

Article

An Empirical Study on the Learning Experiences and Outcomes of College Student Club Committee Members Using a Linear Hierarchical Regression Model

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Abstract: This study explored college students' learning experiences and outcomes as club committee members. Using a linear regression model, it investigated the relevance of personal background variables and club learning experiences to club learning outcomes. This study selected 15 universities and colleges' student club committee members in Taiwan. A total of 1850 questionnaires were distributed, and 1761 valid questionnaires were recovered, with a recovery rate of over 95%. The study findings are as follows: Regarding learning experiences and learning outcomes, the student club committee members was good. According to this study's linear regression analysis: The personal background of student club committee members and their club learning experience had significant explanatory power on the learning outcomes, with R^2 values ranging from 39.6% to 61.1% for each dimension. This indicates that learning from club activities can be an essential pathway to cultivating students' learning outcomes and a valuable reference for promoting club education in colleges and universities in Taiwan. Higher education practitioners should plan activities or programs for student club leaders with learning outcomes in mind, and design learning programs to meet the needs of student club leaders in each school so that students can achieve higher quality learning outcomes. In addition, this study also found that the assessment indicators of learning outcomes of the CAS of the U.S. can be applied to check the learning outcomes of student clubs in higher education in Taiwan.

Keywords: club committee member; club learning experience; club learning outcomes



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1. Introduction

Universities are a place of learning, and their learning process and presentation of learning outcomes are typically highly valued by all sectors of society. On-campus learning processes can be divided into two pathways: in-class learning and extracurricular learning. In-class learning emphasizes the development of professional knowledge and skills. Extracurricular learning focuses on cultivating emotions and attitudes. Therefore, in-class and extracurricular learning outcomes should be explored and assessed to provide a comprehensive picture of students' learning outcomes. Yang cited a 2008 study by the European Centre for the Development of Vocational Training (CEDEFOP) that competence is often used to describe learning outcomes in many countries. Further, the degree of competence can be regarded as a demonstration of learning outcomes [1]. Previous studies have also shown that learning outcomes refer to the changes in students' knowledge, skills, and behaviors after a period of learning [2–6].

Students study on campus primarily to develop their competence for survival in society. Therefore, it has been of great interest to researchers to explore what college students learn on campus, particularly regarding their learning experiences and outcomes in extracurricular areas. The importance of extracurricular study or participation in extracurricular activities has been stressed in many Taiwanese and international studies. In the past,

some scholars argued that classes primarily focus on imparting professional knowledge, while the integrated development of students must be complemented by extracurricular learning [7,8]. Tsai consolidated the domestic and international literature while suggesting for the first time that the outcomes derived from extracurricular learning include nine core competencies: communication and expression skills; lifelong learning capacity; teamwork ability; innovation and creativity capability; problem-solving competence; positive attitude; interpersonal skills; critical thinking; and international perspective [9]. Many Taiwan studies on learning outcomes have validated these nine competencies [10–12]. Similar studies have been conducted overseas, and it has been suggested that extracurricular activities can enhance students' confidence in their abilities and thus encourage in-depth learning [13]. Furthermore, students can also explore their superficial interests and talents through learning programs of extracurricular activities [14]. In addition, the Council for the Advancement of Standards in Higher Education (CAS) was established in 1979 to promote and enhance student learning, development, and achievement. To provide standards and guidelines for planning campus activities to create attractive and quality campus programs (the Role of Campus Activities) for learning and development, the CAS has proposed 12 standards for implementing campus activities and assessed learning outcomes from six perspectives: the acquisition, construction, integration and application of knowledge, cognitive complexity, intrinsic self-development, interpersonal competence, humanitarianism and civic participation, and practical ability [15]. CAS assesses learning outcomes in the six areas related to extracurricular learning outcomes and probes into their impact on students' non-cognitive and affective levels. As such, based on the learning outcomes explored in the above literature, this study will use the CAS's assessment indicators to explore the learning outcomes.

Chen suggested that students' participation in campus club activities is an extracurricular learning experience, an important channel for developing competencies, and an essential outcome of college learning [12]. Some literatures also suggested that extracurricular activities are educationally purposive other than professional curriculum and promote peer bonding, and noted that participation in extracurricular activities contributes to developing higher-order thinking, communication, and interpersonal skills [16–18]. Zhang also showed in a study on middle school students in China that when students are willing to participate in extracurricular science activities, their interest in learning and self-concept has a direct or indirect effect on learning outcomes [19]. Although many scholars agree on the importance of club participation, there needs to be more comprehensive research regarding the learning experiences of student clubs, making it difficult for practitioners to apply a solid theoretical foundation. In Taiwan, however, most of the studies on clubs focused on individuals' motivations for participation, interpersonal relationships, and club management and management, and no effective learning experience can be developed. Chien extracted a summary of learning experiences based on expert interviews and expert opinions, including five themes: organizational operation experience, activity organization experience, club involvement experience, experience in training courses, and experience in attending activities. He collated, summarized and interpreted the five themes to compile the indicators and the connotation of the indicators for the learning experience of club committee members and form a scale through interviews with experts and the Delphi technique. As the scale is of great practical value, this study will use it to explore the learning experience of student club committee members [20].

