minority students: (a) racism, (b) segregation, (c) poor quality of schooling, (d) lack of student motivation, and (e) lack of support from parents or guardians. Authors concluded that a combination of these factors has helped to explain part of the variance in students' results in achievement assessments, such as college entrance tests (Gandara & Maxwell-Jolly, 1999).

Underachievement. In the field of the education of gifted students, the phenomenon that has been investigated widely in relation to students' low performance on standardized tests such as the SAT has been underachievement. Underachieving gifted students could be defined as students performing below average in an educational context in which their cognitive abilities have been found to be well above average (Reis & McCoach, 2000). Underachieving has been conceptualized by different authors as having different causes, such as the following: (a) mismatch between students' areas of giftedness and the content in the traditional curriculum (McCoach & Siegle, 2003), (b)

the presence of a learning or other disability that hindered gifted students' ability to reach their potential, and (c) the presence of social or emotional problems that affected students' academic performance (Reis & McCoach, 2000). Underachievement in gifted students has been defined as a chronic or situational state that affected students' academic performance (McCall, Evahn, & Kratzer, 1992).

However, gifted students who have adequate achievement in school but do not succeed on college entrance tests have not been studied. Achievement on the national college entrance test (*Prueba de Selección Universitaria*, PSU) in Chile has been studied recently. Contreras, Corbalan, and Redondo (2007) found that students from low SES and attending public schools scored 142 fewer points than students from high SES attending private institutions. In the case of gifted students attending a university-based enrichment program in Chile, differences up to 411 points on the PSU could be found between gifted students attending public and voucher (charter) schools (Beta Program, 2011).

Some Chilean authors have found that the real predictors of students' achievement on the PSU were educational opportunities and social traits. Miller (1995), who investigated differences in achievement between ethnic groups, explained those differences through the lens of students' educational backgrounds. The quality of the education received, both formal and informal, would be consistently lower for Latino and African American students than the education received by White students, which translated into a "cumulative educational disadvantaged experience" (p.35) for the first two groups.

Psychological variables. Even though the academic component has been very important for the transition to college, psychological and environmental variables might also play a key role in a student's academic performance, as well as in the decision and commitment to continue higher education studies. Some of the variables that have been studied widely in the achievement and performance of gifted students are self-concept, self-esteem, motivation, perfectionism, and resilience (Laycock, 1984; Speirs Neumeister & Hebert, 2003; Speirs Neumeister, 2004; Rinn & Plucker, 2004; Hammond, McBee, & Hebert, 2007). In the first paper presented in this dissertation, in which I investigated the topic of students' transition to college by analyzing the influence of different individual factors on college entrance scores, only the concepts of self-esteem and motivation were addressed. The reason for choosing these two traits was that they were considered closely related to student achievement, as has been suggested by different researchers (c.f. Di Fabio & Palazzeschi, 2009).

Self-Esteem. Self-esteem has been defined in multiple ways; one of the first definitions, as conceptualized by Rosenberg (1965), was a "favorable or unfavorable attitude toward oneself" (Rosenberg, 1965, p.15). However, the concept of self-esteem has evolved from a purely psychological construct to a context-based definition, depending on the environment in which self-esteem was manifested. In this way, we could find, for example, a definition of organizational (workplace) self-esteem as well as an academic self-esteem. Moreover, researchers have investigated the progress and evolution of self-esteem through the lifespan, identifying two central components to self-esteem: competence and worthiness (Mruk, 2006).

Researchers have not reached consensus about the effects of self-esteem on academic performance (Baumeister, Campbell, Krueger, & Vohs, 2003; Marsh & Craven, 2006). However, the results obtained by different researchers depended on the definitions and instruments used to measure the construct of self-esteem. Some current researchers preferred to use the concept of academic self-concept as a broad and complex construct that has a reciprocal relationship to academic performance (O'Mara, Marsh, Craven, & Debus, 2006).

The relationships among gifted students' self-esteem, performance, and achievement generally has been studied in special populations such as gifted underachievers and gifted students from ethnic minorities. Perhaps one of the most common concepts associated with academic self-esteem and self-concept in gifted students has been the Big Fish Little Pond (BFLP) effect. The BFLP effect could be explained as the feelings associated with being in regular classes rather than in special programs for gifted students. When in regular classes with students of mixed abilities, gifted students had higher academic self-esteem and self-concept than when placed in homogenous classes for gifted populations (Zeidner & Schleyer, 1999). This phenomenon occurred because gifted students tended to compare their competencies and abilities with their peers. Therefore, when comparing with peers with the same ability level, feelings of incompetence could arise due to the academic competitiveness that emerged from this comparison.

For gifted underachievers, poor self-perception and a low self-esteem regarding their academic abilities has been found. Excessive self-criticism, fear of failure and

success, and performance anxiety have been identified as characteristics of this population (Reis & McCoach, 2000). For gifted students from ethnic minorities, the concept of self-esteem has been studied in relation to racial identity. Self-esteem, when conceptualized through the construct of ethnicity, was found to have an impact on students' achievement, motivation, and attitudes toward school (Exum & Colangelo, 1981; Moore, Madison-Colmore, & Smith, 2003). A lack of recognition of students' cultural diversity could affect their academic success and the possibility of attending special programs for the gifted because students and families with an ethnically diverse background might "hide" or not fully understand what was the meaning of being identified as gifted in a primarily White environment (Exum & Colangelo, 1981).

Motivation. Although the concept of motivation has been defined widely and studied in many different contexts, the concept that was considered for this research was achievement motivation. Achievement motivation has been defined in many ways, from a rigid type of trait to a concept that could be analyzed from a social cognitive perspective (Dai, Moon, & Feldhusen, 1998). Motivation itself as a concept has been defined as a goal-setting mechanism that has helped people direct their actions. Achievement motivation has been conceptualized as "motivation relevant to performance on tasks in which standards of excellence are operative" (Wigfield, Eccles, Roeser, Schiefele, & Davis-Kean, 2009, p.1). Achievement motivation has been investigated over the years, always related to other elements of motivation, to analyze the relationship between constructs. Examples of these constructs related to achievement motivation have included

self-efficacy, competence-related beliefs, goal-setting for learning, interest in learning, and value placed on achievement (Bandura, 1977; Schunk & Rice, 1991; Weiner, 2005).

Achievement motivation could be a factor used to help in explaining why some gifted students have been more successful than others in academic endeavors (Terman, 1959). Investigating achievement motivation and perfectionism in gifted college students, Speirs Neumeister (2004) found that, depending on the type of perfectionism (i.e. self-oriented or socially prescribed), gifted students showed different patterns in the goals and behaviors that led to academic achievement. Students who had self-oriented perfectionism had high internal motivation for academic achievement because of a desire for continuous self-improvement and a clear orientation toward learning. Because of these patterns, students with self-oriented perfectionism set goals for their academic achievement and displayed different motivational strategies. On the other side, socially prescribed perfectionists had a different achievement motivation, related to a constant fear of failure, which was related to a fear of negative evaluation from others and a generalization of their own failures.

Other authors have preferred to conceptualize achievement motivation as intrinsic academic motivation, which has been shown to be a positive predictor of achievement in gifted students. Gottfried and Gottfried (2004), based on this idea, proposed the concept of “gifted motivation”, suggesting that giftedness could not only be conceptualized by high abilities in cognition, but also by intrinsic motivation, which also could be a strong predictor of students’ performance. These authors found that academic intrinsic motivation was a rather stable construct that was identified as positively correlated to

different academic achievement indices, such as standardized achievement test scores and cumulative high school GPA. Gottfried, Cook, Gottfried, and Morris (2005) conducted a longitudinal study, following students from adolescence to early adulthood, and found that academic intrinsic motivation, conceptualized by them as “gifted motivation”, predicted academic achievement on different standardized tests, GPA, high school completion, SAT scores, and postsecondary education advancement.

The relationship between motivation and giftedness has been debated by many scholars, especially regarding whether motivation should be part of the construct of intelligence. Researchers such as Renzulli (1986) and Feldhusen and Hoover (1986) proposed that motivation and task commitment were traits that should be included to understand the complex nature of giftedness, because motivation was a component that helped gifted students to develop new knowledge and abilities. However, many authors have indicated the opposite, stating that motivation was a catalyst, a contributor, a construct that had its own path of development and was influenced by personality and environmental factors (Gagne, 1995; Gottfried & Gottfried, 2004; Schick & Phillipson, 2009). In this dissertation, I have conceptualized and measured motivation as a complementary construct that could have an effect on gifted students’ achievement and desire to persist in college.

Adaptation to College

After students have been able to overcome the difficulties and barriers associated with the transition to college and they have chosen their majors or careers, new social, emotional, and academic challenges have occurred in this brand new context to which

students need to adapt. The first year of college has been defined as relevant and crucial, not only because the majority of content knowledge is acquired during the first two years of college (Pascarella & Terenzini, 2005), but also because the first year of college is important for students so they could build a foundation for academic success and persistence (Reason, Terenzini, & Domingo, 2006). In addition, college experiences during the first year have been defined as adjustment processes in which the student made social and emotional adaptations, established new relationships, and dealt with feelings of anxiety, loneliness, and commitment.

Social and emotional adaptation. Perhaps one of the most important elements of the first-year college adaptation has been for students to create social networks and make new friendships. This social adaptation that has occurred in the transition to adulthood might provide opportunities as well as challenges (Bronfenbrenner, 1979a), especially the adaptation to an environment that has been described as increasingly more diverse and physically larger than the high school context. For Chilean students in particular, public universities have been the places in which students from different SES, ethnic backgrounds, and educational backgrounds shared the same environment. This could represent a challenge because students in Chile, depending on the type of high school they attended, were used to interact only with other high school students with the same socioeconomic background. Therefore, this socioeconomic segregation of schools could foster possible misconceptions and prejudices toward certain groups when students attended college (Martinez, 2011). For example, one of the beliefs that could be held by some students is that individuals with high SES would be “snobbier” than them.

Emotionally detaching from parents and friends from high school and establishing new relationships has been investigated as one of the challenges in the transition and adaptation to college. These changes could lead to feelings of loneliness because of the lack of social support networks and the challenge of creating new ones (Paul & Brier, 2001). However, if viewed as opportunities, friendships and new networks could provide social benefits for several students, such as gifted students, who have (a) been unsuccessful in establishing high-quality friendships during high school, (b) experienced loneliness, or (c) not been able to maintain their friendships when entering college (Bohnert, Aikins, & Edidin, 2007).

Another type of challenge in the adaptation to college has been related to psychological and/or emotional factors, mainly the ability to cope with stressful academic situations and dealing with frustration. In the case of gifted students, self-concept “strikes back” perhaps with more intensity than high school experiences. Students could experience the reverse or negative BFLP effect (Marsh, Kong, & Hau, 2000), because in college the pond has been larger, and therefore many “big fishes” could be found in a college classroom. This situation could have an effect on students’ academic self-concept, especially in self-perceptions of being gifted. As shown in the second paper of this dissertation, students tended to compare their own academic performance to other college students or classmates, which led to a continuous questioning of their “gifted” label. Even though some level of self-questioning could have a positive impact on academic performance, an overall feeling of diminished capabilities could be detrimental to students’ performance and achievement in college.

Academic adaptation. College academic demands could be highly challenging for students. This is especially true if the previous academic preparation, curriculum, and cultural capital of students have not been at an equally high level.

In the case of gifted individuals, students who had strong parental academic support, participated in Advanced Placement classes, and went to private schools (in the case of Chile) had more chances to succeed academically in college than their peers who did not have these experiences (Gonzalez & Espinoza, 2010). Participation in extracurricular enrichment programs for gifted youth also could have an effect on the development of high order abilities that were needed in a college context. In the second paper presented in this dissertation, students who had participated in a university-based enrichment program for gifted students and were in their first year of college placed high value on the skills acquired in that program, such as creative and critical thinking.

On the other hand, students from vulnerable populations, such as low-income or ethnic minorities, even with high abilities, did not have the same opportunities to succeed in college (Gandara, 1995). Because of low quality previous learning experiences or an inadequate high school curriculum that did not meet their needs, gifted students could experience a *situational underachievement* (McCall, Evahn, & Kratzer, 1992) in college that might not have happened before in high school, which could lead to failing classes, changing majors, or leaving college. In fact, 30% of gifted students from a Chilean program reported to have failed one class, and 20% had failed two or three courses (Beta Program, 2011).

Persistence

The phenomenon of college persistence has been defined as happening when transition and initial adaptation have already occurred. College persistence could be understood as degree completion (Kirst & Bracco, 2004), or as continued enrollment that included course completion. Some authors defined persistence as a more general concept, that is, students progressing from one level to another based on their educational goals (Prince, Seppanen, Stephens, & Steward, 2010).

Variables affecting college persistence. As important as the definition of college persistence was the inclusion of variables that affected this phenomenon. Through the study of the different interrelated variables and factors, authors have created different models to explain college persistence, which include both individual and environmental factors. Tinto (1993) found that the main components of college persistence were students' previous academic achievement, socioeconomic and ethnic background, parental support, and integration and commitment to the higher education institution. Other authors have added the component of interaction between the students and members of the institution, such as other students and faculty members, which would determine the degree of commitment students have toward the institution (Pascarella & Terenzini, 1980). For an ecological view of the concept of college retention, authors also have added psychosocial variables to explain the phenomenon, such as goal-setting, self-perceptions (Ethington, 1990), and gender expectations (Bean, 1980).

Student background variables. The study of the weight of different variables and their relationship to college persistence has been vast and complex. Probably the

variables that have been studied the most are students' socioeconomic (e.g. SES, father and mother education) and academic backgrounds (e.g. high school GPA, SAT scores). The incorporation of these variables into the investigation of students' persistence in college has been related to the increasingly diverse student population in higher education institutions around the world. In the case of the United States, students were no longer viewed as men, White, and highly educated (Reason, 2003), because the college entrance rates of students with diverse ethnic backgrounds, women, and older students have increased significantly in the past 10 years. In the case of Chile, students from different socioeconomic and educational backgrounds enter college every year. Unfortunately, attrition rates for students coming from low socioeconomic backgrounds could be as high as 40% in the first year for students in Chilean universities (Martinez, 2011).

Students' academic backgrounds and preparation —usually measured by their achievement on the SAT test and student GPA—also have been studied widely and have been determined as significant predictors of college persistence (Tross et al., 2000). For example, a student who entered college with an A was more likely to graduate in four years than a student who entered with a C. At the same time, students with the highest SAT scores were six times more likely to graduate in four years than their counterparts with low scores (Reason, 2009). In Chile, few researchers have investigated the relationship between GPA, the results on the PSU, and college persistence; however, some investigators have pointed out that the *combination* of both was what could predict student academic success and therefore persistence in college (Perez, Ortiz, & Parra 2011). Graduate Point Average by itself in Chile has not been considered as a good

predictor because of the *grade inflation* phenomenon that constantly occurs in public high schools in Chile, where grades have been distorted and elevated and have not reflected students' actual performance (Neira, 2004).

Psychosocial variables. Psychology theorists have been increasingly interested in psychosocial variables as determinants of student success and persistence in college. Robbins et al. (2004) even suggested that the strong relationship that psychosocial variables could have with student achievement has drawn the attention of universities as a valuable complement to standardized testing to predict future student success. In fact, according to Robbins, Lauver, Le, Langley, and Carlstrom (2004), 40% of student success could be attributed to psychosocial variables. Many psychosocial components have been found to be related to students' persistence, such as the ones conceptualized by Kim et al. (2009): (a) academic self-efficacy, (b) study organization, (c) stress, (d) involvement with the institution, (e) satisfaction with academics, and (f) communication.

The persistence rates and variables that affected persistence in gifted college students have not been addressed widely in the literature. For the purposes of the third paper presented in this dissertation, a combination of variables was considered to investigate their relationship to students' persistence. Sociodemographic variables and previous academic background were chosen because of the correlation with college persistence. Psychosocial variables chosen for the study were not drawn necessarily from the college persistence literature; however, these variables were chosen because they have been studied in the field of the education of gifted students and because of the

existence of valid and reliable instruments to measure them. Therefore, the psychosocial variables chosen were the following: perfectionism and resilience.

The Chilean Educational System

The Chilean educational system differs from the educational systems of other nations because of the political and administrative organization of the country. Given the fact that the three papers presented in this dissertation were based in the Chilean educational context, I have decided to present a brief overview because the results of these investigations need to be understood and interpreted in the light of this educational system.

Chilean schools have had a unique national curriculum dictated by the Ministry of Education, which underwent a major reform in 1999. This national curriculum included a *minimum curricular content* that needed to be addressed by each school to assure that every student was prepared to face either high school or college demands. The Ministry of Education also has been designated as the responsible entity to design and implement national standardized assessments such as the Measurement System of the Quality of Education (SIMCE) and the University Selection Test (PSU).

Recently, the country has been divided into 15 regions (similar to states) that have not been 100% autonomous from the central government. Each region has supervisors from municipalities (similar to districts in the U.S) that oversee all the schools located in that municipality.

Types of Schools

Three types of schools could be found in the Chilean educational system according to the type of financing they received. Public schools received a 100% subsidy from the government for each student attending that school; voucher schools (similar to charter schools in the U.S) received a partial subsidy and the rest of each student's tuition came from parents' income; finally, the tuition of students who attended private schools was 100% financed by the parents. Seven out of ten students from private schools belonged to the 20% of the population considered to be the highest SES in the country. On the other hand, seven out of ten students from public schools came from the 40% of the population with the lowest SES (Momborg, 2004).

The quality of the different types of schools was varied and defined by the scores obtained by students on the SIMCE and PSUs. When comparing students' performance on both tests, the percentage of academically successful public schools has been lower than private schools. Fifty-two percent of students in public schools have a low performance on these tests, whereas 75% of students who attended private schools had a successful performance on the assessments (Eyzaguirre & Fontaine, 2008).

Types of High Schools

Two types of public high schools existed in Chile according to the academic orientation of these institutions: schools with a 100% academic curriculum and trade schools, which had a combination of an academic curriculum and apprenticeship to a trade. Students who attended the first type of high school usually received an academic preparation for college in science, mathematics, or humanities. Academic high schools in

Chile could be public, voucher, or private. On the other side, students who attended trade or vocational schools underwent two years of academic curriculum, and in the 11th grade they had to choose a trade of their preference (e.g. carpentry and mechanics, graphic design, and commerce and administration). Trade schools in Chile could be public or voucher; however no private trade schools existed in the country.

The quality of the different types of high schools differed enormously and was dependent upon geographical location, student population, student selectivity, and funding. Usually, the performance of students who attended private and voucher schools exceeded the performance of students from public schools.

The reasons for students to choose one school or the other have been based mainly on families' SES and students' geographical locations. All students from high SES have attended private or voucher high schools with an academic orientation. Students from low SES have chosen academic high schools based on their past achievement and closeness to the school. Many students made this decision because their parents' expectations were for them to receive a technical diploma to incorporate quickly into the workforce (Miller, 2011). For other students, because of the neighborhood in which they lived and the existing distance to some high schools, they could not attend an academic high school and chose a trade school to continue their secondary studies.

College Entrance Test

For more than 20 years Chile had a national entrance evaluation that was an ability-based test called the Test of Academic Aptitude (*Prueba de Aptitud Académica*, PAA). However, the central government, in a decision to put pressure on schools to raise

their academic standards and provide high quality education to *all* students, changed the original test to a content-based assessment called the Test of College Selection (Prueba de Seleccion Universitaria, PSU). This test has been shown to have high reliability and validity (Donoso & Schifelbein, 2007); however, according to several researchers, the evaluation, instead of raising standards, has shown the profound differences and inequalities between schools, especially between private and public schools. Seventy-five percent of students from private schools achieved the highest scores on the first application of the PSU whereas only ten percent of students from public schools achieved the same results. From the 30 schools with highest scores, only two were public (Momberg, 2004).

