The Causal Model of the Freshman Year Characteristics, Campus Experiences and Learning Outcomes for College Students

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Abstract

The purpose of this study is to examine the causal model involving college students’ family background, freshman year characteristics, campus experiences, and learning outcomes. The subjects comprised 3,050 students from public universities and 5,723 students from private universities. Data source were based on responses to the 2003 university freshmen and 2005 university junior student questionnaires obtained from the Taiwan Integrated Postsecondary Education Database (TIPED). The results of the study indicated that the research model possessed a good fit and all the direct influential effects in the model reached a level of significance.

Keywords: campus experiences, college students, freshman year characteristics, learning outcomes

1. Introduction

The questions of whether the function and objective of university education can be effectively accomplished, and whether schoolwork and extracurricular learning experiences can promote change or development for students must be investigated according to their learning outcomes. The first year of university is a critical learning period that affects college students. Factors such as students’ expectations and experiences of entering university affect their university campus experiences and learning outcomes in the future. In recent years, many studies have shown that university students are not sufficiently engaged in their learning. Astin (1998) found from an annual freshmen survey conducted between 1966 and 1996 that the number of hours students spent learning per week has gradually declined from the original 6 hours, the number of students who ask professors questions in their spare time has also decreased, and teachers have become more lenient when issuing grades. Up craft, Gardner and Barefoot (2005) found in a study related to university freshmen that students’ frequency of participation in class discussions, time spent engaged in learning, and practical experiences were less than expected by the students when first enrolled. Therefore, it is crucial to understand how domestic university students’ freshman year characteristics and campus
experiences affect their development and learning outcomes. The results of this study can serve as a reference for educators developing related policies and planning counselling programs.

2. Literature Review

2.1. Adaptation Characteristics of University Freshmen

The “freshmen transition” is a transformational process experienced by individuals during the critical period of university entry. Many scholars have speculated on the definition of successful university freshmen adaptation. From a broader perspective, Upcraft and Gardner (1989) indicated that successful adaptation for university freshmen involves more than merely obtaining course credits. Students must also have achieve positive developments in various orientations, such as intelligence and academic abilities, establishing and maintaining relationships, cultivating self-identity, determining one’s career direction, maintaining physical and mental health, and establishing a life philosophy. Upcraft, Gardner and Barefoot (2005) also included the development of multicultural awareness and civic responsibility as an indicator of successful student adaptation. Stress and Volkwein (2004) believed that student commitment comprised orientations such as the students’ overall impression of the school, satisfaction level, sense of belonging, perceived education quality, and school adaptation. Therefore, successful adaptation for university freshmen primarily means that the learning process and adaptation experiences should allow freshmen to achieve positive developments in academic, interpersonal, and personal orientations; to continue with studying; and to transform their commitments into actions and results.

2.2. College Impact Theory

Astin proposed the input-environment-outcome (I-E-O) model. In this model, input refers to students’ personal characteristics, family background, grades prior to enrolment, and interpersonal experiences; environment refers to the personnel, programs, policies, culture, and experiences encountered by the students after university enrolment; and outcome refers to students’ personality traits, knowledge, skills, attitudes, values, beliefs, and behaviours. Among these, input factors may have a direct or indirect influence on students’ learning outcomes (Astin, 1985). The model of college impact constructed by Terenzini, Pascarella and Biliming (1996) used student achievements as an indicator of learning outcomes to investigate the effects that intra-curricular and extracurricular experiences have on learning outcomes within the school context. The model contends that students’ pre-enrolment experiences have a direct impact on their intra-curricular and extracurricular experiences and their learning outcomes within the school context, and that their intra-curricular and extracurricular experiences were intervening variables between their pre-enrolment experiences and learning outcomes. These theories and models have become the foundation concepts of numerous studies related to campus experience and learning outcomes. We referenced this theoretical model to establish a research framework for exploring how students’ family background and campus experiences affect their learning outcomes.