Scores obtained on the PSU, combined with high school GPA, have been the basic requirements for students to apply to a major and a college. However, renowned colleges and certain majors in Chile required a fairly high entrance score. For this reason, students have needed at least 600 points or more to access the most renowned careers and colleges. Students with lower scores could either apply to a less renowned institution or choose a private university. Many students have decided to delay college and attend preparation courses to retake the PSU at the end of the year.

College

In Chile, instead of majors, students have chosen careers (e.g. Psychology, Medicine, Business, Civil Engineering) that had an average length of 5 to 7 years. Each career had a core curriculum mandated by each department; and courses of this

curriculum needed to be followed in a sequential manner. Students could choose between optional and general courses that constituted a complement to the core curriculum.

Universities that have offered careers could be divided into two: semi-public and private institutions. Semi-public colleges (that were once completely public) had a local administration, received public (government) funds, but also charged tuition to students. Costs of the tuition for semi-public colleges were considerably high and usually students or the parents needed to have loans to attend college, in addition to other types of scholarships for food and supplies. On the other side, private universities also offered careers; however, tuition costs could be twice as high as in semi-public institutions and most private colleges did not require college entrance test scores. The quality of semi-public and private universities varied, the same way as schools, depending on several quality standards, such as scores obtained by students on the PSU, amount and quality of research conducted in the institution, percentage of publications in renowned journals, and other academic and institutional indicators defined by the Ministry of Education.

Analysis of Methods

The purpose of this section was to provide an analysis of relevant literature included in this dissertation. Specifically, the goal was to examine the strengths and weaknesses of the methods and an overview of the findings of the studies to lay the foundations for the studies presented in this manuscript.

Article search was done using hand searches, reference chasing, and database searches using electronic databases such as PsychInfo, the Education Resources Information Center (ERIC), and PsycARTICLES. Specific journals included in the searches were Gifted Child Quarterly (GCQ), Roeper Review, Journal for the Education of the Gifted, and Gifted Education International. The overarching research topics that guided the searches were *education of gifted students* and *higher education*. Some of the specific keywords used were *gifted college students*, *college readiness*, *college persistence*, and *transition to college*. The criteria for choosing the studies were the following: (a) only research studies included in the three manuscripts were selected, (b) only studies that included high school or college student samples were considered for analysis, and (c) studies were only from peer-reviewed journals. Twenty-five studies were included and analyzed in this section.

Articles under the topic of college readiness and persistence were mainly quantitative and methods were analyzed following specific criteria, such as the indicators proposed by Thompson, Diamond, McWilliam, Snyder, and Snyder (2005) and the guidelines from Galvan (2009). The main elements that were considered for the analyses were the following: (a) suitability of the research design for the purposes of the study, (b)

adequacy of the instrument and reports of reliability and validity measures, (c) precision in the description of the samples, and (d) accuracy of reported results (e.g. reports of p values and effect sizes).

Qualitative research was analyzed using criteria stated by Brantlinger, Jimenez, Klingner, Pugach, and Richardson (2005), which included the following components: (a) use of an adequate sample, (b) triangulation of results, (c) peer debriefing, (d) external consultation (e.g. expert consultation or member check), and (e) thick description of the results.

Results

The results of the analyses have been presented following the same progression as the manuscripts: (a) research related to college readiness, (b) studies associated with students' adaptation to college, and (c) studies related to the characteristics of gifted students and their persistence in higher education.

College readiness. The methods and findings of 10 studies were analyzed within the topic of college readiness. A summary of these studies including variables, methods, and findings has been presented in Table 1.1. Eight of the studies were conducted in the United States, one in Hong Kong and one in Italy. The sample sizes of the studies ranged from 35 to 25,000 college students.

Table 1.1
Studies related to College Readiness and Student Achievement

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Adelman (2006)	Background variables: demographic, high school, and postsecondary	Logistic regression	Curriculum quality and intensity had an important effect on students' outcomes on standardized tests and performance in college.
Di Fabio & Palazzeschi (2008)	Intelligence	Correlation between achievement measures and fluid and emotional intelligence	Intelligence, particularly emotional intelligence, had an important role in students' achievement.
Eppler & Harju (1997)	Achievement motivation	Correlation between achievement motivation and cumulative GPA and SAT scores	High achievement motivation, reflected by students' clear learning and performance goals, had a positive influence on their achievement in college.
Gottfried, Cook, Gottfried, & Morris (2005)	Academic intrinsic motivation (gifted motivation)	Longitudinal study from adolescence to early adulthood; analysis of <i>gifted motivation</i> and GPA, SAT, postsecondary achievement	'Gifted motivation' was a strong predictor of academic achievement and success in college.
Marsh (1990)	Self-concept	Longitudinal, cross-cultural study. CFA analysis of self-concept and achievement scores throughout childhood	As children grew older, their academic self-concept became more reliable, more stable, and more strongly correlated with academic achievement.

(Continued)

Table 1.1
Studies related to College Readiness and Student Achievement

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Menson, Patelis, & Doyle (2009)	High school curriculum	Descriptive statistics; differences in SAT scores	Students who participated in a rigorous high school curriculum had significantly higher SAT scores (50 points higher in math, reading, and writing) than students from high schools with a non-rigorous curriculum.
Ramist, Lewis, & McCamley-Jenkins (1994)	Ethnic background (African American)	Analysis of the predictive value of SAT on GPA	African American and Hispanic students had lower SAT scores than White and Asian peers.
Speirs Neumeister (2004)	Achievement motivation and perfectionism in college students	Mixed methods; achievement motivation questionnaires and interviews with students	Students who had self-oriented perfectionism had high internal motivation for academic achievement. Socially prescribed perfectionists had a different achievement motivation, related to a constant fear of failure.
Van Tassel Baska & Willis (1987)	Socio Economic Status (SES)	Correlation between gifted students' SATs and their socioeconomic backgrounds	High income gifted students performed significantly better on the SAT than the low income gifted group. The greatest disparity was observed in the mathematics subtest.
Verna, Campbell, & Beasley (1997)	Self-concept and achievement on gifted students	Multiple regression; path analysis	Male students had a higher self-concept than females, boys had higher scores on the SAT than girls, and SES was a strong predictor of achievement.

Methods. Eight of the studies were correlational, one was descriptive, and one was a mixed-methods investigation. Researchers in all of the studies used self-report instruments to measure several variables; however, only five (50%) of the researchers informed readers about reliability values of the instruments. Researchers in four studies (40%) informed readers about the validity of instruments, mainly construct and/or face validity. Researchers in two studies, who used measures especially constructed for their investigations, gave reports of concurrent validity of those instruments. Half of the studies used the SAT and reported its predictive validity. Samples were described in depth in seven of the ten articles (70%); however, information about students' educational backgrounds (e.g. type of school the students attended) was available only in one study. The reporting of statistical information to replicate and/or generalize the results was insufficient in five of the studies (50%); statistical significances (i.e. p values) were always reported, but effect sizes were addressed only by two researchers (20%). These researchers reported the effect sizes but did not interpret these effects, as suggested by Thompson et al. (2005).

Results. Findings within the topic of college readiness could be divided in two main areas: (a) how effective was students' academic preparation to attend college and (b) how well did students achieve on standardized tests for college entrance and the individual and contextual variables that had an effect on that achievement.

Adelman (2006) and Menson, Patelis, and Doyle (2009) found that students' preparation for college usually was influenced by the type of curriculum they had in high school and how the implementers of the curriculum provided the necessary content

knowledge and skills to succeed in college. Adelman, in the study he conducted with a large sample of National Center for Education Statistics (NELS:88/2000) data, concluded that *curriculum intensity* was, after several years of research, the variable that most affected students' academic experiences in college. Menson, Patelis, and Doyle, following the same premise of the importance of curriculum intensity, found that if modifications were introduced into the New England high school curriculum and more rigorous courses were offered, significant differences were found in students' readiness for college.

Students' achievement results on college entrance tests have not been influenced only by the curriculum. Researchers also have investigated the relationship between specific variables and students' achievement on standardized tests such as the SAT or other similar college entrance tests. Within this topic, I was able to find more studies in which researchers included samples of gifted students than in the topic of college readiness. For the population of gifted students, the findings were the following: (a) low income gifted students achieved lower scores on the SAT than their counterparts from high socioeconomic backgrounds (Van Tassel Baska & Willis, 1987; Verna, Campbell, & Beasley, 1997); (b) African American and Hispanic students had lower achievement on the SAT and in college than their White and Asian counterparts (Ramist, Lewis, & McCamley-Jenkins, 1994); (c) students' self-concept was highly correlated with their achievement, with male gifted students having a higher self-concept than females (Marsh, 2000; Verna, Campbell, & Beasley, 1997); (d) students' achievement motivation and "gifted motivation" were predictors of academic success in college (Eppler & Harju,

1997; Gottfried, Cook, Gottfried, & Morris, 2005); (e) students' intelligence had moderate to high correlation with their achievement on standardized assessments (Di Fabio & Palazzeschi, 2007); and (f) students with a self-oriented type of perfectionism were more likely to achieve better than students with socially prescribed perfectionism (Speirs-Neumeister, 2004).

Adaptation to college. Six studies related to students' adaptation to college were analyzed and a summary of those studies has been shown in Table 1.2. All the studies were conducted in the U.S. and the sample sizes ranged from 6 to 294 students.

Table 1.2
Studies related to Students' Adaptation to College

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Bohnert, Aikins, & Edidin (2007)	Social adaptation to college (friendships and social networking)	Two-time measures before entering college (Time 1) and during the first months of college (Time 2)	Students with better scores in Time 1 had more successful social experiences in college than their peers who did not have the same experiences. However, social networking within college was an important factor for students with poor previous social relationships.

(Continued)

Table 1.2
Studies related to Students' Adaptation to College

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Hammond, McBee, & Hebert (2007)	Gifted college students' paths to success	Interviews with students	Motivation was a main component of students' adaptation to college. Elements that affected that motivation were independence, creating a social network, overcoming difficulties, determination, and desire to be recognized by their accomplishments.
Hertzog (2003)	Influence of programs for the gifted on gifted college students	Questionnaires and interviews	Gifted students placed high value on their previous experience on programs for the gifted. However, the "gifted" label was difficult to handle at the college level.
Muratori, Colangelo, & Assouline (2003)	Social adaptation to college of gifted students	Interviews, observation, and surveys with students and parents	Forming new relationships in college was a difficult experience for some of the students; however, they were capable of integrating socially into the institution by making new friends.
Rinn (2007)	Academic adaptation to college by gifted students	Analysis of covariance of GPA, academic self-concepts, and educational aspirations of students participating in Honors Programs in college and those who were not	Gifted honors students had significantly higher academic achievement, higher academic self-concept, and better adaptation to college demands than non-honors gifted students.

(Continued)

Table 1.2
Studies related to Students' Adaptation to College

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Reis McGuire, & Neu (2000)	Academic adaptation to college by gifted students	Interviews with gifted college students with learning disabilities	Students who had successful academic integration in college displayed a series of compensatory strategies, such as constant use of different learning strategies, better study habits, and effective use of compensatory supports offered in college.

Methods. Two studies were correlational and four were qualitative. Researchers in both correlational studies used several (> 3) self-report psychosocial questionnaires and informed readers about reliability measures for all the instruments used. Information about the validity of the questionnaires was not provided by any of the authors. Only in one of the studies did the researchers provide a thorough description of participants that included sex, age, SES, ethnic background, and college-related information. The researcher in the second study only informed readers about three characteristics of the sample: gender, major, and year in college. Statistical significances were reported by both authors; however, no information about effect sizes could be found.

All the researchers used interviews to conduct their qualitative studies and selected adequate samples (n= 6-50) of gifted college students. Investigators in three of

the studies (75%) used one or more procedures to triangulate the data from their studies. The common triangulation procedures were combining interview data with document analysis and observations. Researchers in all studies but one reported having performed some kind of peer collaboration or team work for the analysis of the data, and in only two studies (50%) researchers did external consultation—usually member check—for verification or clarification of results. In all of the studies, the authors provided thick descriptions of the data they collected, providing explanations of participants' narratives and complementing interpretation of results with excerpts from the interviews they conducted with the students.

Results. Gifted student's adaptation to college could be subdivided into two major topics: adaptation to college that included achievement in college and academic skills (academic adaptation) and college experiences related to psychosocial characteristics (psychosocial adaptation). Researchers who investigated academic adaptation had the following findings: (a) students whose giftedness was recognized at a college level—students who participated in Honors Programs—had higher achievement and fewer academic struggles than their gifted counterparts who did not participate in this type of programs (Rinn, 2007); (b) gifted students who were successful academically in college used compensatory approaches such as learning strategies, consistent study habits, and available support when they needed them (Reis, McGuire, & Neu, 2000).

Findings about psychosocial adaptation included students' social networks and relationships, motivation, and perceptions of being labeled as gifted previous to their entrance to college. Forming social relationships was hard at the beginning of their first

semester because students were still feeling emotionally attached to their families and other people they left when going to college (Muratori, Colangelo, & Assouline, 2003). However, besides these initial difficulties, students were capable of integrating successfully into the institution. Motivation of gifted students, also called “gifted motivation”, was an important factor in the process of adapting to college. Higher levels of motivation were found in students who participated in different academic and extracurricular activities and who strived to create meaningful relationships with peers (Hammond, McBee, & Hebert, 2007). Finally, the fact of being identified as gifted before entering college and participating in special programs had several costs and benefits: students felt they were prepared better for college demands, but they felt negatively about the label because of the sometimes unrealistic expectations held by individuals (e.g. faculty and peers) in their immediate environment (Hertzog, 2003).

Students’ characteristics and their persistence in college. Nine studies under the topic of college persistence were analyzed and a summary of the methods and findings has been shown in Table 1.3. All of the studies were conducted in the United States. The sizes of the samples in eight studies were larger than 1,000 students, except for one qualitative study in which the sample size was 12.

Table 1.3
Studies related to Students' Characteristics and their Persistence in College

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Bean (1980)	Background, organizational and intervening variables	Multiple regression; path analysis	Differences were found for male and female students' persistence in college. Females' and males' persistence was defined by commitment and performance; however, for the group of male students satisfaction also was an important variable to consider.
Cabrera, Nora, & Castaneda (1992)	Pre college variables, GPA, financial status, enrollment, commitment, integration	Structural equation modeling (SEM)	Students who worried less about finances or financial aid were more likely to persist in college, establish social relationships, commit to the institution, and have a better academic performance than students who were struggling with finances.

(Continued)

Table 1.3
Studies related to Students' Characteristics and their Persistence in College

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Ethington (1990)	SES, achievement, family, self-concept, goals, expectations, desire for recognition	Path analysis	Goal orientation was found to be one of the most important variables affecting students' persistence.
Horn & Hojaku (2001)	College GPA, high school curriculum, SAT, college curriculum	Univariate and multivariate analyses	A strong relationship was found between students' high school curricula and their persistence in college. This was true both for maintaining enrollment at the institution they originally applied to or staying on track to a bachelor's degree if they transferred to another institution.
LoCicero & Ashby (2000)	Perfectionism	Univariate analyses	Gifted students had higher levels of the adaptive type of perfectionism, which did not translate into maladjustment to academic environments.
Pascarella & Terenzini (1980)	Sex, ethnicity, high school GPA, SAT, income, parents' education, college choice, expected degree	Principal component analysis (PCA); multivariate analysis of covariance (MANCOVA)	Frequency of informal contact between faculty and students had an important influence on students' persistence.

(Continued)

Table 1.3
Studies related to Students' Characteristics and their Persistence in College

Author(s)	Analyzed Variables	Methods/Procedure	Findings
Reason (2009)	Pre- college achievement	Analysis of the predictive value of GPA and SAT for college persistence	Students with a high GPA were more likely to finish a four year degree. Students with high SAT scores were six times more likely to graduate in four years than their counterparts with low scores.
Speirs-Neumeister & Filch (2006)	Perfectionism	In-depth interviews	Socially prescribed perfectionists tended to procrastinate and set performance-avoidance goals. Self-oriented perfectionists tended to set performance-approach goals and were individuals focused on attaining competence.
Wetzel, O'Toole, & Peterson (1999)	GPA	Logistic regression	Positive changes in a student's cumulative GPA contributed to their persistence in college.

Methods. All the researchers using quantitative approaches to investigate the topic of college persistence used multiple statistical analyses for the study of different variables to create tentative and explicative models of student persistence. For this purpose, the usual approach included the use of statistical information about students (e.g. sex, SES, SAT scores, and GPA) available in national or local databases. The

analysis of these variables was complemented by the use of self-report questionnaires to measure other variables such as attitudes and psychosocial experiences. Researchers investigating the psychosocial characteristics of gifted students in college usually measured one or two traits through the use of self-report questionnaires. Six (66%) of the researchers reported reliability coefficients using Cronbach's Alpha or factor analysis, and only three (33%) provided information about the validity of the instruments—mainly concurrent and predictive validity. Seven researchers (77%) gave a thorough description of the samples of college students. Similar to the articles related to college readiness, researchers did not always report facts about students' educational backgrounds. In all the quantitative studies, complex statistical analyses were performed and detailed information about the results was given by the researchers. However, only four (44%) informed about effect sizes and/or direction of the effects. Interpretation of the effect size was done in one of the studies (11%).

The methods of the qualitative study included in this section had the following strengths and weaknesses: (a) researchers chose an adequate sample that suited the purposes of their research, (b) data triangulation was conducted, combining interviews with document analysis, (c) no team work was performed for data analysis, (d) external consultation was done in the form of member checks, and (e) thorough descriptions of the themes and categories were provided by the investigator.

Results. Findings in this section were (a) models explaining the combination of variables affecting student persistence in college and (b) profiles of gifted college students' psychosocial characteristics.

Models created to explain college persistence were varied and researchers intended to demonstrate the weight of different variables. Some researchers were interested in the predictive value of contextual and/or psychosocial variables, finding that goal orientation (Ethington, 1990), relationships with faculty members (Pascarella & Terenzini, 1980), students' commitment to the institution (Bean, 1980), and the degree to which students had to worry about their financial situation (Cabrera, Nora, & Castaneda, 1992) were influencing students' satisfaction and therefore their desire to persist in college. Other investigators included the analysis of "hard" variables into models of college persistence and found that pre-college data were important when analyzing students' persistence, such as achievement results in high school and standardized tests (Reason, 2009; Wetzel, O'Toole, & Peterson, 1999). However, achievement variables were not the only ones used by researchers to explain college persistence. The academic rigor of the high school curriculum was an important component to explain persistence and graduation rates of college students (Horn & Hojaku, 2001).

The variable that was most examined by researchers investigating gifted students in college was perfectionism. The main findings were that even if students had higher levels of perfectionism than their non-gifted peers, this was a healthy and adaptive type of perfectionism that did not affect students' academic and social experiences in college (LoCicero & Ashby, 2000). Speirs-Neumeister and Filch (2006), however, found that some college students had an unhealthy type of perfectionism—socially prescribed—that affected the way they approached academic tasks in college, with students showing a tendency toward behaviors of procrastination and avoidance.

Conclusion

Most of the studies reviewed in this section have been conducted using large surveys and contained primary or secondary analysis of self-report data. The use of self-report data has been controversial and its validity has been questioned because of the effect of recall bias (Dunbar, 1980) and its retrospective nature. However, the use of questionnaires and other self-report measures has been defined as necessary in current research to gather large amounts of information from students. To counteract the possible effects of recall biases, many authors have suggested the use of solid and sound reliability and validity measures (Lyberg et al., 1997).

The majority of the studies analyzed did not have sufficient information about the validity of the self-report instruments used by researchers. Therefore, the use of additional techniques has been recommended by some researchers, such as interviews and observation, to ensure that the instruments have construct validity (Schick & Phillipson, 2009). Also, many of the studies analyzed, especially in the topics of college readiness and persistence, had a quantitative orientation in which investigators aimed to generate specific explanatory models of the college experience phenomenon. Therefore, the use of additional qualitative techniques might not only improve the validity of the questionnaires, but also could benefit the research designs of investigations, which could contribute to having more richness and depth about students' complex experiences in college. The studies included in this dissertation had both quantitative and qualitative methodological approaches to understand and articulate how different elements of students' experiences conjugate to explain their walks through college.

Another flaw that was detected through the analyses performed in this section was in the studies in which the investigators included samples of gifted college students. These researchers usually conducted survey studies to make comparisons between gifted and non-gifted college samples by analyzing one, two, or three psychosocial variables. However, researchers have shown that attending college was a complex experience for students that entailed an analysis of multiple factors. Throughout the investigation conducted in the third manuscript of this dissertation, I intended to combine multiple variables to analyze how—conjointly or separately—they affected gifted college students' academic, social, and emotional experiences and continuance in higher education.

One of the main methodological components that was lacking from the qualitative studies reviewed in this section was external consultation. Consulting external experts or participants could enhance the credibility of an investigation because others provided valuable information about the accuracy of the interpretations made by researchers (Buchbinder, 2011). In the qualitative manuscript included in this dissertation, I included member check, also called member validation, as a way of confirming that the analyses were authentic, accurate, and captured the richness of students' experiences.

The results of the studies that were analyzed shed light upon two aspects of the college experience: an overarching view of the main variables affecting *all* college students (e.g. sociodemographic background, loans and financial situation, and academic skills previous entering college) and specific analyses of gifted college students' characteristics. However, no combination of both types of analysis has been found in the

literature. This dissertation, therefore, was an attempt to close the gap between both fields to have a preliminary overview of what factors or combination of factors affected gifted students—one of the college groups that rarely has been included in these analyses.

CHAPTER II: MANUSCRIPT I. GIFTED STUDENTS' READINESS FOR COLLEGE:
FACTORS THAT INFLUENCE STUDENTS' PERFORMANCE ON A COLLEGE
ENTRANCE TEST

Abstract

Gifted students' performance on a Chilean university admission test, *Prueba de Selección Universitaria* (PSU) was investigated in this study. Sixty-six students participating in an enrichment-based university program for gifted youth were selected. The sample included both male and female gifted adolescents who studied in public and voucher (charter) high schools. The purpose was to investigate which combination of factors were the best predictors of students' scores and the differences between male and female students' performance. Only *intelligence*, as measured by the *Raven Standard Progressive Matrices* test, was correlated with the scores on the PSU. Males from voucher schools outperformed females on the PSU. Providing academic support and adequate preparation has been discussed as an important element for college readiness, successful transition to college, and to diminish the existing performance gap between students from different types of schools in Chile.

Keywords: gifted students, college readiness, transition to college

Introduction

College transition has been a topic that has increased in relevance in the last decade. Researchers and practitioners have been addressing topics such as inequity, social mobility, and narrowing the achievement gap between students from high and low socioeconomic (SES) backgrounds. The acquisition of high order skills and knowledge to succeed at a professional level has been a growing demand in globalized societies.

Access to higher education has been a matter of concern for many developing countries wanting to diminish the performance gap between students who come from different socioeconomic backgrounds. Students in countries like Chile have increased significantly their access to college over the past twenty years; for example, in the year 2006 in Chile, 561,000 more students entered college than in 1980 (OECD, 2009). From the population of students who have taken the official university selection test, *Prueba de Selección Universitaria* (PSU), 60% of the students came from families in the lowest socioeconomic levels (monthly income equal to or below US \$215). However, these students did not achieve the necessary scores to have access to high quality colleges and universities.

The relationship between socioeconomic level and scores attained on the PSU has been shown In Table 2.1. From the students in the lowest socioeconomic status (B1) who have taken the test, 42% have achieved less than 450 points; and with such a low score, a student could not apply to any *traditional* university (i.e. public and renowned institutions). Only 8.7% of the low-income students attained more than 600 points and 0.7% of them achieved over 700 points. Scores have been indeed relevant considering

that only with a score between 550 and 600 students would be able to select the college and major they chose (OECD, 2009). Below that average score, students were placed on waiting lists and sometimes they had to choose a major that required lesser PSU scores (but was not their first choice), had to postpone their entrance to college, or had to choose a private university in which students did not need a minimum entrance score. However, tuition rates in these institutions were considerably higher than in public universities, making them a non-viable option for students from low SES. On the other side, only 7% of students from families with high SES did not achieve the minimum scores required for college entrance, which meant that 93% of these students had access to higher education in public and renowned institutions.

Table 2.1

Relationship between PSU Scores and Students' Income Level

Income level (monthly basis)	B1 (U\$ 0- 465)	B2 (U\$ 466- 931)	B3 (U\$ 932- 1396)	B4 (U\$ 1397 or more)
Under 450 points	42%	25%	14%	7%
450-600 points	49%	56%	24%	41%
601-700 points	8%	16%	57%	39%
Over 700 points	1%	2%	5%	13%
Total	100%	100%	100%	100%

Socioeconomic status has been one of the factors affecting students' entrance to college. This variable could jeopardize the access that a student could have to higher education, even if he or she had the needed academic capacities or talents (Araujo et. al, 2006). Therefore, gifted students from lower socioeconomic backgrounds, for example, could have fewer chances to attend college than their gifted peers from high SES.

Factors Affecting College Readiness

College admission tests. A topic that has been investigated by several authors as affecting students' performance on admission tests has been the significant performance gap between students who attend private, voucher (charter), and public schools (Brunner, 2008). This fact has been more evident in Latin American countries, like Chile, where the achievement gap between public and private education has been extremely high. One fact that has been discussed was that teachers in public schools did not address the minimum curricular content that students needed to succeed on a content-based assessment such as the PSU. For example, even if a student was gifted, the lack of academic preparation in his or her public school could become an obstacle preventing admission to college. Therefore, curriculum and instruction could be critical, given the fact that quality of high school preparation was one of the most important factors for a successful transition from high school to college (Adelman, 2002).

Contextual variables. In Chile, educators, practitioners, and politicians have debated for several years about the quality of public, voucher, and private schools. Public schools have been defined as entities administered by local governments to provide free education for all students. Voucher schools received government funding but included a

co-payment for students' tuition. Finally, private schools did not receive public funding, and the students' families paid for the complete tuition. Approximately 40% of the families of students who attended public schools were from a low or medium-low SES (Brunner & Elacqua, 2003).

Students who have been educated in private schools have had higher scores on achievement tests than their counterparts from public schools. Some examples of this disparity have been the scores achieved by students on international tests such as the *Program for International Student Assessment (PISA)* the *Trends in International Mathematics and Science Study (TIMSS)* (OECD, 2009), and national test scores, for example, the national measurement system of the quality of education, *Sistema de Medición de Calidad de la Educación (SIMCE)* (Chilean Ministry of Education, 2003). Several complex factors contributed to this achievement gap. The cultural capital of the students has been defined by authors as one of the critical components of school success, meaning that students from advantaged backgrounds (i.e. educational advantage) tended to have better academic performance than their peers who were less educationally advantaged (Wildhagen, 2009).

Another factor that affected the gap between private and public schools has been the appropriateness of the school curriculum (Contreras, Corbalán, & Redondo, 2007). One of the reasons for the academic disadvantage of students in public schools has been that the national curriculum could not be addressed fully. In the case of private schools, students not only completed the national curriculum, but they also did it earlier than

public schools, which left them more time to prepare intensively for the university admission test (OECD, 2009) than their counterparts from public schools.

Income level has been conceptualized as a socioeconomic variable that has been explored widely in several studies of student achievement. Researchers have concluded that the socio-cultural and family context where the student develops also could have a strong influence on student achievement (Brunner & Elacqua, 2003). Parental involvement, such as showing interest in students' activities, and providing support without over-controlling, was a variable that appeared to be related significantly to student achievement (Jeynes, 2005). Additionally, parental beliefs and expectations about academic success, judgments made by families about academic achievement, and families' use of methods to encourage students' motivation were environmental variables related to achievement and also to students' self-concepts (Parsons, Adler, & Kaczala 1982; Woon & Chee, 2007). Verna, Campbell, and Beasley (1997) studied a population of high achieving students and the relationship between contextual and individual variables and achievement. The authors concluded that excessive parental pressure and exaggerated expectations had a negative influence on both male and female students.

Individual variables. The relationship between intelligence and achievement has been investigated and some authors have conceptualized both constructs as identical and/or causally related (Watkins, Lei, & Canivez, 2006), mainly because by measuring intelligence through different instruments, one also could measure reasoning skills that supposedly predicted academic achievement (Parker & Benedict, 2002). However, some researchers have found quite the opposite. Measures of intelligence and achievement

frequently included items, tasks, and abilities that have been influenced by school experiences and learning (Lubinski & Davis, 1992). Moreover, researchers have found even non-verbal tests that were built to measure fluid intelligence—a construct generally explained by physiological and not cultural factors—such as the *Raven's Standard Progressive Matrices* test, could be influenced by students' schooling (Stelzl, Merz, Ehlers, & Remer, 1995; Fry & Hale, 2001).

Other researchers have shown that intelligence did not have a causal and direct relationship to achievement. Mediating factors such as personality (Furnham & Mosen, 2008), motivation, and self-esteem also can have an influence on student achievement. Di Fabio and Palazzeschi (2008) conducted a correlational study with high school students and analyzed different individual variables, such as fluid and emotional intelligence, and personality traits. The authors concluded that fluid intelligence influenced achievement because of its impact on comprehension and learning. However, they also concluded that a high level of emotional intelligence was a variable that predicted students' academic performance.

The ability to believe in one's own capacities, usually conceptualized as self-concept or self-esteem, has been a factor investigated as influencing students' academic achievement (Marsh & Craven, 2006; Trautwein, Ludtke, Koller, & Baumert, 2008). Marsh and Craven (2006), through a longitudinal study, found that academic self-concept and achievement were two constructs that were mutually reinforced. They specifically stated that each one directly affected the other. Swann, Chang-Schneider, and McClarty (2007), in a review of the literature, found that academic self-esteem was subject-related,

that is, students could have different academic self-concepts according to the subject matter in which they felt more confident and perceived they had more academic competencies than their peers.

Motivation, specifically motivation to achieve, also has been a construct related to students' academic performance (Story, Hart, Stasson, & Mahoney, 2008). Achievement motivation has been defined as the ability to work toward the attainment of personal goals (Cassidy, 1989). Eppler & Harju (1997), in a study of achievement motivation using self-reporting questionnaires, found that academically successful students had clear learning and performance goals, and that they were motivated to achieve them.

The relationship between gender and achievement has been investigated extensively, especially because of the existing difference between males' and females' performance on intelligence and achievement assessments. Many investigators have found that, even though females were more self-disciplined, had lower drop-out rates, were less like to be retained one or more grades, and had better grades throughout their school lives than their male counterparts, male students still achieved higher scores on achievement tests such as the SAT than female students (Duckworth & Seligman, 2006; Buchman, DiPrete, & McDaniel, 2008), especially in Mathematics and Science sub-tests. Unfortunately, this gender difference has remained stable, which has been particularly true for the U.S. during the past 30 years (Hedges & Nowell, 1995). Some of the variables that have been investigated to explain this gap included biological and environmental factors. Among the several factors that different authors have investigated (Steele, 1997; Dee, 2005; Mandara, 2006; Buchman, DiPrete, & McDaniel, 2008) were

the following: (a) teachers' and parents' expectations, (b) teachers' gender, (c) gender stereotypes, (d) test anxiety, (e) parental involvement in school activities, (f) family background and parent education, and (g) parenting styles. Despite the existing gender differences related to test scores, female students tended not to delay college entrance, had low drop-out rates, and were more likely to finish college and complete a degree than their male counterparts (Freeman 2004; Snyder & Dillow, 2007).

College Admission

Admission to college historically has been determined by the use of standardized measures, such as aptitude or achievement tests. Until the 1920s, researchers within universities created and applied their own admission tests; however, due to the large array of measurements, practitioners in many countries decided to create a single and universal achievement test (Syverson, 2007). On the other hand, the use of a single standardized measure has been a matter of discussion, mainly because the scores of tests such as the SAT correlated significantly only with early college performance (Sternberg, 2007).

In 2003, one of the main goals of the Chilean government and the Ministry of Education was to put pressure on schools to improve the quality of education, with a special emphasis on high school education. Therefore, a major change was made in the official college entrance test, from an aptitude test (PAA) to a content-based assessment (PSU) similar to those that have been used frequently in developed countries (Hawes et al., 2004). The aim for the creation of this new instrument was to combine cognitive skills and different curriculum areas that were covered during high school. The four main areas assessed were the following: (a) language and communication, (b) mathematics, (c)

history and social sciences, and (e) sciences (biology, chemistry, and physics). The score that students needed to achieve to have access to higher education depended on the type of university and career chosen. For most renowned universities, high scores were between 680 (e.g. Psychology) and 750 points (e.g. Medicine). Low scores ranged from 450 to 550 points, which in many cases allowed students to apply only to private universities or careers that have low score requirements.

Researchers have shown that the PSU was statistically adequate to measure students' knowledge of high school curricular content (i.e. item difficulty and item discrimination) (Hawes et al., 2004); however, the main controversy has been related to the difference between scores of students from different socioeconomic and academic backgrounds. The change in the assessment procedure was intended to make high school education more comparable; however, Brunner (2008) found that the gap was wider than with the use of the previous test. One of the arguments previously discussed has been that the minimum curricular content that was assessed under the new test was not fully addressed in public high schools, where most low-income students were found.

Gifted Students' College Readiness

Gifted students, especially those from families from low socioeconomic backgrounds, could have difficulties in the admission to higher education. Even if students were gifted in one or more areas, they were not identified successfully nor received an appropriate or differentiated curriculum, which could have a negative impact on their academic futures. Van Tassel-Baska (1987) conducted a three-year study with a population of gifted students attending a special program. She found disparities between

the SAT scores of economically disadvantaged gifted students (i.e. income level below US \$20,000) and their advantaged counterparts' scores. She concluded that high income gifted students performed significantly better on the SAT than the low income gifted group. Specifically, the greatest disparity was observed on the mathematics subtest.

The purpose of this study was to determine what factors were influential on gifted students' achievement on the PSU in Chile. Particularly, the goal of the study was to analyze the performance on the PSU of gifted students who were part of an extracurricular university-based enrichment program. Three research questions guided this study:

1. What was the relationship between intelligence, motivation, and academic self-esteem of gifted students and their scores on the PSU?
2. What combination of factors were the best predictors of gifted students' performance on the PSU?
3. What were the differences in students' performance on the PSU according to their gender and type of school attended?

Methods

Context

Students participating in this study were part of a university-based enrichment program; Buenos Estudiantes con Talento Académico (BETA) in the city of Valparaíso, Chile. The program began in the year 2005 as a part of a series of enrichment programs created in the country. The BETA program's theoretical and curricular foundations have been based on Gagne's Differentiated Model of Giftedness and Talent (Gagné, 2004) and

the concepts of (a) enrichment developed by Renzulli and Reis (1984) and (b) problem-solving and creativity (Maker, 2005). The goal of the BETA program has been to provide educational opportunities and talent development for gifted students coming from public and voucher schools. Students accepted at BETA were part of traditionally underserved populations without academic opportunities to develop their talents. The program's goals have been to expand the cultural capital of gifted students, strengthen their cognitive skills, and increase their motivation to learn.

Students first were nominated in 9th grade by their school teachers. Each group of students (approximately 20 students per school) went to the University where they took two assessments: the *Raven's Standard Progressive Matrices* and a motivation test specially created for recruiting gifted students to participate in the BETA program.

Students began BETA in 10th grade, and had the option of being part of BETA until the completion of their high school studies (senior year). The program included enrichment sessions on Fridays and Saturdays during the whole academic year, plus a summer session (two weeks in January). Students were able to choose topics of interest and take two courses and one workshop each semester.

Instruments

Teachers used the *Individual Guideline of Criteria for the Nomination of Students with Academic Talent* to nominate potentially gifted students. This assessment was created for the first University-based enrichment program in Chile, the Program for Study and Development of Giftedness (PENTA) (Arancibia & Flanagan, 2005). The instrument had a general scale that was comprised of knowledge and learning skills, creativity,

productivity, and socioaffective characteristics. The scale also included four sub-scales of specific skills, such as language and writing, logic and mathematics, science, and social sciences.

The *Raven's Standard Progressive Matrices* (SPM) was the instrument used for the selection of students to the BETA program, and has been defined as a non-verbal assessment of analytic intelligence (i.e. fluid intelligence). This test has been used commonly in school contexts to measure cognitive skills such as observation and reasoning, and to identify gifted students. This test was chosen for the selection procedure because it was an assessment that, according to several studies, was not culturally or socially biased and allowed practitioners in the field of education of the gifted to select students from underserved populations (Mills & Ablard, 1993). The reliability coefficient for the SPM ranged from .76 to .91. To determine validity, several researchers have compared the SPM with other cognitive measures in Western populations, reporting correlations higher than .75 (Burke, 1985). No national norms for the SPM have been created in Chile. However, the BETA program did not use international norms; instead, local norms were created for the SPM: students' scores have been compared with the total group of students who applied to the program each year.

The *Coopersmith Self-Esteem Inventory* (SEI) was an assessment that had four sub-scales: 26 items related to global self-esteem, 8 items for social self and peers, 8 items for school and academic matters, and finally 8 items that comprised a lie scale. The items were statements that students answered on a two-point scale (i.e. like me and unlike me) (Coppersmith, 1981). The SEI was administered to students during their first year in

the program. This test had 58 items that were divided into four sub-scales related to four areas of self-esteem: general, social, academic, and home. The test-retest reliability was .73 (Francis, 1997), and some authors reported correlations between .58 and .62. (Chiu, 1985). Johnson, Redfield, and Miller (1983) conducted regression analyses to determine the validity of the SEI. They concluded that the SEI (a) had convergent validity with the Harris Children's Self-Concept Scale ($p < .01$) and the Coopersmith Behavioral Academic Assessment Scale ($p < .01$) and (b) had discriminant validity when compared to the Children's Social Desirability Scale ($p > .05$).

The *Motivation Scale* was an assessment created by the PENTA program that contained several statements about how students perceived themselves academically, their school interests, and the type of academic activities they enjoyed the most. Students answered each statement on a 4-point Likert Scale; some examples of the statements were the following: 'I am very interested in the causes and consequences of events', 'I like learning new things that are interesting to me', and 'I like the type of problems that make me think'. This scale was specially designed to select gifted students for university-based enrichment programs; however, no reliability or validity studies have been conducted on this instrument.

The PSU was the official Chilean standardized test for admission to college. The PSU included several sub-tests measuring different areas of the high school curriculum. The subtests of language and mathematics were mandatory for every student who took the test. Two other subtests (history and science) were included in the PSU, and the students had to choose only one according to the specific requirements of the university

and career (major) they wanted to select for their tertiary studies. Each of the subtests included approximately 80 multiple-selection items.

Researchers have found that the PSU was highly reliable with reliability coefficients of the subtests ranging from .72 to .92 (Donoso & Contreras, 2006). Also, researchers found that the PSU subtests had predictive validity for academic achievement during the first year of college (Manzi et al., 2008).