2.3. Implications of Learning Outcomes

The American College Personnel Association (ACPA) and National Association of Student Personnel Administrators (NASPA) of the U.S. (2004) have summarized student learning outcomes into the following seven major categories: cognitive complexity, knowledge acquisition, integration and application, humanization/humanity, civic responsibility, interpersonal relationships and self-understanding ability, and continued schooling and academic achievements. The scope of these seven learning and development outcomes includes multiple abilities for cognition, self-perception, and interpersonal relationships. Furthermore, they defined learning as integrated academic learning and the development of additional capacities. This indicates that learning integrates cognitive and non-cognitive development processes. Therefore, learning outcomes refer to the sum of the cognitive and non-cognitive learning achievements and capacities that students have obtained through university education. In this study, learning outcomes included students’ academic performances and their multifarious ability development in different orientations.
Based on these literature analysis results, we constructed the study framework, which comprised 4 latent variables and 21 observed variables. Among them, family background had a direct impact on freshman year characteristics, campus experiences, academic achievement, and multifarious abilities; freshman year characteristics had a direct impact on campus experiences, academic achievement, and multifarious abilities; and campus experiences had a direct impact on academic achievement and multifarious abilities.

![Concept Model of Learning Outcomes for College Students](image)

3. Method

3.1. Study Participants

The participants and data source samples used for this study were based on responses to the 2003 university freshmen and 2005 university junior student questionnaires of public and private university students obtained from the Taiwan Integrated Postsecondary Education Database established by the Centre for Teaching and Learning Development, National Taiwan Normal University. The samples comprised 8,773 individual pieces of data, and we recruited 3,050 participants from public universities and 5,723 participants from private universities.

3.2. Measures

The measures used for this study were the 2003 university freshmen and 2005 university junior student questionnaires obtained from Taiwan’s higher education database. The content of the study was divided into four major parts. The first part was the family background-related variables, which comprised “father’s education level,” “mother’s education level,” “father’s occupation,” and “annual income.” The second part was the enrolment...
characteristic-related variables, which comprised “regarded seriously/marginalized,” “educational expectation,” “self-efficiency,” “goal development,” “interpersonal relationships,” “self-identity,” and “emotional management.” The third part was the campus experience-related variables, which comprised “learning attitude,” “reading experiences,” “breadth of thinking,” “teacher-student interaction,” “peer relationships,” and “club participation.” The fourth part was the learning outcome-related variables, which comprised “academic achievement,” “communication skills,” English skills,” and “mathematical information skills.”

3.3. Data Analysis Method

We used the structural equation modelling (SEM) statistical method to verify the assumption model and the goodness-of-fit of the observed data, as well as the effect between each variable. The overall fit test indicators included the absolute fit measure and the incremental fit measure.

4. Results

4.1. Overall Fit Test of the Model

The overall fit indicators for the model employed in this study were intended to test the absolute fit and the relative fit measures. After correction, the model’s overall goodness-of-fit test results all reached the ideal standard; that is, GFI = .97, AGFI = .95, RMSEA = .04, NFI = .90, NNFI = .89, CFI = .91, IFI = .91, RFI = .88, PNFI = .75, and PGFI = .73.

4.2. Analysis of the Model Effects

Table 1 indicates that the overall effect that the students’ family background had on their enrolment characteristics, campus experiences, academic achievement, and multifarious abilities was 7%, 16%, 1%, and 21%, respectively. The overall effect that the students’ enrolment characteristics had on their campus experiences, academic achievement, and multifarious abilities was 52%, 12%, and 48%, respectively. Campus experience had an overall effect of 45% on academic achievement. Overall, enrolment characteristics had a comparatively greater effect on campus experiences and multifarious abilities; and campus experiences had a comparatively greater effect on multifarious abilities.

|                | effect | Family background | First year characters | Campus experiences |
|----------------|--------|-------------------|----------------------|--------------------|
| First year characters | Direct 0.07 |                 |                      |                    |
|                 | Indirect 0.07 |         |                      |                    |
|                 | Whole 0.07 |                |                      |                    |
| Campus experiences | Direct 0.12 | 0.52             |                      |                    |
|                 | Indirect 0.04 |        |                      |                    |
|                 | Whole 0.16 | 0.52             |                      |                    |
| Academic performance | Direct -0.03 | 0.08            | 0.07                 |
|                 | Indirect 0.04 | 0.04           |                      |                    |
|                 | Whole 0.01 | 0.12             | 0.07                 |
| Multiple competences | Direct 0.12 | 0.25             | 0.45                 |
|                 | Indirect 0.09 | 0.23           |                      |                    |
|                 | Whole 0.21 | 0.48             | 0.45                 |
5. Discussion