Participants

Sixty-six students who participated in the university-based enrichment program for gifted students, BETA, and took the PSU in the years 2008 and 2009 were included in this study. Table 2.2 contains the demographic data for the sample. The mean PSU score of the group was 608.76 points. Table 2.3 contains the frequency distributions of the PSU scores for the sample.

Table 2.2

Characteristics of the Sample

	N	%
Gender		
Male	33	50%
Female	33	50%
Type of School		
Voucher (charter)	30	46%
Public	36	54%

Table 2.3

Frequency Distribution of PSU Scores in 50 Point Intervals

PSU scores	f	%
450-499	6	9%
500-549	10	15%
550-599	11	17%
600-649	21	32%
650-699	10	15%
700-749	3	5%
750-799	3	5%
800-850	2	3%
Total	66	100%

Data Collection

Data for this research were different dependent variables that were part of the students' database during their participation in the BETA program: Raven's scores ($M = 55.75$, $SD = 2.61$), motivation scores ($M = 121.98$, $SD = 29.33$), and scores on the self-esteem test administered during the first year of study in the program ($M = 34.31$, $SD = 5.63$). Other variables included in this study were gender (male, female) and type of school attended (public, voucher).

Research Design

For the numerical data, multiple regression was chosen to analyze the relationships between the PSU scores and different independent variables (i.e.

intelligence, self-esteem, and motivation). Researchers have stated that these variables as a whole (predictor variables) can predict achievement on a college entrance test (criterion variable). Because at least 20 observations have been recommended for multiple regression models for each independent variable to avoid type I error (Brace, Kemp & Snelgar, 2006), only the three selected variables were used for this model, because the sample number was equal to sixty-six ($n=66$).

For the categorical data, a two factor (gender, type of school) ANOVA was chosen to analyze the effects and interactions of the factors on the performance on the PSU.

Results

A multiple regression analysis was conducted to predict students' performance on the PSU. The predictive variables that were considered for the study were students' scores on the SPM, motivation, and SEI tests. The variables as a whole helped to explain only 41% of the variance in the PSU, which meant that the model was marginally meaningful ($R^2 = .413$; $F(3, 62) = 14.53$; $p < .001$). However, when the behavior or predictive capacity of each individual variable was analyzed, the Raven's score was the only variable that was positively correlated with the PSU scores ($\beta = .639$; $p < .001$). A summary of the multiple regression analyses has been shown in Table 2.4.

Table 2.4

Summary of Multiple Regression Analyses for Students' Performance on the PSU

Variables	B	SE(B)	β	t	Sig. (p)
Self-esteem	-.406	1.49	-.027	-.272	.775
Intelligence	20.76	3.16	.639	.655	.000
Motivation	.082	.286	.028	.287	.786

Data on PSU performance were analyzed using a 2-factor between subjects ANOVA, with gender (male/female) and type of school (public/voucher) as the two factors. The sample sizes, means, and standard deviations per cell have been displayed in Table 2.5. Only the main effect of school was significant, with boys from voucher (charter) schools performing better in the PSU; however, neither gender nor the two-way interaction was significant (school: $F(1, 62) = 29.4, p < .001$, gender: $F(1, 62) = 2.82, p > .05$, school by gender: $F < 1$).

Table 2.5

Sample Sizes, Means, and Standard Deviations per Cell

Variables	Type of School					
	Public			Voucher		
Sex	Size	M	SD	Size	M	SD
Male	25	596.2	86.5	8	716.9	85.1
Female	26	570.1	84.4	7	673.2	82.5

Limitations

Specific SES information other than the one available for this study could not be included for the analysis. Variables such as parent and mother educational levels, family's monthly income, and parents' working situation were factors defined by authors as influencing college entrance scores. The fact that this was a sample of gifted students from a specific enrichment program also must be taken into consideration, because the weight of the factors influencing PSU scores could be different in a more heterogeneous sample than the one studied for this investigation.

Discussion

The relationship found between students' scores on the SPM and the PSU is consistent with what other authors have established about general intelligence and standardized assessments, such as the SAT (Frey & Detterman, 2004). One of the plausible explanations for this relationship is that both tests, intelligence and college entrance, are partially measuring the g factor (general intelligence). Another explanation is that intelligence tests (even non-verbal tests like the Raven's) are highly influenced by academic exposure; therefore, the reason why some students outperform others on both tests (Raven's and PSU) might be due to their previous school learning experiences (Stelzl, Merz, Ehlers, & Remer, 1995; Fry & Hale, 2001).

Motivation and self-esteem were not closely correlated with the results on the PSU, which can mean that for this particular sample, they were not attributable factors when explaining students' performance on the PSU. Authors have investigated the relationship between motivation and self-concept as related to specific achievement

assessments (Marsh & Craven, 2006; Marsh & Craven, 2008; Trautwein, Ludtke, Koller & Baumert, 2008); however, we found that for the achievement test used for this study, the PSU, the cognitive skills measured by the SPM had a greater weight than other individual factors.

This finding is consistent with other studies about the lack of academic opportunities and preparation faced by students from different socioeconomic backgrounds (Van-Tassel Baska, 1997). On the PSU, students need to master the content of almost 100% of the minimum mandatory curriculum that the Chilean Ministry of Education establishes as the base for all high schools to address during secondary education (Koljatic & Silva, 2007). However, researchers have found that in many public schools this content is not being addressed, with teachers covering only 50% of the mandatory curriculum.

The ANOVA results are consistent with previous findings about male students performing better than female students on college entrance tests (Duckworth & Seligman, 2006; Buchman, DiPrete, & McDaniel, 2008). However, not only males, but males from voucher (charter) schools have better scores on the PSU. Many different variables have been associated with the gender gap in achievement tests (Steele, 1997; Dee, 2005; Mandara, 2006; Buchman, DiPrete, & McDaniel, 2008). The association between gender and type of school has been explained by some authors as being related to the different gender expectations that are held depending on the type of school the student attends, and ways these expectations are reinforced by teachers. Expectations seem to be higher for

male students in charter schools due to the more rigorous academic demands made by teachers for male students (Bifulco & Ladd, 2006).

Even though gifted students may have high academic *potential*, if they are not exposed to the required curricular and academic content they cannot succeed on a content-based assessment such as the PSU. The aim of this test was to improve access to higher education under the assumption that a content-based test was a better predictor of college success during the first years of study than were more traditional types of tests. Also, the PSU was supposed to be an assessment based on meritocracy, because students' knowledge acquired through their years of study due to their personal effort and preparation (OECD, 2009) is being assessed. However, differences seem to be accentuated with the PSU scores, mainly because of the differences that exist between students who come from different types of schools. The acquisition of knowledge and cognitive skills to address the PSU depends on the preparation provided by the schools; however, this academic preparation is unequal and 43% of public schools in Chile are not implementing the mandatory curriculum. For example, while students from private schools have an average of 37 correct answers in the Mathematic section of the test, students from public schools have an average of only 8 correct answers (Bayer, 2004). Therefore, these differences reduce students' opportunities to have access to a high quality tertiary education.

Implications for Practice

In Chile, the graduation rate of high school students is significantly higher than the admission rate to college. Inequities between students who attend public and private

schools are shown to be greater during the process of admission to higher education (OECD, 2009). Admission to college depends on the scores achieved on the PSU, and performance on the test seems to be highly related to the type of school the student attended. Therefore, the academic preparation that students from different backgrounds receive must be taken into consideration. Nunez and Millan (2002) found that students who underwent an intensive training on the necessary content for the PSU accomplished better results than their counterparts with no specific training. Academic preparation along with training in test taking skills are factors that can increase students' performance on a college admission test. Improving the minimum coverage of basic content is a current and long-term challenge for the Chilean Ministry of Education. However, creating opportunities for students to access extra-curricular academic preparation is a short-term suitable option. For example, PSU preparation centers, called *Preuniversitarios* in Chile, have proven to be a powerful tool for students to acquire the skills necessary to perform well on the test. Creating more centers or promoting free access to the existing ones can be a suitable option for students from low socioeconomic backgrounds who do not have these opportunities.

Implications for Further Research

Investigators in the field need to consider and widen the analysis of individual and contextual factors that might affect gifted students' performance on a college entrance test. Factors such as socioeconomic status, parent education, parental support, among many others, can be included for further analyses. Studies with larger samples and comparative samples (e.g. gifted and non-gifted students) also could be appropriate for

this type of research. Finally, analyzing the suitability, adequacy, validity, and reliability of the PSU in Chile since its first implementation and during the last eight years can contribute to the advancement of research in the field and improve the quality of education in the country.

In summary, the results of this investigation helped us shed light about how gifted students' readiness for college is affected by environmental factors, being the most salient students' educational and academic background. Giftedness has been defined in many different ways; however, most of the researchers coincide that is a combination of heredity and environment. In this study, even though every single participant has been identified as gifted, the role the environment has played is indisputable. For gifted students from voucher schools undergoing a rigorous academic preparation, they are able to achieve on the Chilean college entrance test and probably will be able to select the major of their choice in any renowned university. On the other side, students who are gifted but have not had adequate educational opportunities to succeed tend to have lower scores than their counterparts from voucher schools. Even though gifted students have the potential, background and cultural capital matters for achievement and readiness for college. How these students can have access to the necessary content knowledge they need to succeed in college entrance tests is a question that still remains unanswered among Chilean educators and needs to be addressed by practitioners and researchers.

CHAPTER III: MANUSCRIPT II. AM I *THAT* TALENTED? THE EXPERIENCES
OF GIFTED INDIVIDUALS FROM DIVERSE EDUCATIONAL BACKGROUNDS
AT THE POSTSECONDARY LEVEL

Abstract

The goal of the present study was to analyze gifted students' perceptions of their first year after high school regarding experiences of success and failure. Two focus groups were conducted with twelve students (8 males, 4 females) from different educational backgrounds, who had participated in a university-based enrichment program, to discuss topics related to their academic and socio-emotional experiences at a postsecondary level. Many students who attended vocational high schools experienced high levels of discomfort with their academic preparedness to face postsecondary education. Other initial problems were adapting socially to a new environment and perceiving themselves "less" gifted than their peers. However, after these initial adjustment problems, students revealed a highly resilient profile to face difficulties and a strong motivation for continuing the academic path they had outlined for themselves. Conducting longitudinal research and rethinking college services offered for gifted students are some of the implications discussed in this study.

Keywords: gifted college students, vocational schools, college experiences, students' perceptions

Introduction

Current research on giftedness has been focused on children and adolescents, with less information available about gifted adults, especially in the traditional postsecondary ages between 17 and 22 (Rinn & Plucker, 2004). Researchers have focused on gifted college students in certain special populations; however, postsecondary experiences of gifted students from different academic backgrounds, such as students from vocational schools, have not been investigated extensively.

Researchers have addressed the academic experiences of gifted students, including choosing a university, learning, and academic success, traditionally measured through college students' graduate point average (GPA) (Rinn & Plucker, 2004). However, few researchers have focused on students' emotional and social experiences after exiting secondary education. Subjective experiences of college students that have been investigated include personality traits, and researchers have shown how serious gifted college students are about their studies and how perfectionism has manifested in this population (Laycock, 1984; Neumeister, 2004).

The attraction and retention of postsecondary gifted students has evolved into a matter of interest around the world, especially for universities wanting to recruit *the best and the brightest* to sustain an institution's academic prestige. One of the most important reasons for recruiting bright students in Chile has been to assure the economic support, approximately 21 million pesos (42 million US\$), given by the central government (called *aporte fiscal indirecto*, or AFI) to the higher education institutions that recruit the students with the best scores on the Prueba de Selección Universitaria (PSU) college

entrance exam. This funding constitutes the main funding source for public universities (Cruz-Coke, 2004).

To attract talented students, different types of programs have been created within universities. In the U.S., the most common type of program has been the Honors Program (HP), which might include engaging in lectures and discussions, research opportunities, and mentoring by college professors. Rinn (2007) found that gifted honors students had significantly higher academic achievement (measured by their GPA) and higher academic self-concept than non-honors gifted students. These types of programs as well as the concept of giftedness in college are fairly new in Chile. Only a few institutions in the country have Honors Programs, and the terms “talented” and “highly able” have been used interchangeably. Within Chile the collegiate definition of giftedness has been understood to include students who have achieved high scores on their college entrance tests and who have had a high GPA. Furthermore, the assumption has been that they will succeed in college without special assistance.

Chilean investigators have addressed only partially the issue of the first-year college experience, focusing on special programs, retention, and drop-out rates. However, the real experiences, adjustment, and struggles of highly able students within college have not been addressed extensively by researchers in Chile due to the lack of a clear and consistent monitoring process for the academic and social progress of gifted students attending Chilean universities. The societal and institutional expectations have been that gifted students will succeed academically without additional support. However, some researchers have found that gifted students have experienced higher academic stress than

their non-gifted counterparts (Olszewski-Kubilius & Laubscher, 1996). In addition, special populations of gifted students, such as students from lower socioeconomic backgrounds, have conflicting college experiences and have been likely to face financial, social, and personal difficulties (Hollins & Guzman, 2005).

Factors Influencing Gifted Students' Adaptation and Adjustment to Postsecondary Education

Students' abilities to adapt to college and the factors that predict college success have been investigated in depth in the last few decades. The importance of student adjustment in the first year of college has been of special interest to higher education administrators who need to increase their retention rates (Hurtado, Carter, & Spuler, 1996) because the majority of withdrawals occurred within the first year, a time during which all students experience some degree of difficulty adjusting to college (Tinto, 1993). Individual and environmental factors that have been found to affect gifted students' college experiences included (a) previous academic experiences in high school (Muratori, Colangelo, & Assouline, 2003), (b) social factors (Muratori, Colangelo, & Assouline, 2003), and (c) individual components such as motivation and personal and academic experiences in programs for the gifted (Hammond, McBee, & Hebert, 2007; Hertzog, 2003; Rinn, 2007).

High school preparation. Gifted students' high school preparation included their academic experiences prior to entering college: high school curriculum, regular and honors classes, extracurricular activities, and other academic activities. Adelman (2006) concluded that the quality of the curriculum had a greater impact on students' persistence

and completion of the first year of college than the Scholastic Aptitude Test (SAT) or the American College Test (ACT) scores. Muratori, Colangelo, and Assouline (2003) found that many gifted college students were not satisfied with the academic preparation received in high schools due to the (a) slow pace in their classes, (b) assignments that were not meaningful for them, (c) lack of teacher preparation and knowledge, and (d) teachers who were reluctant to receive feedback from their students.

An important problem existing in Chile has been the significant differences found in the academic performance on standardized tests between students from public, voucher, and private schools. Public schools have been defined as institutions that are financed and administered by school districts, and their socioeconomic composition usually has included approximately 70% of students from low SES backgrounds (Valenzuela, 2008). Voucher schools in Chile have been jointly funded by the central government and the parents who pay tuition. Voucher schools in Chile vary in academic quality. The ones considered in this investigation were academically prestigious institutions that had a population of mainly middle class students.

Several causes for the problem of varying test scores among students from different types of schools have been investigated—students' socioeconomic status (SES) and cultural capital, socioeconomic segregation of public schools, and curricular differences among the types of schools. In Chile, generally, students from voucher and private schools have had challenging high school academic preparation and college preparation courses. Students attending public high schools usually have gone to public vocational high schools because of (a) the proximity to their neighborhoods and (b) their

parents' expectations and/or desires for their children to obtain a trade certificate so that they could find a job if they did not enter college. Although these students might have the talent for higher education; they might not consider this option because their parents, typically, have not attended college and do not have the economic means to send their children to college. Vocational high schools have included two years of general academic preparation and two years of technical training in their curricula. Therefore, their graduates have lacked the necessary content knowledge to meet some of the college requirements. In addition, implementers of the curriculum in vocational schools did not address the same content covered in regular high schools in Chile (Eyzaguirre & Le Foulon, 2002), which has caused students to achieve low scores on college entrance tests and possible academic failure during their first year in college.

Engagement and involvement in college. Social and academic integration have been defined as the most important factors related to a successful college experience, especially during the first year (Tinto, 1993). Social integration includes variables such as self-esteem, relationships with peers, and informal interactions with faculty members (Saenz, Marcoulides, Junn & Young, 1999). Developing peer relationships has been one of the most significant experiences of students during their first year of college, and social networking has become a powerful source of influence for students (Astin, 1993).

Social integration. Moving away from home and entering a higher education institution might influence gifted students' initial adjustment to college according to Muratori, Colangelo, and Assouline (2003), who found that some students experienced homesickness during their first semester in college due to the severance of their

relationships with significant people back home (e.g. friends or teachers). For some students, forming new relationships in college was a difficult experience; however, they were capable of integrating socially to the institution by making new friends on campus.

Academic integration. Some academic variables have been defined as important for successful academic integration to college such as the following: grade point average (GPA), perception of intellectual development, and perception of faculty interest for teaching and students (Saenz, Marcoulides, Junn, & Young, 1999). Rinn (2007) found that participation in an Honors Program in college was a more significant factor for academic achievement in gifted college students than their SAT scores. She also found that gifted students participating in these kinds of programs had a higher academic self-concept than non-honors gifted students. Reis, McGuire, and Neu (2000) interviewed 12 college students who had a learning disability but were thriving in college. They found that to achieve this successful academic integration, students displayed a series of compensatory strategies such as the following: (a) tactics to address their studying process, (b) learning strategies, and (c) use of compensatory supports.

Motivation. Motivation has been researched extensively in the literature about giftedness, and to some extent in gifted college students. Hammond, McBee, and Hebert (2007), in a qualitative study, investigated the motivational trajectories of six gifted students entering college for the first time and found that the factors most mentioned by the students as relevant to their motivation were (a) taking advantage of the autonomy and independence of being far away from home, (b) being part of a social network and making meaningful friendships, (c) learning to overcome difficulties and a strong desire

for surmounting challenges, and (d) earning recognition among the college community and peers.

Previous experience in programs for the gifted. Most researchers who have conducted longitudinal or retrospective studies have been able to analyze the impact of special programming on students' achievements, career choices, and other personal variables. They have used quantitative measures to identify different types of cognitive skills that were acquired before adulthood (c.f. Subotnik & Arnold, 1994). Little qualitative research could be found about college students' perceptions and feelings about their past experiences in programs for the gifted. Hertzog (2003) found that students greatly appreciated the preparation and skills for their academic future provided by teachers of special programs for the gifted and that these academic challenges increased their self-esteem. On the other hand, the author also found that students had negative feelings about being separated from their classmates and friends when participating in pull-out programs because this could compromise their social relationships.

College delay. Many factors have affected students' decisions to enter college. The lack of financial resources has been one of the most important factors investigated as the cause for college delay and attrition (Stinebrickner & Stinebrickner, 2003), as well as students' perceptions that they lack the academic preparedness to succeed on college entrance tests and, subsequently, in the first year of college (Steele & McDonald, 2008).

Indecision also has been investigated as a variable that might affect students' choices to enter higher education (Lopez & Ann-Yi, 2006). After knowing their scores on the college entrance test, PSU, Chilean students have to choose a career and stay with

that career for an average length of five to six years. The early commitment to a course of study is different than from what happens in the U.S. where students are free to choose and change majors or have the status of “undeclared” during their first years of college.

High school gifted students also experience feelings of indecision about their entrance to college. As many as 53% of academically gifted students experience difficulties and need help with their career and educational planning (Kelly & Cobb, 1991). This indecision might have several causes such as having to make the “perfect choice” and pleasing their families (Symes & Stewart, 1999). These perfectionist feelings could result in stress and anxiety and even delay college entrance.

The aim of this study was to find out Chilean gifted students’ perceptions about their academic and psychosocial preparedness to face the transition to a postsecondary setting.

The following research questions guided the study:

1. What were gifted students’ perceptions about their academic preparedness at a postsecondary level?
2. How did gifted students describe their social and emotional experiences in postsecondary settings?
3. What was the impact of students’ participation in an enrichment program for the gifted in their postsecondary experiences?

Methods

Research Design

The aim of this research was to honor participants' stories and their voices as well as to acknowledge the perceptions they held regarding their post high school experiences as gifted individuals. Therefore, a qualitative methodology was chosen because it allowed us to understand people's stories by analyzing the meaning of their narratives (Bogdan & Knopp, 1988). The qualitative approach also was a suitable option because many of the current studies on gifted college students have been conducted quantitatively with the use of surveys or other self-report measures. We, however, wanted to focus on the group as a unit of analysis rather than on individual measurements (Lancy, 1993). Therefore, we conducted in-depth analyses of the perceptions of psychosocial experiences of a group of college students. For this purpose, the qualitative methodology provided us a unique framework to capture the richness of their experiences (Polkinghorne, 2005).

The focus group was chosen as the qualitative technique that would facilitate a deep dialogue among participants. The focus group has been defined as an effective way for people to exchange ideas about their feelings and ways of thinking and to reflect upon topics or situations they have experienced recently (Wong, 2008). The discussions that took place as part of this research were about perceptions, that is, participants' feelings and thoughts about their postsecondary experiences. One advantage of using focus groups in this study was that they not only allowed participants to discuss general topics about postsecondary experiences, but also to discuss emergent themes that were not considered a priori.

Participants

Participants were former students in a university-based enrichment program, the BETA (*Buenos Estudiantes con Talento Académico*) program, and were part of it for three consecutive years (grades 10 to 12).

The concept of talent that underlies the BETA program has been based on the Differentiated Model of Gifts and Talents (DMGT) (Gagné, 2005). Therefore, students who had capabilities that placed them in the top 10% of their age group were eligible to enter the program. The method for recruiting students for the program included teacher nominations as the first stage, using preset scales. After students were nominated from their educational institutions, they participated in an evaluation process at the BETA program. The evaluation included an intelligence assessment using the *Raven Standard Progressive Matrices* and a motivation evaluation.

Twelve students participated in the focus group sessions. Based on their postsecondary experiences, they were divided into Group 1, former BETA students with one year of college experience (5 male, 4 female; 6 who attended vocational high school, 3 who attended voucher high schools); and Group 2, former BETA students who deferred college entrance and attended private academic preparation courses to retake the national college entrance test (3 males who attended vocational high schools). Three participants in the sample attended voucher schools; nine came from vocational high schools.

Procedure

All former BETA students were contacted first via email. Then, a follow up telephone call was made to confirm their participation in the focus groups.

Approximately 80% of the first generation of students who graduated from the BETA program (N=42) were contacted for this research; however, because the data collection was performed during the summer, many of the students could not attend the focus group sessions. The sample included in the study represented 30% (n=12) of the first generation BETA population of postsecondary students who graduated from the program.

Two separate focus groups were formed and discussions with each group were conducted at the University where the BETA program was located. One researcher in each of the groups acted as the facilitator for each discussion with the focus group members. Discussions in each group had an average length of two hours, and the entire session was audio recorded. First, participants were informed about the purpose of the activity, and they were invited to respond to an open-ended question. To ensure that each member's opinion was included in the discussion, facilitators constantly encouraged students to participate actively.

The questions for each group were the same except for some wording/phrasing variations applicable to the postsecondary experiences of the group. The guiding topics for each focus group were (a) general evaluation of first postsecondary year, (b) perceptions of success/failure during the year, (c) skills and personal resources needed to deal with critical events, (d) satisfaction/motivation with college/non-college experiences, (e) dreams and aspirations for the future, (f) impact of the BETA program on postsecondary experiences.

We conducted the discussions in Spanish and students used informal language and youth-related colloquialisms. For the purpose of this research, some of the students'

comments were translated into English. Throughout the translation process, we tried to capture the richness and depth of these comments.

Data Analysis

To increase reliability of the research, investigator and participant triangulation was considered for the analysis. Researcher triangulation was done by the two authors of this study plus a research specialist. Each investigator read the transcriptions separately and identified themes; then, we gathered to discuss the themes and create categories. Investigator triangulation helped us with the interpretation of the results and provided insights about data that were difficult for just one person to consider (Denzin, 2001).

Participant triangulation was a process of verification and feedback used for checking the accuracy and trustworthiness of the data that were collected in the study (Cohen & Manion, 1994). Participant check was done through a meeting with individual students who participated in the study. At that meeting, the researchers and the students read verbatim excerpts from the focus groups and discussed the interpretations and tentative conclusions made by the researchers.

After verbatim transcription of focus group discussions and interviews, the first step of the analysis was to find general themes and code them. Coding responses allowed us to group participants' responses that shared similar ideas or themes (Rubin & Rubin, 1995). The search for common themes among participants' responses was completed using the constant comparison procedure, a process that required us to compare incidents and establish and refine categories (Merriam, 1998; Strauss & Corbin, 2007).

Comparisons helped to achieve more consistency and greater precision in the research

(Corbin & Strauss, 1990). Incidents that were conceptually similar were grouped under a tentative label or theme; then, broad categories were created to describe the general phenomena. A summary of the categories and emergent themes underlying each category has been shown in Table 3.1.

Table 3.1

Categories

Name	Themes
Academic achievement in college	Comparison pre/postsecondary achievements Giftedness in college
Personal and interpersonal post-secondary experiences	Academic preparedness Emotional experiences Social experiences
Impact of the BETA program	Impact on cognitive skills Impact on social skills

Results

The participants' opinions, feelings, and thoughts as expressed throughout the focus group sessions were related to several topics including academic, social, and emotional experiences during their adaptation to postsecondary education. Three main categories were found: (a) academic achievement in college; (b) personal and interpersonal post-secondary experiences, and (c) impact of the BETA program.

Academic Achievement in College

When talking about their adaptation to the postsecondary level, participants provided differing types of explanations. These explanations usually were elaborations based upon their *initial* experiences in the postsecondary academic setting due to the new challenges and demands they perceived in their new academic setting. These initial experiences, in some way, altered their perceptions of their giftedness and personal abilities because students realized that they were lacking the necessary skills and/or academic preparedness to overcome these challenging academic experiences.

Themes found in this category were associated with (a) current performance/achievement levels compared to performance in high school, (b) academic preparedness for challenges related to the type of high school attended, and (c) giftedness in the college setting.

Comparison of current to past performance/achievement. Seven participants (six from vocational schools, one from a voucher school) defined their previous academic experience in high school as very easy and as an experience that required little academic effort from them. As one student stated, "In high school I never had a notebook. I just

listened in classes.” Participants acknowledged that during their high school years they reviewed their notes quickly before taking a test and did not take many notes during their lessons, which was different from what was needed in college. As the same student said, “In high school I used to quickly review more than really studying. It was like yes, I’m going to read this and I did fine. But not now.” After entering college or when preparing for the college entrance test, students found greater academic demands and were faced with content knowledge that was not addressed in their schools. Therefore, students had a lower academic performance in college than during their high school years. One student from a vocational school described it: “In college my grades are lower. Because [college] is not as easy as high school.” Because of these new challenging academic experiences, participants revealed feelings of incompetence, uncertainty, and questioning of their academic skills and study habits especially if they attended a vocational high school. One student viewed these challenges as affecting her beliefs about her competence: “[This experience] has made me question myself. Am I that talented? What does it mean to be talented? Because after exiting high school with a lot of awards... I go to college and it’s not like that at all.”

Academic preparedness. We noted a major difference about the academic preparedness of the participants according to the type of school they attended. On one side, gifted students who went to voucher schools (n=3), regardless of their lack of study habits and/or skills necessary for college, felt very competent and prepared to face the academic rigor of college. A student from this type of school explained, “I studied in a voucher school. In that school they prepare you to go to college. They prepare you for the

PSU...so it's not that different." On the other side, the majority of students who studied in public/vocational high schools (n=8) felt a lack of preparedness, specifically in content knowledge. A student described this lack of preparation as a feeling of being misplaced, "[S]ince I was in a vocational school I had other content, and when I got to college, to business management, it was terrible (...) I didn't get the concepts. At the beginning, I was lost."

Students from public vocational schools felt that the curriculum presented in these institutions was not adequate to prepare them for college. One student described this as a lack of academic knowledge and skills to face college demands, "What happens is that the foundation I got in high school was very bad. Luckily, I knew how to add and subtract. However, I'm doing much better now." Another student recognized his potential as a gifted individual, however he also recognized a lack of the necessary academic skills for college: "I know I have the talent, but maybe I don't have the academic knowledge that I need."

All students from vocational schools failed, on average, one to three courses in their first academic year, mainly in the content areas of Biology, Mathematics, and Physics. This lack of preparedness, according to the participants, made them feel unable to meet the initial academic requirements of college. However, after this initial academic "shock"—which meant lower grades and failure to meet the requirements of certain courses—students felt as though they were at the same academic level as their classmates. One student from a vocational school clearly described this idea: "[In school] sometimes I felt sad. Sometimes I felt happy. I was in a vocational school and it was very

practical. I studied carpentry. I spent the day sanding the wood. And now I'm studying to become a teacher. There are concepts that I never ever saw in my school. But after months of hard work, I am able to succeed.”

Being gifted in college. Only participants from vocational schools (n=5) analyzed the experience of being gifted in college. They saw themselves as losing their “uniqueness” and being in an environment where everyone could be as gifted as they were. Some participants were recipients of a special college scholarship for being a BETA student; however, they did not like people knowing about this label because the academic expectations were very high. For example, one student who was a former BETA participant wanted people in college to acknowledge him without a specific label: “They said you are BETA, the gifted child...I told them yes but I have other skills as well.” Another student was concerned about the high academic expectations associated with the label of being gifted in college: “...they asked, ‘Why do you have such a low achievement? You are a BETA student’.” Also, participants believed that being gifted in college was not always recognized or acknowledged by the institution, especially by faculty members, as stated by one of the students: “I think that it is very difficult for professors here to recognize your talent.” Also, according to them, college was a place where students were not easily noted. One of the students stated, “It is difficult to stand out here in college.”

The participants’ overall feeling was that in this new academic context, which was very different from high school, they hardly could be noticed, recognized, or identified. This feeling of anonymity led to uncertainty and disbelief about their

giftedness. One student described this situation as experiencing feelings of inferiority: “I am a BETA student but all my classmates could have been so as well. And my grades are not as good as their grades.” Another student felt that everybody possessed the same abilities as she did: “I am one more student in the lot. Everyone is as gifted as I am.”

Personal and Interpersonal Post-Secondary Experiences

All the participants agreed that exiting high school was a stressful life experience for them; however, they also recognized that the adaptation to a postsecondary setting helped them grow and become more mature and that growth enabled them to face different challenges. Facing a new, challenging, and demanding academic and social environment made the participants acknowledge who they were and, more importantly, what they were capable of doing. Themes in this category were, therefore, related to emotional and social experiences.

Emotional experiences. Emotional experiences were described more frequently by students who did not go to college immediately after high school (n=3) than by those who attended public vocational high schools (n=7). Those who waited a year were preparing to retake the national college entrance test (an event that occurs just once a year in Chile). One student who deferred college described feelings of anger because of not being able to enter college in his first attempt because of a low PSU score: “I was very lonely. I needed to be alone, to be able to know myself, what was going on, because I was angry with myself.” Another feeling of participants who deferred college was that the adaptation experience forced them to rethink themselves and made them face some of their fears. One stated, “This was a year to find myself.” However, they also felt that the

deferral experience helped them become more independent and move away from their “comfort zone.” One acknowledged that “I needed to be able to move by my own means, in a way that I’m the one who asks questions, I seek for answers, I don’t have to wait for someone to solve my problems. I was used to sitting down and waiting. And my parents and friends would tell me ‘do this’, ‘go this way’. This year I wanted to do things.”

Another aspect that students related to their emotional experiences in adapting to college was motivation. Students who did not defer college but attended public vocational schools in the past found this especially true. These participants conceptualized motivation as the way to overcome difficulties and as the strength that kept them moving along the academic racetrack. One student described motivation as her capacity for setting goals and being able to achieve them: “This year I figured out that all the things I said I wanted to do, I want to do them. I mean I really proved to myself that this is what I like.” Other students viewed motivation as surmounting any difficulty, “I realized that I am able to overcome anything” and as a way of moving forward: “I want to overcome this, because I don’t want to be stuck.”

Almost all students in both groups (n=10) believed that motivation and perseverance were two main elements that helped them succeed and prevented their withdrawal from college. For some students, quitting was not an option they would consider: “I never thought I would quit. If I’m here it is because of something, and I have to learn.” For others, being obstinate was what helped them go through: “I like being a stubborn person. If I hadn’t been a stubborn person, I would have left myself to be defeated by adversity.”

Motivation also was related to feelings of commitment to their majors/careers. In some cases, motivation was translated into passion about the knowledge and skills they were acquiring: “I feel love and passion for my career.” Other participants showed feelings of intense commitment, which helped them to overcome difficulties: “I am happy here, even though it’s difficult... until I die.” *Until I die* is a popular Chilean colloquialism that has been used by young people to mean orienting all personal efforts and motivation toward achieving a goal; the expression was appropriate in this instance because the student was stating her strong conviction to continue with postsecondary education despite the difficulties.

Finally, participants’ motivations also were apparent when they expressed a strong desire for graduating and continuing their studies at a graduate level (n=5). Some students wanted to attend graduate school and study abroad: “I would like to be a graduate student and go to a foreign university” stated one student. “I want to keep studying, and go to Milan” said another one, while another added, “I want to continue studying, go to another country, to broaden the spectrum of my current career.” This motivation was translated into clear goals for professional work and continuous education in the future. One of the students drew a very clear path for his future career: “I want to work, graduate as an engineer and, afterwards, teach at the university.”

Social experiences. Participants who attended college agreed that adjusting to the social, academic, and classroom environments was difficult. This initial difficulty was identified as the obstacles they faced when entering and adjusting to a culturally or socially diverse setting. One student in this group defined this social difficulty as feelings

of isolation: “It was hard for me to feel integrated. I felt isolated. I don’t know why yet.”

Another student felt he could not integrate easily because of his lack of academic knowledge: “I was in a study group. I felt embarrassed to ask them, because I didn’t understand, and they kept saying ‘it’s so easy.’”

Some of the participants who attended vocational schools (n=8) initially perceived the socioeconomic differences and snobbism among their classmates: “Half of the class had scholarships and the other half was very snobby. So the differences were evident.” These differences translated into a social disconnection between the student and his or her classmates: “I didn’t like anybody at first. They were so snobby, not very good people; I had difficulties connecting with them.” However, these differences began to dissipate as the academic year came to an end. “The first year I had a hard time adapting. That was the hardest part,” said one student. After their initial adjustment problems, participants agreed that they now had solid study and/or friendship groups that provided support to them when they experienced problems. One participant stated, “We all have the same interests. We are very good friends. And their support helps a lot.”

When students from voucher schools referred to their social adaptation to college (n=2), they mentioned it as a smoother process than did students from vocational high schools. One of the students even found high school friends to help him in the process: “I found high school friends in my career so we supported each other a lot.” Another participant found that his academic skills helped him integrate into college: “I found a group of friends very quickly and also offered to help them academically. It wasn’t hard for me at all.”

Impact of the BETA Program

All the participants (n=12) agreed that their participation in the university-based enrichment program, BETA, was a transforming experience for them, both academically and socially. The aspect mentioned most frequently by participants was that the program fostered the development of different cognitive and social skills. These skills helped them in contexts that involved problem-solving at a postsecondary level. Themes they discussed in this category included the impact of the program on cognitive skills and the impact on social skills.

Cognitive skills. Many participants (n=9) defined their academic journey in the BETA program as an experience that “opened their minds” and gave them the skills to think and reason in a different and complex way. Problem-solving and critical thinking were skills highly recognized by the students as useful in a postsecondary setting. A student acknowledged that “the critical analysis that I acquired (in BETA)... helps me for everything.” Critical thinking also was associated with the act of reflecting and was understood as a skill that helped them avoid taking things for granted. One student described it as opening her mind: “BETA developed our minds ..., a mind that now is more open and reflective.” Another saw herself as a more critical person than in the past: “We are more critical people now, more reflective people.” Finally, other students acknowledged the fact that the BETA program made them think differently from when they were in high school. One said, “The program made me reason in a way that was different from school.”

Social skills. Some of the participants (n=7) referred to the social skills they acquired through the program, especially how different relationships and activities in the BETA program helped them overcome personal and other difficulties. One student viewed it as a deep inner change: “The change was tremendous...I was very introverted.” The fact of just talking with other gifted students and meeting people who accepted them as they were was a highly valued aspect of the BETA program. One participant noted the possibility of having different types of dialogues with peers: “With my friends here I was able to have other types of conversations.” Last, environmental aspects of the program, such as an accepting and non-judgmental setting, were considered important factors that influenced participants’ social development: “I feel that I achieved so much in my social skills. I matured a lot, I would say.”

Discussion

Results of this research need to be interpreted with caution. Due to the nature of the investigation, results cannot be transferred to the overall population of gifted college students. However, we intended to conduct different qualitative analyses in this investigation to lend credibility to the findings and to outline tentative and preliminary explanations for the current problems that gifted students may face when adjusting to postsecondary education.

Academic Preparedness and Adjustment

One of the findings of this study is the way gifted students in the sample adapt to a postsecondary academic setting and the psychosocial complexities that underlie this process. Academic preparedness has an influence on the adjustment of gifted students to a postsecondary academic setting, and this adjustment affects the way they see themselves. For the group from vocational schools, one of the main problems with the adaptation was the lack of content knowledge needed to meet the minimum requirements for success in their college courses. Students from voucher schools adapted easily to college academic demands; however, their main academic problem was to change their study habits to meet the academic rigor of college courses. This perceived lack of academic preparation is consistent with Adelman's (2006) findings about current differences in the academic intensity of high school curricula. According to Adelman, students from the lowest SES quintiles tend to attend high schools that have low quality curricula where teachers do not prepare them appropriately for postsecondary studies. In this study, the main differences can be explained by examining the curriculum of

vocational and regular schools. Regular high school curriculum includes the study of science, mathematics, and humanities; whereas, the content knowledge of vocational schools is an apprenticeship in developing practical skills that need to be displayed when performing a particular trade. Because of its orientation, the curriculum in vocational schools includes just half of the general preparation content that usually is found in regular high schools (Eyzaguirre & Le Foulon, 2002). In summary, these vocational schools do not prepare students for college entrance, and being unprepared is one of the reasons for the academic struggles and low achievement faced by students from vocational high schools in this study. Students' low performance in college could be conceptualized as underachievement; however, we prefer to use the definition proposed by Steele and McDonald (2008), which is gifted students who are academically *unprepared* but academically *capable*.

The complex scenario of postsecondary academic rigor, academic difficulties, perceptions that they lack preparedness, and doubt about their own capacities is complicated by the assumption that giftedness predetermines academic success. Academic success, within the specific results of this research, is shown to be related to the ability to keep up with classmates and achieve the necessary level of content knowledge. Gifted students are no longer "special," standing out in the crowd. They meet peers of similar abilities, and their uniqueness is lost within the "academic elite" that makes up the college population in Chile.

Social and Emotional Adjustment

The participants in the study had complex social and emotional experiences related to their initial experiences in postsecondary settings. Their challenges included initial difficulties adapting to the new social contexts, particularly to environments that have a diverse socio-cultural composition. These difficulties were more evident for students from vocational high schools. An example of this adaptation was students' referral to "snobby" classmates who were frequently students from upper socioeconomic classes who might talk, dress, and think in a different way. However, once the initial social connection was made, students showed a clear progression in the adjustment to college's social environment by making new friends and participating in study groups. These findings are consistent with Astin's (1993) findings about the value of social networks in students' success and adjustment to their first year of postsecondary experiences.