5.1. The Effect of Family Background on Enrollment Characteristics, Campus Experiences, and Learning Outcomes

The results of this study indicate that the family backgrounds of university students had a direct influential effect on their enrolment characteristics. Parents’ education levels and higher annual incomes had a positive influence on university students’ educational expectations, self-efficiency, sense of mattering, goal development, interpersonal relationships, emotional management, and self-identity. This result echoed that of previous studies (Pascarella & Terenzini, 1991; Kuh, Gonyea, & Williams, 2005; Stage & Hossler, 2000); however, the influential effects were limited. This is consistent with the findings of Kuh et al. (2005), that is, university student’s personal background factors had less influence on their freshman experiences and outcomes. In addition, Table 1 shows that the family background of university students had a direct influence on their campus experiences. We inferred that the parents’ educational level, fathers with better occupations, and higher annual household incomes had a direct positive impact on university students’ subsequent learning attitudes, student-teacher interactions, peer interactions, club participations, breadth of thinking, and reading experiences. Previous studies have reported similar findings (Astin, 1985, 1993; Pascarella, 1985; Terenzini, Pascarella, & Bilimng, 1996).

According to the findings, parents’ education level, fathers’ occupation, and annual household income have a direct positive impact on the multifarious abilities of university students. We inferred that university students with parents who have a higher level of education and greater economic capacity would exhibit superior multifarious abilities in the future. This result echoed that of a previous study (Braxton, Sullivan, & Johnson, 1997).

5.2. The Effect of Enrollment Characteristics on Campus Experiences and Learning Outcomes

Table 1 shows that the enrollment characteristics of university students had a direct influence on their campus experiences. We inferred that characteristics such as educational expectation, self-efficiency, sense of importance, goal development, interpersonal relationships, emotional management, and self-identity had a direct positive influence on university students’ subsequent learning attitudes, teacher-student interaction, peer interaction, club participation, breadth of thinking, and reading experiences. This result echoed that of previous studies (Upcraft & Gardner, 1989; Upcraft et al., 2005). In addition, the results of this study indicate that the university students’ enrollment characteristics had a direct influence on their learning outcomes. We inferred that the conditions of university students, such as educational expectations, self-efficiency, sense of importance, goal development, interpersonal relationships, emotional management, and self-identity, had a direct positive impact on their multifarious abilities and academic achievements. However, the effect on academic achievements was comparatively lower.

5.3. The Effect of Campus Experiences on Learning Outcomes

The results of this study indicate that the campus experiences of university students have a direct effect on their learning outcomes. We infer that the learning attitudes, teacher-student interactions, peer interactions, club involvements, breadth of thinking, and reading experiences of university students have a direct and positive influence on their learning outcomes and multifarious abilities. Therefore, campus experience is a critical factor of learning outcomes. This result echoes that of previous studies (Astin, 1993; Kuh, Gonyea, & Palmer, 2001; Kuh & Vesper, 2001; Pascarella & Terenzini, 1991, 2005; Terenzini et al., 1996). Therefore, the campus experience of university students is a critical factor that affects their development of multifarious abilities. The better the students’ campus experiences, the more their multifarious abilities would develop in the future.
6. Conclusion

Based on the study results discussed previously, university students must strengthen their club participation, teacher-student interaction, breadth of thinking, and development of multifarious abilities during their campus experience. University students’ family backgrounds, freshman year characteristics, campus experiences, and learning outcomes were positively correlated; whereas their annual household income, learning attitudes, and learning outcomes were negatively correlated. In addition, the research model possessed a good fit. All the direct influential effects in the model reached a level of significance. Explanatory power for the variance in freshmen enrollment characteristics reached 1%, explanatory power for the variance in campus experience reached 29%, explanatory power for variance in the academic achievements of junior students reached 52%, and explanatory power for variance in the multifarious abilities of junior students reached 52%. Family background had a significant and direct impact on freshmen enrollment characteristics, campus experiences, and learning outcomes. Freshmen enrollment characteristics had a significant and direct impact on campus experiences and learning outcomes. Campus experiences had a significant and direct impact on learning outcomes. Family background had a significant and indirect impact on learning outcomes through campus experiences and academic achievements. Therefore, it is crucial to understand freshman characteristics, plan freshman-oriented counseling, and assist students in adapting and enriching university students’ campus engagement experiences and promote the enhancement of students’ learning outcomes.

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