Despite initial socio-emotional adjustment difficulties, motivation for the students in the study acts as a "safety net" that helps them succeed and prevents their withdrawal from college. Students in the sample described motivation as an affirmative dialogue with the inner self translated into a strong desire to overcome difficult experiences and succeed in their career paths (Hammond, McBee & Hebert, 2007).

Previous Experiences in a Program for the Gifted

Previous participation in a program for the gifted had a major impact on the development of students' cognitive and social abilities. One important skill acquired throughout the BETA program was critical thinking, described by participants as current

thinking patterns and ways of approaching different content areas. Several researchers have found that the effect of special programming for the gifted on critical thinking is highly significant (Vaughn, Feldhusen & Asher, 1991). The BETA program supported interactions with similar peers in an environment that reinforced social openness and encouraged students to make new friends and develop social skills that positively impacted their transition. However, participants stated that being identified as a gifted student sometimes had a negative impact during their first year of postsecondary experiences. The “gifted” label, for some of the participants, had a negative effect because of the higher expectations held by other individuals (e.g. students and professors) who knew about this label. The negative impact of labeling found in this study is consistent with the findings of Hertzog (2008) who found that college students refer to the label of gifted with caution because of the expectations the label carries and the chance of disappointing people in their close environment.

Implications for Practice

The main question that arises in light of this research is the following: What kind of services can be offered to gifted students from different educational backgrounds at a postsecondary level?

A monitoring model for first year gifted students that includes a support system devised to meet the different needs of these students should be developed through initiatives such as mentoring, counseling, and academic preparation for college. Mentoring can be a meaningful experience for gifted students, especially for those who are struggling with academic and social integration during their first year of tertiary

education. Interactions with experienced members of the university learning community also can be a significant contribution and a life-changing experience.

For those students deferring college, counseling can help guide them through the process of choosing a career and help them deal with the emotional problems associated with the decision of delaying college. Support can be provided before they exit secondary education through vocational orientation programs, such as the one that is currently offered each year in the BETA program.

Creating opportunities for students to access extra-curricular academic preparation is a short-term suitable option. For example, college entrance preparation centers, called *Preuniversitarios* in Chile, have proven to be powerful tools for students to acquire the necessary skills for entering college. Creating more centers or promoting free access to the existing ones can be a suitable option for students from low socioeconomic backgrounds who do not have these opportunities, especially those from vocational schools.

Implications for Research

This research provided preliminary evidence about the postsecondary experiences of a very particular group of Chilean gifted students who came from different educational backgrounds and had a variety of experiences that affected them in different ways. Some questions that arise for further research are the following: (a) what happens to gifted students as they progress through their tertiary studies? (b) What differences can be found in the college trajectory of students who came from voucher and from vocational high schools? (c) What happens with identity development of these students and their

conceptions of giftedness? (d) How are families and schools affected? A longitudinal study with a larger sample would provide much needed information to examine variables such as students' trajectories in their postsecondary education, percentages of student withdrawal, average length of time to graduation, support systems available for gifted students, and relationships with peers.

More studies need to be conducted with students from vocational schools who are disadvantaged due to their socioeconomic backgrounds and high school academic preparedness. Aspects that can be addressed when conducting research with this particular group include the benefits and detriments of vocational preparation for college academic success, the value of pre-college preparation, and the employment of compensatory strategies by students when faced with academic and other difficulties. The study of these problems can provide valuable input for universities that currently are concerned with student attrition but have not addressed the particular issues that can affect an important number of enrolled students.

The qualitative methodology used in this study provided the researchers with the necessary richness to understand how gifted students' complex and subjective experiences are interwoven and the significances students provide to explain the phenomenon of postsecondary experiences in a distinctive way. The uniqueness of this study relies on the fact that gifted students from different educational backgrounds were part of the sample, which allowed the researchers to get an in-depth overview of how students' prior high school experiences influence their academic and psychosocial insertion to college and what modifications and adaptations students had to make to have

a successful transition to a postsecondary setting. Despite all the difficulties that were mentioned by students, especially those who had not undergone a rigorous academic preparation, gifted students showed to be very malleable to surpass the obstacles and quickly adapt to the challenging and changing environment that is college. This flexibility, along with high levels of motivation, are elements that allow us to infer that these students will remain and graduate from college.

CHAPTER IV: MANUSCRIPT III. TOWARD A PROFILE OF GIFTED COLLEGE
STUDENTS: A DESCRIPTIVE-COMPARATIVE STUDY

Abstract

This exploratory study was an attempt to combine models of college student persistence with variables that have been studied in populations of gifted college students. Two hundred and fifty-four students participated in the study (209 non-gifted, 45 gifted). Persistence and perfectionism scales, along with a sociodemographic scale, were used to compare both groups to establish a tentative profile of gifted students in college. The main conclusion was that both groups shared many sociodemographic characteristics, but significant differences were found for gifted students on pre-college academic variables. The sociodemographic variable that affected student enrollment equally was financial aid. No differences were found between groups in college persistence, except on a few items of the Intellectual Development dimension of the scale. Both groups had a healthy type of perfectionism, with gifted students achieving higher scores than their non-gifted peers on the general adaptive scale, but lower scores on the organization subscale. Gifted students also mentioned the main difficulties in college were time management, weak study habits, and lack of content knowledge. Ways to enhance student's prior academic preparation, as well as supporting their needs at a college level were discussed.

Keywords: gifted college students, college persistence, perfectionism, sociodemographic variables.

Introduction

During 2012, the top 5% of Chilean high school students from public or voucher (charter) schools with the best academic performances, as measured by grades, had direct access to higher education without taking the college entrance test (MINEDUC, 2011). This policy, created and implemented by the Ministry of Education under the current administration, was part of ongoing educational reforms in the country that had the goal of improving the equity and quality of education. Days after the Ministry of Education's announcement of this new higher education policy, public debate among researchers, practitioners, and the general public began. At least two questions were the basis of this public debate: Were students with high grades able to succeed in college? Were grades unique and valid predictors of success and persistence in college? Some of the reasoning behind this debate was based upon the phenomenon of *grade inflation*, the practice of giving a higher grade than earned. Grade inflation has occurred frequently in many public high schools in Chile. The second concern and point of debate was based upon the lack of intensive curricular content presented in some public high schools and the students' resultant inadequate academic preparation for the academic rigor of college (Gomez-Arizaga & Conejeros, 2012).

In 1980 Chilean universities increased exponentially. The number of universities augmented from eight to sixty-two when including private institutions. The increase resulted in fierce competition among the institutions of higher education to enroll gifted students, and has been termed the "university market" (Bruner & Uribe, 2007). Within this market, "offers" were made by public and private universities that included full or

partial tuition scholarships and monthly stipends for students who achieved high scores on the college entrance test called *Prueba de Selección Universitaria* (PSU). Though University recruiters put forth a great deal of effort to attract new students, the subsequent challenge of retention and attrition has presented a problem that has been addressed only partially in Chile (Himmel, 2002). Researchers have found that 50% of the students who entered tertiary institutions left before obtaining a degree. Moreover, the highest percentage of student attrition occurred in the first year of college (Tinto, 1993; González & Uribe, 2002).

The process of entering an institution of higher education has changed constantly in the last few decades; but the primary goal always has been to create a selection system to recruit highly capable students based on their merits. However, after students were recruited, they were the only ones responsible for adapting and achieving good academic results. Environmental, personal, and social factors have been addressed minimally by college personnel (Donoso & Schiefelbein, 2007). Therefore, within the context of the university, the official position among administrators and professors has been that students will succeed and are expected to do so to obtain their degrees. However, some changes have been implemented since 2010, when the Ministry of Education, through the Higher Education department, created a scholarship program for those students who entered college but needed remedial courses. The goal of this program has been to promote equity in the access to higher education and to level students' competencies so they could have an adequate academic performance and achieve success in college. After the creation of this program, higher education institutions began implementing remedial

initiatives for first year students who were at risk of failing and/or leaving college.

Around 1,000 students already have received this benefit and have been able to mitigate the weaknesses in their initial academic skills and receive a variety of supports (Ministerio de Educación, 2010).

College Attrition and Retention

Investigators have implemented quantitative measures to document the percentage of college students who were “lost” every year to determine the attrition rate. However, Pantages and Creedon (1978), in a review of the attrition and dropout literature, cautioned researchers to define clearly the concept of attrition, which could be understood as a student’s dropout from a university department, from the institution as a whole, or from higher education as a whole. On the other side, retention has been defined as student enrollment in college until degree completion. However, similar to the concept of attrition, authors have conceptualized persistence in college flexibly because of the nature of current college student career paths (Hagedorn, 2005).

College attrition rates have been studied widely, especially for students who were at risk, such as first generation college students, low-income students, and students who were part of an ethnic minority. In the United States, Ishitani (2003) found that first generation college students had a 71% higher risk of attrition than students whose parents attended college. He also found that 49% of low-income students were more likely to leave college during their first year of study than students from high socioeconomic backgrounds. Because of the attrition phenomenon, college retention programs have been developed by researchers and practitioners in the field of higher education to address

current concerns about student attrition. Particularly, college retention programs were created to address the needs of students who (a) were struggling academically, (b) came from economically vulnerable populations, and (c) were part of a minority group (Otero, Rivas, & Rivera, 2007). However, because of the academically-centered model that has prevailed at the college level, creators of retention programs usually have focused on remedial programs in which the main goal has been to master academic skills, without focusing necessarily on psychosocial or environmental components. Therefore, students who were able to master college-level content, but had trouble addressing problems such as low self-confidence, failure to commit to the institution, and lack of motivation were still at risk of dropping out (Lotkowski, Robbins, & Loeth, 2004).

In Chile, a lack of research has been identified on the topics of attrition and graduation rates. Investigators and practitioners have stated that even though enrollment rates in Chilean universities have increased exponentially in the last ten years, graduation rates remain constant (Gonzalez & Uribe, 2002). Donoso & Schiefelbein (2007) concluded that students who felt excluded socially due to their socioeconomic origin or who were struggling with college debts and loans had a higher risk of college withdrawal than students from high socioeconomic backgrounds.

Models to Explain Students' Persistence in College

Several theoretical models have been created by researchers to explain the college persistence phenomenon and factors that affect student retention and attrition. These models usually have been used to explain the complex interaction among three variables: individual, family, and institution (Nora & Cabrera, 1996).

One of the models commonly used to explain student persistence in college has been Tinto's model of college retention and completion. He investigated different variables associated with college persistence and found that family background (e.g., income and parent education), individual attributes (e.g. sex, race, and abilities), and precollege success (e.g. GPA) were factors affecting students' success in college (Tinto, 1975). After ongoing investigations of the persistence phenomenon, Tinto (1993) added the concepts of commitment and integration into the social and academic context of college as factors that also affected students' persistence in higher education.

Other researchers who developed a model to explain retention and attrition in college were Pascarella and Terenzini (1980). Similar to Tinto (1993), they referred to individual and contextual variables affecting students' persistence in college. However, they incorporated the variable of interactivity between the student and the institution. According to Tinto, formal and informal interactions between students and the institution could be a crucial factor in understanding student persistence in college because of the complex relationships between a student's background (e.g. gender, ethnicity, socioeconomic status, and pre-academic success) and the institution's mission and characteristics. Pascarella and Terenzini introduced the concept of *commitment* to college as the phenomenon reflecting these complex relationships.

Weidman's (1989) model was created with underlying assumptions that were similar to Pascarella and Terenzini's model. Both authors placed a strong emphasis on student interactions within college, especially with other students and faculty. However, Weidman focused on the quality and frequency of college students' interactions as crucial

components affecting students' persistence in college. He concluded that among the several relationships that students had, student-faculty interaction was the most important one when predicting long-term success in college (Antonio, 2004).

Ethington (1990) offered a psychological view of college persistence and withdrawal. She concluded that the value the students placed on their college education was an important individual variable to be considered when studying the college persistence phenomenon. Particularly, the author referred to the educational goals students set for themselves and the aspirations they held for their academic achievement and attaining a degree. According to Ethington, the *expectation* construct was relevant to students' college experience; it was influenced by a student's goals, perceptions of his or her skills, and the perceptions of task demands.

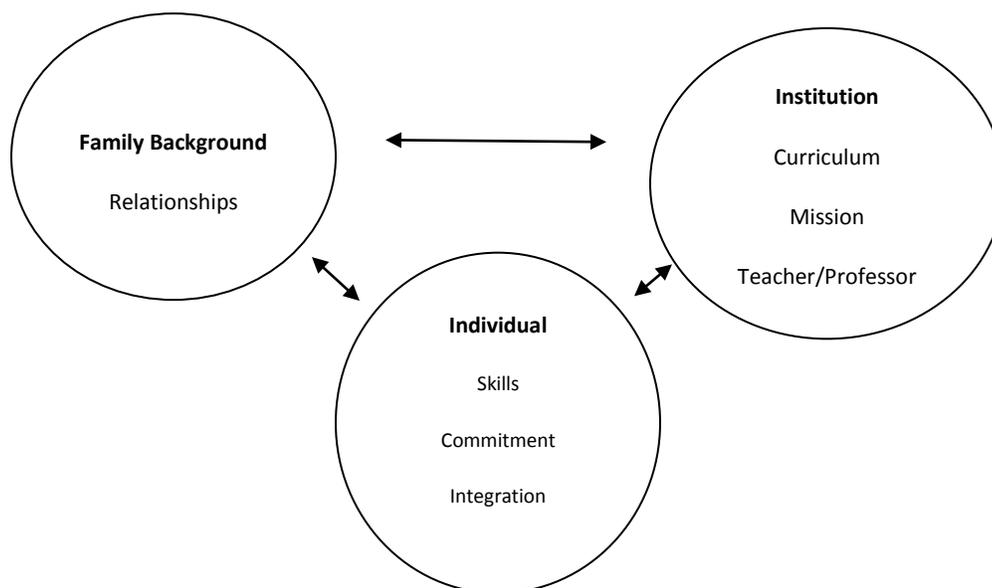
Bean (1980) also made a contribution to the college persistence phenomenon explained through psychosocial variables. He studied male and female college students' persistence and the variables that affected them separately. He found that, for women, commitment to the institution was a very important variable in the prediction of college dropout and that performance was the second most important factor for this group. Male dropout also was explained by commitment and performance; however, satisfaction played an important role when explaining male students' persistence in college.

Finally, Cabrera, Nora, and Castaneda (1992) created a model in which they acknowledge all the variables stated above; however, they added financial components as crucial elements of students' persistence in college. They proposed that finances, especially financial aid, had an effect on students' decisions about persisting and could

affect both their academic and non-academic experiences in college. Worrying about finances could have an important effect on students' academic integration into a particular institution because of the time and energy they spent on this problem, leaving them less time to dedicate to academic activities.

Incorporating multiple and complex variables to explain student retention in higher education has been defined as crucial to understanding the college persistence phenomenon in a holistic and integrated way, and should replace the use of isolated variables. An example of a holistic approach to the student retention and persistence phenomenon has been shown in Figure 4.1, based on the contributions of several authors in the field (Bean, 1985; Tinto, 1987; Weidman, 1989; Ethington, 1990). Authors who adopted a holistic approach to student retention might find an advantage in understanding student persistence in a multi-causal and multifactorial way. Also, a holistic approach could be implemented by practitioners to improve retention policies.

Figure 4.1. An Example of a Holistic Model of College Student Persistence



Variables Affecting Gifted Students' Experience in College

Research about gifted students' college persistence and the multiplicity of factors that affect persistence has not been developed in Chile. In the United States, researchers have investigated gifted college students who belong to special populations, such as women and minority students, and have studied the factors that influenced their college success (Rinn & Plucker, 2004). Multiple factors have been investigated related to gifted students' college experiences, which are mainly academic (e.g. achievement), intrapersonal (e.g. self-esteem) and relational (e.g. peer relationships) (Laycock, 1984; Speirs-Neumeister & Hebert 2003; Speirs- Neumeister, 2004; Rinn & Plucker, 2004; Hammond, McBee, & Hebert, 2007). For the purposes of this investigation, the following variables were considered for analyses: (a) perfectionism and (b) sociodemographic background. These variables were chosen because of their investigative relevance throughout the last ten years in the fields of higher education and education of gifted students and because of the existence of current, valid, and reliable scales to measure these constructs.

Perfectionism. The perfectionism variable has been investigated by researchers in the field of education of the gifted (Roberts & Lovett, 1994; Schuler, 2000) because of the negative consequences perfectionism could have on gifted students' mental health (Frost, Marten, Lahart, & Rosenblate, 1990) and on their socio-emotional development. Perfectionism has been conceptualized as a multidimensional construct (Frost, Marten, Lahart, & Rosenblate, 1991; Flett, Hewitt, Blankstein, & Dynin, 1994), which has intrapersonal and interpersonal components. Hamachek (1978) described two types of

perfectionism, normal and neurotic. People with normal perfectionism worked for excellence and showed satisfaction with their efforts. These individuals enjoyed their own skills, appreciated a work well done, and valued other people's approval, focusing on strengths and adopting a good attitude. People with neurotic perfectionism never felt satisfied with their efforts and were focused on their weaknesses and on avoiding failure. They usually felt anxious, confused, and emotionally exhausted before a new task (Dixon, Lapsley, & Hanchon, 2004). Healthy perfectionism was defined by Adler (1973) and Maslow (1971). For Adler, a healthy perfectionism could allow an individual to achieve excellence, and for Maslow, it could maximize a person's potential through a self-realization process.

Researchers who have conducted investigations about gifted students' perfectionism have found mixed results. Some of them have suggested that gifted individuals had higher levels of maladaptive (neurotic) perfectionism than their non-gifted peers and that this situation could lead to negative personal or interpersonal consequences (Roberts & Lovett, 1994; Webb, 1994). However, Parker and Mills (1996) in a study conducted with 600 gifted and 418 non-gifted middle school students using the Multidimensional Perfectionism Scale (Frost, Marten, & Lahart, 1990), found no significant differences between both groups in general perfectionism scores. They did find differences on two subscales of the instrument, Doubts about Actions and Organization, which were higher for the non-gifted group. LoCicero and Ashby (2000), who also conducted a comparative study, found that gifted students were more likely to

be perfectionists than their non-gifted peers but in *adaptive* ways, which could suggest the presence of a healthy type of perfectionism for the gifted students' cohort.

Other investigations have been conducted in the study of perfectionism and gifted students. Speirs-Neumeister (2004), in her qualitative and retrospective study of gifted college students, found that early academic experiences (i.e. challenging curriculum) were critical for the development of a "healthy" type of perfectionism. She also found that parents were important contributors to the creation of a self-oriented or socially prescribed type of perfectionism in gifted individuals. Socially oriented perfectionists viewed their parents as being authoritarian and setting rigid and excessive expectations for them because of their parents' own perfectionistic styles. Students who were self-oriented perfectionists saw their parents as perfectionists also, but they considered them role models rather than authority figures imposing rules for perfectionism on their children.

Sociodemographic variables. Sociodemographic traits were variables that have been studied widely in the field of higher education, college persistence, and success. These variables have included sex, race and ethnicity, age of the student, parents' education, and family income. In early studies, researchers suggested that sex had an impact on college persistence, with women finishing their degrees at higher rates than their male counterparts. Also, authors have suggested that students' race could impact college persistence as well, with Caucasian students having higher entrance rates and academic success than students from other ethnicities (Rendón, Jalomo, & Nora, 2000). However, recently, authors have found that these variables *per se* did not have a direct

impact on college persistence; instead, the combination of these variables with socioeconomic status (SES) and income background were significantly related to college persistence (Pascarella & Terenzini, 2005), with low SES college students attaining lower academic results in college than their high SES counterparts (Walpole, 2003). Parents' educational levels also have been studied as a variable affecting student persistence in college. However, for some researchers, not only parents' education, but also their support and the quality of their relationships with their children were determining factors of students' persistence in higher education (Rendón, Jalomo, & Nora, 2000).

Pre-college academic variables. Students' high school academic preparation and performance (i.e. grade point average, [GPA]), including a successful completion of college preparatory coursework, have been defined by researchers in the United States as two strong predictors of college persistence (Reason, 2003). In Chile, however, students' high school performance, measured by the *Notas de Enseñanza Media* (NEM) has not been considered a strong predictor of college success, especially because of the *grade inflation* phenomenon that occurs particularly in public high schools in Chile. Gomez and Conejeros (2012), in a study of gifted students' postsecondary experiences, showed that gifted college students who attended public vocational schools, even though they had high grades and very successful academic performance in high school, did not have the same successful academic experiences in college. Some of the students were underachieving, and many of them questioned their giftedness in the higher education context.

High school curriculum also could have an impact on students' college persistence and the careers they chose. Participation in Advanced Placement and Honors classes could have a major influence on students' academic success and persistence. Adelman (2006) concluded that the quality of the curriculum had a greater impact on students' persistence and completion of first year of college than SAT or ACT scores. Lack of academic challenge, bad teaching and learning strategies, and a less attractive or rigorous high school curriculum could lead to gifted students' failure and boredom and their desire to leave and/or change to a different major or college (Horn & Kojaku, 2001).

In Chile, one of the most important problems has been the gap in the academic performance of students from public, voucher (charter), and private schools. Several reasons have been stated to explain this problem, such as students' SES and cultural capital, socioeconomic segregation of public schools, and the curricular differences between types of schools. Generally, students from certain voucher and private schools had highly challenging high school academic preparation and college preparation courses. On the other side, students attending public high schools in Chile usually attended vocational schools because of (a) the proximity to their neighborhoods and (b) their parents' expectations and/or desires for their children to obtain a trade certificate so that they could find a job if they chose not to enter college. Because the main focus of vocational schools has been technical preparation, students have lacked the necessary content knowledge to meet some of the college requirements (Gomez & Conejeros, 2012). In addition, implementers of the curriculum in vocational schools have addressed

only half of the content areas that are covered in regular high schools in Chile (Eyzaguirre & Le Foulon, 2002).

College variables. Many college-related variables have been studied as relevant to students' persistence in higher education. Probably one of the most common has been GPA because of the effects it could have on a students' academic trajectory (Loury & Garman, 1995). Grade Point Average also has been considered a good predictor of persistence because researchers have demonstrated a positive correlation between GPA and the rates of completion of tertiary studies (Wetzel, O'Toole, & Peterson, 1999). Closely related to GPA, the number of courses students passed over a period of time, referred to as course pass rates, has been studied as affecting persistence because of the effects it could have on students' progress or stagnation through the course of their college studies (Weissman et al., 2009).

Students' attitudes toward the financial support they received to pursue tertiary education has been studied as affecting their intentions to persist and their decision-making process about staying at a particular institution (Cabrera, Castaneda, Nora, & Hengstler, 1992). Researchers have shown that financial aid could affect students' persistence and graduation rates positively (DesJardins, Ahlburg, & McCall, 1999).

Research about gifted students' college persistence and the multiplicity of factors that affected them has been scarce. Rinn and Plucker (2004), in their investigation *We Recruit Them, But Then What? The Educational and Psychological Experiences of Academically Talented Undergraduates*, claimed "research on the programs and opportunities provided for talented undergraduates at institutions of higher education was

limited, leaving researchers to question what universities are doing for bright students” (p.54). Incorporating gifted students’ experiences in college and analyzing the factors affecting that experience as well as their consequent persistence in college could be an important contribution to research and practice. A complex and comprehensive analysis of the multiple factors that have affected gifted students’ persistence in college could help to answer Rinn and Plucker’s claim of the need for continuous investigation in this field and fill the current research gap with supporting evidence about college students’ experiences and adjustment to college. To provide an answer to the practical implications of their claim, by having a model of gifted students’ persistence in college, practitioners at tertiary institutions could be able to implement programs specially designed to meet the needs of gifted students, not only addressing college academic demands, but also the psychosocial factors that have affected students’ experiences in college.

The purpose of this study was to investigate the variables that influenced gifted students’ college experiences to develop a tentative descriptive profile of Chilean gifted students in higher education. The goal was to outline this profile using a descriptive-comparative exploratory approach combining general theories of college persistence with other variables that have been identified by researchers as particularly affecting gifted students. The following research questions guided the study:

1. What were the salient sociodemographic and psychosocial characteristics of gifted students in college?
2. What factors or combination of variables explained gifted college students’ persistence in college?

3. What were students' perceptions of the main difficulties they experienced in college?

Methods

Research Design

A cross-sectional exploratory study design was chosen for this research in which all measures were taken at one point in time. The research was conducted using a descriptive-comparative design with a group of gifted and non-gifted college students to explore comparatively which variables affected particularly gifted college students, a topic that has not been addressed widely by researchers in the field. Ahonen et al. (2009) defined an exploratory approach as appropriate when little previous research has been conducted about the study subject and when the goal of the investigation has been to identify variables and to generate hypotheses for future research. By conducting a descriptive-comparative exploratory study, the authors intended to document and describe in depth gifted students' characteristics and experiences in college.

In this study, we used survey methodology to measure (a) sociodemographic and academic college-related variables and (b) psychosocial variables that have been investigated as influencing gifted and non-gifted students' experiences in college. Descriptive exploratory survey research has been defined as appropriate at early stages of investigating a phenomenon to describe and tentatively explain a phenomenon (Dubin, 1978).

Participants

The samples for this study were drawn from two departments that were part of a central semi-public university in Chile, Education (N=510) and Chemistry (N=526). Students from the following careers (majors) within those departments were in the pool for selection: (a) early childhood education (b) elementary education, (c) special education, (d) biochemistry, (e) industrial chemistry, and (f) chemistry teaching. After a purposive stratified sampling procedure, 141 education students and 97 chemistry students were selected and agreed to participate in the study. We also decided to include 16 participants from a pilot phase of this study conducted only with gifted students, for a total sample of 254 students.

Instruments

Two instruments were used in this study and were administered simultaneously to the sample: the *Raven's Standard Progressive Matrices* (SPM) and a questionnaire to measure the variables under study.

Raven's Standard Progressive Matrices. The SPM has been used as a non-verbal assessment of fluid intelligence (Mills & Ablard, 1993) for people from age six to adults. Researchers have described it as a good instrument to assess higher level thinking processes, analogy reasoning, and as a means to learn from immediate experience. Also, the SPM has been considered a relatively quick and easy way to assess large groups of students. The reliability coefficient for the SPM has ranged from .76 to .91. Analysis of the concurrent validity of the SPM with other intelligence scales has yielded correlations higher than .75 (Burke, 1985). No national norms have been created for the SPM in

Chile; however, several practitioners in the country have used it to create local norms, which means students' scores have been compared with those of their own peers to create norms for the particular group where the SPM was administered. For the purpose of this research, college students scoring above the 90th percentile on the SPM were considered gifted.

Questionnaire. A self-report questionnaire was designed to collect data that were subsequently grouped into four categories: (a) socio-demographic variables, (b) academic variables, (c) college persistence, and (d) perfectionism. A pilot study was conducted prior to this research with a sample of college students to assess the instrument's reliability and validity with Cronbach's Alpha, content validity, and construct validity using factor analysis with Varimax rotation. The reliability scores for the total survey and the survey's subscales ranged from .81 to .74 (Gomez-Arizaga, n.d.).

The survey consisted of 103 Likert-type questions that were based on questionnaires identified in the literature pertaining to college persistence and gifted students, plus a final open-ended question for students to identify the main difficulties they had in college and what strategies they had used to overcome them. Student socio-demographic and academic variables included (a) family background information, measured by indices of socioeconomic status (SES), parents' working situation, and parents' educational level; (b) pre-college academic data such as type of school attended (e.g. public, charter, or private), high school GPA (i.e. *Notas de Enseñanza Media* [NEM]), and score on the college entrance test, PSU; and (c) current college information,

such as college GPA, major and/or college transfer, number of approved and failed courses throughout the years in college, and types of financial aid received, if any.

The college persistence dimension of the survey included Pascarella and Terenzini's (1980) instrument, which was translated into Spanish and validated in the previous pilot study (Gomez-Arizaga, n.d.). The instrument had five scales: (a) peer-group interactions, (b) interactions with faculty, (c) faculty concern for student development and teaching, (d) academic and intellectual development, and (e) institutional and goal commitments. Statements for this scale were presented on a 5-point Likert scale. Researchers have reported a reliability of .91 for this instrument (Duffy, 2009). A reliability coefficient of .80 was found for the persistence instrument in the pilot phase that preceded this study.

For measuring perfectionism, the Multidimensional Perfectionism Scale (MPS) (Frost, Marten, & Lahart, 1990), Spanish version, was used. The MPS was designed to measure both self-oriented and socially-prescribed perfectionism. The subscales that made up the MPS were the following: (a) concern over mistakes (CM), (b) personal standards (PS), (c) doubting of action (DA), (d) parental expectations (PE), (e) parental criticism (PC), and (f) organization (O). The response scale for each of the items ranged from "strongly disagree" to "strongly agree" (5-point Likert scale). High scores on the PS, PE, and O scales have been defined as indicative of an adaptive or healthy type of perfectionism; on the other hand, high scores on CM, DA, and PC would mean the presence of a maladaptive or unhealthy type of perfectionism. Authors stated that the MPS was reliable with Cronbach's alpha of the MPS scales ranging between .94 and .85

for English and Spanish versions (Frost, Marten, & Lahart, 1990; Franco, Mancilla, & Vasquez, 2010). The reliability coefficient for the MPS scale obtained prior to this investigation was in the high range ($\alpha = .78$).

Data Collection Procedures

Participants were contacted before the study began to confirm their participation and to have them sign a consent form. After the consent process, instruments were administered within a 2-week period. The total duration of the administration process was two hours. No material incentives were given to students for participation in the study; however, access to the results and a short feedback session about those results was offered to students.

Data Analysis

Characteristics of students and group differences. Descriptive statistics were used to generate a profile of gifted college students' sociodemographic and academic characteristics. Unadjusted chi square analyses and independent samples t tests were used to compare gifted and non-gifted students' sociodemographic and academic characteristics, college persistence, perfectionism, and resilience. Chi square has been recommended as an adequate analysis for categorical data provided by Likert-type scales used in surveys, and t tests were used for comparisons of continuous variables, such as scores in scales and subscales of each of the instruments used.

Relationship between variables. To analyze the variables that predicted students' persistence in college, the technique chosen by the authors was multiple regression. Multiple regression has been defined as a statistical method for studying the

relationship between a single dependent variable and one or more independent variables (Allison, 1999). The dependent variable was student enrollment in the semester following the administration of the questionnaire (gifted=98%, non-gifted=97%). Three multiple regression models were investigated with the following clusters of independent variables: (a) sociodemographic data, (b) pre-academic variables, and (c) college variables.

Students' perceptions of difficulties faced in college. To answer the third research question of this investigation about students' perceptions of the difficulties faced in college, content analysis of students' responses to the final open-ended survey question was conducted. Content analysis allowed the researchers to describe the characteristics of the response, make inferences about it, and summarize the main aspects of the responses (Berelson, 1952). Words used by participants to describe their difficulties were summarized and categorized, and frequencies of responses were reported.

Results

The results of the administration of the SPM were that 29 students of the sample were considered gifted. Also, 16 students from the pilot phase of this investigation, who also were in the 90th percentile of the SPM, were incorporated for a total sample of 45 gifted students.

Characteristics of Gifted College Students

Sociodemographic and academic variables. All the sociodemographic and academic variables for the sample of gifted students have been displayed in detail in Table 4.1. In general, one or both parents of gifted college students had secondary or tertiary education, were currently employed, and earned an income that was in the

average range. The majority of the students in the sample had gone to charter schools and had good academic standing in high school and college. Most of the students had entered college right after high school, had not failed college courses, had stayed in the same career (major), and had received some kind of financial aid to pursue their college education. After conducting chi square analysis for gifted and non-gifted students, the major differences between both groups were high school GPA $\chi^2(4, N = 254) = 14.4, p = .006$ and college entrance scores $\chi^2(6, N = 254) = 21.28, p = .002$. Gifted college students achieved higher grades and scores than their non-gifted counterparts.

Table 4.1

Characteristics of Gifted College Students

Variables	Frequency	Percentage
1. Sociodemographic		
Sex		
Male	20	44%
Female	25	56%
Father's Education		
Elementary-Incomplete	3	7%
Elementary-Complete	2	4%
Secondary-Incomplete	10	22%
Secondary-Complete	12	27%
Tertiary-Incomplete	4	9%
Tertiary-Complete	11	24%
N/A	3	7%
Mother's Education		
Elementary-Incomplete	3	7%
Elementary-Complete	2	4%
Secondary-Incomplete	11	25%
Secondary-Complete	14	31%
Tertiary-Incomplete	5	11%
Tertiary-Complete	10	22%

(Continued)

Table 4.1
Characteristics of Gifted College Students

Variables	Frequency	Percentage
Employment situation		
Both parents work	16	35%
Only father works	12	27%
Only mother works	8	18%
Both not working	9	20%
Monthly income		
Less than U\$ 300	4	9%
U\$ 400- U\$ 600	8	18%
U\$ 600- U\$ 800	11	24%
U\$ 800- U\$ 2400	17	38%
U\$ 3400- U\$ 7000	5	11%
2. Pre-College		
Type of High School		
Trade-Public	4	9%
Regular-Public	5	11%
Trade-Voucher	2	4%
Regular-Voucher	25	56%
Private	9	20%

(Continued)

Table 4.1

Characteristics of Gifted College Students

Variables	Frequency	Percentage
High School GPA ^a		
Less than 5.0	8	18%
5.0-5.4	7	15%
5.5-5.9	3	7%
6.0-6.5	13	29%
6.5-7.0	14	31%
PSU ^b		
450-499	3	7%
500-549	2	4%
550-599	5	11%
600-649	14	31%
650-699	13	29%
700-749	7	16%
More than 750	1	2%
3. College		
College Delay		
Yes	5	89%
No	40	11%
College GPA		
4.0-4.4	1	2%
4.5-4.9	7	16%
5.0-5.4	18	40%
5.5-5.9	15	33%
6.0-6.4	4	9%

(Continued)

Table 4.1
Characteristics of Gifted College Students

Variables	Frequency	Percentage
3. College		
Failed College Courses		
0	25	56%
1	4	9%
2	6	13%
3	4	9%
4	1	2%
More than 4	5	11%
Change of college/major		
Yes	10	22%
No	35	78%
Financial Aid		
Yes	37	82%
No	8	18%

^a High school and college GPA in Chile is a continuous score that can range from 1.0 to 7.0; 4.0 is the minimum score for approval of a course.

^b College entrance score in Chile is distributed on a continuous scale. A score between 500 and 600 is considered satisfactory for a student to be accepted in many public universities; however, some renowned universities have cut-off scores as high as 700.

Psychosocial variables. Comparisons were made among groups to analyze the differences between the constructs of college persistence and perfectionism. Besides *t* test analyses for comparing total and subscale scores of all the instruments in the study, we decided to conduct item-by-item comparative analyses using chi square.

Persistence. No significant differences were found between the total scores of gifted ($M=93.3$, $SD=9.57$) and non-gifted students ($M=92.6$, $SD=10.21$), $t(252) = .437$, $p=.732$ for the college persistence scale. However, significant differences were found in four items of the instrument, one in the Faculty Concern subscale and three in the Academic and Intellectual Development subscale. For item 13 in the Faculty Concern subscale, the significant difference was that gifted students perceived faculty members as more available outside the classroom and as more willing to discuss important and interesting topics than did their non-gifted peers $\chi^2(3, N = 254) = 9.19$, $p = .027$. For items 19, 27, and 29 of the Academic and Intellectual Development scale, the results were that gifted students had a greater tendency to find college courses intellectually stimulating $\chi^2(3, N = 254) = 8.45$, $p = .037$; were less concerned about college GPA $\chi^2(4, N = 254) = 12.13$, $p = .016$; and more self-critical about their current academic performance in college $\chi^2(3, N = 254) = 8.10$, $p = .044$ than were their non-gifted peers.

Perfectionism. Scores on the adaptive and maladaptive dimensions of the MPS were compared for gifted and non-gifted students. Significant differences were found for the adaptive MPS dimension, with gifted students achieving higher scores ($M=50.75$, $SD=7.02$) than their non-gifted peers ($M=47.89$, $SD=7.53$), $t(252) = 2.341$, $p=.02$. Specifically, gifted students' scores were higher ($M=19.77$, $SD=3.75$) than those of non-

gifted students ($M=15.07$, $SD=3.64$) for the Personal Standards subscale of the adaptive dimension of perfectionism $t(252) = 6.753$, $p = .001$. However, gifted students' scores on the Organization subscale were significantly lower ($M=18.71$, $SD=3.99$) than those of non-gifted peers ($M=20.33$, $SD=3.64$) $t(252) = -2.65$, $p = .008$.

Scores for gifted ($M=31.26$, $SD=6.43$) and non-gifted students ($M=32.35$, $SD=9.53$) were low for the maladaptive dimension of the MPS, and no significant differences were found between the groups $t(252) = -.732$, $p = .46$.

Analysis of Predictive Variables to Explain Gifted Students' Persistence in College

Multiple regression analysis was conducted to determine what factors affected gifted college students' enrollment in college. The results of the regression performed with sociodemographic variables as predictor variables were that the predictors as a whole explained only 5% of the variance ($R^2=.053$, $F(4, 40) = .558$, $p=.694$). When pre-academic variables were introduced as predictor variables, the model only explained 4% of the variance ($R^2=.038$, $F(3, 41) = .545$, $p=.654$). College predictor variables, only helped by explaining 12% of the variance ($R^2=.123$, $F(4, 40) = 1.401$, $p=.251$). The only single variable that was related significantly to student enrollment and consequent persistence in college for both gifted and non-gifted students was financial aid ($\beta = -.116$; $t = -1.986$; $p = .05$). A summary of the multiple regression analyses and results has been shown in Table 4.2.

Table 4.2

Summary of Multiple Regression Analyses

Variables	B	SE(B)	β	t	Sig. (p)
Sociodemographic					
Father education	-.006	.017	-.066	-.359	.722
Mother education	.018	.023	.178	.807	.424
Work	.012	.024	.093	.504	.617
Income	.006	.024	.049	.269	.790
Pre-college					
Type of school	-.020	.029	-.155	-.678	.501
PSU scores	.008	.019	.082	.419	.677
High school GPA	-.006	.025	-.047	-.233	.817
College					
College GPA	.017	.024	.107	.719	.476
Failed classes	.005	.013	.064	.417	.679
College change	-.025	.054	-.071	-.464	.645
Financial aid	-.116	.059	-.302	-1.986	.054

Students' Perceptions of the Main Difficulties they experienced in College

In the open-ended section of the survey, students were invited to speak freely about their academic and psychosocial experiences in college. In addition, they were invited to talk about the significant difficulties that they faced in college.

The difficulties that gifted college students had were linked to personal and contextual factors. The most predominant were those related to the personal dimension, which was expressed in habits, organizational skills, motivation, attitudes, emotional strength, and personality. Other difficulties were related to a contextual dimension that included college academic requirements and demands, students' previous academic experiences related to the type of high school they attended, economic needs, labor demands, being away from home, discrimination because of their socioeconomic level, and pregnancy. All the categories of responses have been shown in Table 4.3. In this analysis, only the categories that had the highest frequencies of appearance were reported.

Table 4.3

College Difficulties Listed by Gifted College Students

Categories	Percentage
Habits/organization/time management	22%
Poor high school content knowledge	14%
Being away from home /independent life	12%
Emotional strength, and personality	12%
Relationship with other college students	10%
Increased college workload	7%
Transition from high school to college	5%
Less time because of work	4%
Teaching methodology	4%
Taking courses different from interests	3%

(Continued)

Table 4.3

College Difficulties Listed by Gifted College Students

Categories	Percentage
Lack of resources	3%
Unchallenging college courses/topics	1%
Pregnancy	1%
Discrimination because of their socioeconomic level	1%

The role of organization and time management for a successful adaptation to college life. Many of the students who answered the survey mentioned having problems with time management, organization, and the amount of time dedicated to study. This difficulty was linked to the short time devoted to organization, specifically, not being able to juggle college courses and time for study. This difficulty with organization was translated into a feeling of not being able to fulfill or respond to the academic requirements of college life.

Some examples of students' comments about time management were the following:

- *The main difficulties I have faced are the lack of time management to do all the tasks that college entrusts.*
- *In college we are supposed to regulate ourselves, but it's hard.*

For students, organization and time management involved a process of self-regulating their learning. Students felt that not developing the ability to organize and self-regulate their time frequently translated into poor results and, therefore, increased the possibility

of not graduating. Furthermore, the students felt that this self-regulation was a necessity, and they looked for strategies that allowed them to respond in the best way:

- *My difficulty is being able to organize times for study, and to juggle study with other activities. I have tried to plan ahead and have a schedule, but it can be exhausting.*
- *My main difficulty is the distribution of times for study. To face this I have dedicated extra time to organize myself and to achieve a habit of study.*
- *Study habits have been a major difficulty for me. In school everything was so easy and I did not study much, but now I have to study a lot.*

College academic demands. Academic demands in college emerged as another category of difficulties faced by students, and were described as very different from high school. Being able to face these demands involved the use of personal resources that required a major investment of time and work:

- *One of the things that has been hard for me is the academic load generated by some professors who feel that their class is the only class that we have. So we have to work hard during our free times and sleep less than usual.*
- *The increased academic workload was a big problem, especially during the first year of college. I needed to invest a greater amount of time to study.*

These high demands also involved an adjustment to a pace of work that was different from before. The transition from high school to college life was mentioned by students as a central aspect in their difficulties to adjust:

- *The radical change from high school to college, both academically and socially. I had to change my attitudes and habits and at the same time, grow as person. I try to overcome college stress by dedicating time to a variety of hobbies.*
- *The major difficulty was to fulfill the requirements demanded by college, because I came from a public high school where we had less academic demands. To face this situation I had to design study plans that could allow me to follow the pace of college, to be more organized, and to be responsible for my own learning.*
- *When I came to college it was not enough to pay attention in class; now I have to study, buy books, and concentrate much more than before.*
- *My main limitations were to have attended a vocational high school, with low academic rigor in many areas.*

Another difficulty of the transition from high school to college was the disparity of content knowledge, which was linked to the type of high school the student attended. For example, teachers in trade or vocational high schools did not address all the content knowledge of regular high schools:

- *One difficulty has been to face the disparity of content knowledge that I had for coming from a vocational high school. To face this I have to study very hard, which has reduced my time for other activities.*
- *My main limitations were to have attended a vocational high school, with low academic rigor in many areas.*
- *I had a bad academic foundation in science. I had to study twice as much as my classmates.*

Within the social realm, adjustment difficulties were related to the type of relationships that were created with peers, especially establishing academic relationships (e.g. study groups) that could contribute to students' academic progress. Not being able to develop this relationship was perceived as a difficulty for fulfilling the academic experiences of college:

- *In fact I am going through difficult times, not having a group to work with, especially for group work, which causes me many problems. Today I talked to a classmate to ask her if she wants to work with me in different activities.*
- *It was hard for me to integrate myself to a group and feel that they cared about me.*

The independent life. Students stated that family relationships and family emotional support were important aspects of their lives. However, the geographical location of colleges forced students to live far away from their homes, which was perceived as a difficulty. For many students, living alone and assuming the role of a college student brought challenges related to economic difficulties, a lack of resources or networks for emotional support, and the additional domestic tasks inherent in living an independent life. Peer relationships became very relevant in facing this difficulty as did securing a formal or informal job:

- *The main difficulty is to be far away from home, to have little money. However, one gets used to being away, makes new friends, etc. To solve my money issues I work selling things such as sweets during student protests.*

The process of individuation was developing the capabilities to live an independent life and detach from parental figures. Through this process, students were forced to take on major responsibilities:

- *Living in another city has been the most difficult thing because there are more responsibilities and family is missed. To face this I think about my family that always supports me and also that I will have a great reward for all that I'm doing.*

Personality traits. For some students, their academic process was impeded by their own personality traits, which negatively affected their mental health and their ability to establish relationships with other students. Some of the difficulties related to personality traits that were mentioned by students were the following:

- *Being exposed to others. Worries, fears.*
- *My shyness and lack of trust in other people have been some of the main difficulties I've had. To overcome this and to help myself I have tried to participate more often in group work, trying to have more voice and giving opinions.*

Discussion

The purpose of this exploratory study was to analyze gifted students' experiences in college and what tentative factors helped to explain this complex phenomenon. Limitations of the study need to be acknowledged, such as the social desirability effect that can be generated by self-report measures, the cross-sectional nature of the study, and the sample size of the group of gifted students, which could affect the ability to

generalize results, because of participants' selective mortality and the difference that exists between cohorts.

In this study, a tentative profile of gifted college students can be generated through the analysis of many variables that affect these students' experiences in higher education. The analysis of sociodemographic and academic variables yielded that gifted students have good academic standing both in high school and in college, and they achieve higher grades and higher scores on the college entrance test than their non-gifted peers. This finding is consistent with findings related to giftedness and scholastic achievement in which researchers have found that high cognitive abilities can predict successful results on standardized tests of academic achievement (Gagne & St. Pere, 2001). In this way, high achieving gifted students can master school content rapidly and, therefore, accomplish high scores on college entrance tests such as the Chilean PSU, a purely content-based measure that is not an aptitude or skill-based assessment.

Another aspect of the academic portion of the profile under description is gifted students' intellectual interest in college and fulfillment with their college academic experiences. The intellectual significance given to college is reflected through students' formal and informal interactions with faculty and interest in college courses. Although not directly measured in this study, motivation and persistence over time are constructs that can be used to explain these findings (Risemberg & Zimmerman, 1992). In an early study with Chilean college gifted students, Gomez-Arizaga and Conejeros (2012) found that gifted students, despite initial academic and social difficulties faced in college, had a strong desire to complete the tertiary studies that had relevance in their future lives. In

another study, Olszewski-Kubilius and Laubscher (1996) also found that gifted students were confident about getting accepted into college, gave great importance to higher education, and had aspirations to attain graduate degrees.

Experiences and enrollment in college, however, can be threatened by the lack of solid economic support, which for the majority of students takes the form of financial aid. This concern is consistent with models of persistence such as the one established by Cabrera, Nora, and Castaneda (1992). They saw the role of financial aid as crucial for students so that they could focus on their studies instead of constantly worrying about financial support. Concern about financial stability is relevant to Chile. In the last few years the Chilean college population has increased dramatically, and 80% of students who enter higher education are first generation college students (Meneses, Rolando, Valenzuela, & Vega, 2010).

The psychosocial component of the profile was related to students' perfectionism. The results of this study supported those of Parker and Mills (1996) and LoCicero and Ashby (2000) who concluded that, contrary to what might be expected, gifted students show a healthy and/or adaptive type of perfectionism that can help them strive for excellence and have successful academic experiences. These successes can be reached by setting realistic goals and having high personal standards, which are dimensions of the perfectionism scale on which gifted students had higher scores. A slightly unexpected finding for the researchers was the low scores achieved by gifted students on the organizational dimension of perfectionism. However, this aspect needs to be related to the findings on the open-ended section of the study. There, students stated that the main

problems they experienced in college was a lack of organizational skills that would allow them to face the universities' academic rigor. These skills included time management and the development of study habits. Many gifted students in the sample were able to master high school content, but did not necessarily have the academic skills that are needed for thriving in college. Therefore, the lack of *rigorous high school academic training* and the lack of opportunities and economic vulnerability are affecting students' experiences in college (Donoso, Donoso & Arias, 2010).

Finally, college gifted students under this profile are engaged in one of the last developmental tasks before becoming a young adult, an independent individual. However, this task is not exempt from difficulties that are inherent to the process and include finding a job and dealing with daily domestic chores.

Implications for Research

Further research needs to be undertaken that would incorporate more variables so that this complex phenomenon can be understood better. These variables might be related directly to students' persistence as a psychosocial construct that occurs in college and include motivation and/or achievement motivation. Also, special populations, such as gifted women and underachieving gifted students, should be included and their data analyzed separately as their experiences in college might be quite different. A qualitative methodology might be an appropriate approach to capture the richness of these students' descriptions of their experiences in college.

Implications for Practice

Recruiting efforts by universities in Chile are increasing as the institutions fight to attract the brightest students. Enrollment rates have increased exponentially in the last few years; however, little is done to retain these students. Problems such as lack of support and teachers whose methods do not meet students' needs have been identified as affecting student graduation rates (Gonzalez & Uribe, 2002). Academic support for gifted students needs to occur at two educational levels, high school and college. Students need to experience academic preparation that is not only rich in content, but also one in which educators prepare students by providing skills and tools for future college academic rigor. Initiatives such as Advanced Placement classes and college credit at a high school level tend to be more available for students from private schools than for those who attend public high schools. However, efforts need to be directed differently. Gifted students from non-wealthy backgrounds are not going to reach their maximum academic potential *naturally* or succeed in college just because of their giftedness. They need a continuous support system during which educators provide the necessary skills and tools to help them succeed in higher education.

In addition, academic mentors can be part of students' integration to college life. The researchers in this study found that students felt confident interacting with faculty members. Therefore, formal initiatives need to be created for gifted students that allow them to interact with faculty and/or other gifted students who have struggled but have been successful in college. These interactions can be good long-term solutions to help college gifted students face difficulties such as the ones found in this study.

The combination of analyses conducted in this study has contributed to have an in-depth and complex overview of gifted students in college and their unique demographic, academic, and psychosocial characteristics. The profile described in this study shed light about the following characteristics of gifted students: (a) they tend to succeed academically in college, (b) they are concerned about their performance but not overly preoccupied for their grades, (c) they are lacking complementary academic skills necessary for success, (e.g. time management), and (d) they have a healthy type of perfectionism that helps them thrive through college. More research needs to be conducted, because the study of multiple variables in the field of college gifted students' education has been scarce. Further research should include more sophisticated and long-term analyses to examine additional intricate relationships between variables.

CHAPTER V: CONCLUSIONS

Limitations

Some limitations can be found across the studies included in this dissertation. The first one is related to the use of self-report measures. Self-report questionnaires were the choice of instrument for this dissertation because they were easy to administer, inexpensive, and were one of the most viable forms of measuring psychological constructs such as self-esteem and perfectionism. However, some researchers have reported that the use of these types of assessments can produce responses that reflect self-presentation bias or what has been called the social desirability phenomenon (Soubelet & Salthouse, 2011). Social desirability can be understood as a personality trait in which the individual tends to give positive self-descriptions and evading answers that can be perceived by him or her as socially undesirable (Paulhus, 2002). Some ways to address this limitation is to enhance the instructions provided with the instrument or adding a social desirability scale to the assessment that is being used (Peter & Valkenburg, 2011).

Another limitation was the size of the samples that were included and analyzed. Investigating samples of gifted students frequently poses challenges for researchers because the size of the entire population is rather small (i.e. 10% or 15% percent of the entire student population). The limitations I encountered were related to performing statistical analyses that included comparisons between different groups (e.g. students from voucher and public schools) and between gifted and non-gifted college students. Ways of addressing this problem in future research are (a) to expand the size of the

samples including gifted students from other cities, districts, or states, and (b) conducting different types of statistical analyses such as non-parametric tests.

Conclusions

Rinn and Plucker (2004), in a review of relevant literature about gifted college students, claimed a lack of investigation surrounding the experiences of gifted undergraduates. The results of the three manuscripts of this dissertation are a contribution that continues the development of this relatively unexplored area of research. The investigations that I conducted also contribute to answering the following overarching question: what are the characteristics and experiences of gifted Chilean college students?

Readiness

Chilean gifted students' academic preparedness for college is influenced by their previous academic experiences in high school. Students' success or failure in the college entrance test is related to what high school they attended. Students who attend voucher (charter) schools accomplish excellent results in pre-college and college assessments, and even in intelligence scales in which they achieve better than gifted peers from public schools. Students' achievement was not influenced by psychosocial constructs as has been shown by some authors (c.f. Furnham & Morsen, 2009; Marsh & Craven, 2006); however, the factor that was associated strongly with achievement was intelligence as demonstrated in the first study of this dissertation. The interpretation I provide for this study is that the cultural capital that these students have and the way it is nurtured in schools can be a strong influence in their current and future academic performance. In other words, and taking into consideration Gagne's (2009) definition of giftedness

adopted for this dissertation, these students have the academic potential but have lacked the consistent environmental catalysts to develop their academic content knowledge and abilities to have a successful preparation for the college entrance test.

Differences in the type of education students receive create a situation of social and academic inequity. Students whose results are most affected are those coming from public schools, especially from vocational public schools, where they learn about trades but do not acquire the necessary content knowledge to reach the high academic standards posed by professors throughout different majors in Chilean universities. Students from this group usually fail two or more courses and are behind their peers, especially during their first year of college in which they need to get closer to the knowledge and skills their peers already possess.

Transition to college

Despite the difficulties related to college entrance, researchers and practitioners in university-based programs for gifted students in Chile have shown that less than 5% of gifted students from public schools withdraw from college. On the contrary, students are achieving good academic results and graduating with honors. What makes this persistence possible is not only students' personal efforts and perseverance, but also a strong desire to perform well and finish their college education, as shown in the second study of this dissertation. Gottfried, Cook, Gottfried, and Morris (2005) found that what they called "gifted motivation" was a stable trait in gifted students that not only defined them as gifted individuals, but also was strongly correlated with the achievement of good results on standardized tests and succeeding in different types of college academic tasks.

In the samples of gifted Chilean college students, this motivation translated into a passionate claim about the importance of finishing their majors. This idea can be summarized by a statement made by some gifted college students who participated in the studies: “I will continue in this academic endeavor...until I die.”

Also, even though students lack the necessary content knowledge to succeed in the most academically demanding classes of their first year of college, they do possess complementary cognitive skills such as creativity, critical thinking, and reflectiveness. These abilities were developed in a university-based extracurricular program for the gifted, the Beta program, which acted as an environmental catalyst and offered the students several opportunities through high-level courses to enhance and develop these complementary abilities. The program, however, is not a substitute for the high school curriculum.

Persistence in college

In study III, I was able to shed light about other characteristics of gifted students that had not been investigated in studies I and II, and analyze gifted students’ persistence in college. Students display healthy types of perfectionism, which works in a positive way to help them strive to solve college problems and achieve academic excellence. In addition, the importance students give to faculty-student and peer-to-peer relationships for their college experiences can be defined as a contributing factor to their persistence in college. Peer relationships are hard to establish during early college social experiences; but when gifted students get used to the college environment, a peer can become a positive influence affecting their passage through college and preventing their

withdrawal, as shown in the second study of this dissertation. The contribution of peers is not only to recreation. Peers also can affect the ways students approach their coursework, contributing to the development of meaningful work relationships through study groups, and fostering the development of study habits.

Implications for Research

Further research needs to be conducted to analyze students' complex experiences in higher education at several levels: academic, personal, and interpersonal. Researchers in the field of higher education have proposed models to advance an understanding of undergraduate students' experiences in college, and they have contributed to a general and holistic approach to the persistence phenomenon. A similar approach is needed for the research with gifted college students, through longitudinal studies in which a combination of several variables can be studied in depth at the different stages of acquiring a degree. Because of the cross-sectional nature of the studies in this dissertation, I was able to take "snapshots" of gifted college students in particular situations at specific points in time. However, a broader view is needed to analyze the difficulties, challenges, and successes of this population. Several variables can be analyzed longitudinally, following students as they advance through their majors. Some of these variables include students' course pass rates, graduation rates, academic achievements (e.g. prizes, honors, and participation in research grants), students' subjective experiences during their years in college, and also the complex and detailed relationships among these variables.

Another area for future research is to develop ways to investigate the impact of the high school curriculum on gifted students' achievement on tests and in college. Much has been said about the existing differences between types of schools; however, in Chile, many students from certain public schools achieve excellent results on the college entrance test. A close study of how the intensity of the curriculum differs among schools and how this situation affects gifted students can be a relevant topic, especially to assess how much of the necessary pre-college content knowledge students are acquiring in their high schools.

Implications for Practice

A longitudinal view of gifted college students can foster the creation of population-specific models that are necessary so that institutions can adapt their strategies and avoid a one-size-fits-all approach when providing support for students in higher education. For example, a common approach in Chile is to provide remedial courses for all students who are struggling academically in college. However, a gifted student may not be favored by such courses due to the pace of the lessons. Therefore, providing specific arrangements considering gifted students' characteristics and needs is an important element for college practitioners to consider. Promoting frequent faculty-student interaction through formal (e.g. research grants) and informal (e.g. field trips) activities is also an element to ponder because of the findings of the investigations included in this dissertation. Researchers have shown that frequent classroom and out of classroom interaction with professors has a correlation not only with students' persistence, but also can have a positive influence on their involvement in college-related

activities and their sense of acceptance and comfort (Sidelinger & Booth-Butterfield, 2010). Faculty mentorship is an initiative that can contribute to helping students deal with college difficulties and challenges. Harris, Ho, Markle, and Wessel (2011) investigated a faculty-student mentorship college program for students with special needs in which students and professors met regularly and faculty members helped students to face the complex scenario of the academic experience in college. They found that the one-to-one relationship had a positive influence on students' involvement, sense of belonging, and better understanding of the academic expectations held by educators at the college level.

Another finding of this dissertation was that students struggle not only with content, but also with the complementary academic habits and behaviors necessary to succeed academically in college. Lack of rigor and perseverance, for example, was one of the problems that was mentioned most frequently by students in the studies. Therefore, one of the challenges for practitioners and investigators in Chile is to provide frequent and systematic opportunities for students to experience college academic life. For example, programs of early immersion in college or introduction to college life can be good opportunities for students to get an in-depth experience of the academic intensity of college.

Other opportunities to help gifted students and their college future are advanced placement (AP) and honors programs. The positive effect of these programs has been studied widely in the United States. For Chile, however, it is a very new initiative, but can be an excellent complementary activity for gifted students as they can put into

practice the intellectual skills acquired in programs like BETA, such as creativity and critical thinking.

Early identification of gifted students can be a way of making timely decisions about students' academic futures. Students from vocational schools that were part of the investigations were identified as gifted during 9th grade, when they were already part of a high school academic track. Early identification can help parents in the decision-making process of choosing a high school that is more suitable for students' needs, skills, and aspirations.

Concluding Statement

The depicted profile of gifted college students that emerged from the investigations presented in this dissertation is of one who is able to set feasible personal and academic standards and work consistently to achieve the goals he or she has established. In addition, this student is highly motivated and flexible enough to adapt to the challenges and demands of the college environment. In other words, a gifted college student is one who is able to pave his or her road to college success, build bridges when necessary, and surmount obstacles without being left behind.

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