In a club, the committee members are always the core of the club's operation, and through departmental assignments, each leader assumes the responsibility to carry out various tasks. As a result, club committee members tend to have a more fruitful learning experience than average members. The leadership and core competencies related to club committee members' work inevitably influence the club's development [21]. Research also confirms that club leaders learn more than committee members, and committee members learn more than general members [22]. Therefore, this study will focus on college

student club committee members and explore the relevance of their extracurricular learning experiences to learning outcomes. The proposed objectives of this study are as follows:

- To understand the overview of the learning experiences and outcomes of college student club committee members.
- To explore the relevance of personal background variables and learning experiences to the learning outcomes of college student club committee members.

2. Materials and Methods

This study screened 155 universities and colleges in Taiwan through stratified sampling. We selected 15 schools, five from each region: north, central, and south. A total of 1850 questionnaires were distributed to the schools chosen based on their club numbers: 100 questionnaires to those with less than 100 clubs and 150 to those with more than 100 clubs. After excluding the questionnaires with missing answers, 1761 valid questionnaires were recovered, with a recovery rate of over 95%.

This study was conducted using a questionnaire methodology. The questionnaire consisted of three parts: personal information, club learning experience [1], and club learning outcomes [14]. Each scale was measured using a Likert Scale, and the data were analyzed as follows:

- Club learning outcomes; This is the dependent variable of this study, which is the data regarding knowledge integration and application, cognitive integration and critical thinking, intrinsic self-development, interpersonal interaction skills, social care, civic literacy, and practical skills totaled 32 questions.
- Club learning experience; This is the independent variable of this study, which is the data regarding organizational operation experience, activity organization experience, club involvement experience, experience attending training courses, and experience in participating in activities totaled 29 questions.
- Personal background variables; This is the independent variable of this study, which is the data regarding gender, school attribute, education system, department studied in, grade, club attribute, number of club committee members, years of experience as a committee member, duties as a committee member, pre-college club experience, average time spent in the club per week, and duties in activities totaled 12 questions.

After conducting factor analysis, the KMO values for the club learning experience and club learning outcomes were 0.932 and 0.963, respectively. Bartlett's test value was significant, indicating that factor analysis was feasible. In this study, Questions 1, 2, and 8 for the learning experience and Question 29 for learning outcomes were deleted based on the criteria of factor loading less than 0.50 and misconfiguration due to unclear subordination. After the deletion, five dimensions of learning experience were extracted: organizational operation experience, activity organization experience, club involvement experience, experience attending training courses, and experience participating in activities. The cumulative explanatory variance was 70.13%, and Cronbach's α coefficients were 0.95, 0.92, 0.91, 0.87, and 0.77, respectively, with an overall high reliability of 0.96. This indicates good internal consistency and stability of the questions concerning learning experience, as shown in Table 1. The scale met all the criteria after deletion, which suggests that the scale has good construct validity. The learning outcomes include six dimensions: knowledge integration and application; cognitive integration and critical thinking; intrinsic self-development; interpersonal interaction skills; social care and civic literacy; and practical skills. The cumulative explanatory variance was 73.92%, and Cronbach's α coefficients were 0.95, 0.92, 0.92, 0.93, 0.87, and 0.90, respectively, with an overall high reliability of 0.97. This indicates good internal consistency and stability of the questions regarding learning outcomes, as shown in Table 2

Table 1. Factor Analysis Summary of Learning Experiences in College Clubs.

	Factors				
	Organizational Operation Experience	Club Involvement Experience	Experience Attending Training Courses	Activity Organization Experience	Experience Participating in Activities
explanatory variance (%)	21.78	15.74	13.36	11.90	7.35
cumulative explanatory variance (%)	21.78	37.52	50.88	62.78	70.13
Cronbach's α coefficients	0.95	0.92	0.91	0.87	0.77
Cronbach's α	0.96				

Table 2. Factor Analysis Summary of Learning Outcomes in College Clubs.

	Factors					
	Intrinsic Self-Development	Interpersonal Interaction Skills	Social Care and Civic Literacy	Knowledge Integration and Application	Cognitive Integration and Critical Thinking	Practical Skills
explanatory variance (%)	18.58	15.29	12.62	10.61	8.58	8.24
cumulative explanatory variance (%)	18.58	33.87	46.49	57.10	65.68	73.92
Cronbach's α coefficients	0.95	0.92	0.92	0.93	0.87	0.90
Cronbach's α	0.97					

In this study, the Club Learning Experience Questionnaire and the Club Learning Outcome Scale were used as the data collection tools. After the formal recovery of the questionnaires, the valid questionnaires were coded, collated, and recorded. The data obtained were analyzed using SPSS statistical software 18.0 and included reliability and validity analysis, descriptive statistics, Pearson correlation analysis, and multiple regression analysis.

3. Results and Discussion

3.1. Analysis of Personal Background Variables

The background information of the student club committee members interviewed in this study was analyzed in two parts.

1. Gender, school attributes, education system, department studied in, and grade level.

Regarding gender, male respondents accounted for a slightly larger proportion at 51.1% (899). Most respondents were from private schools, accounting for 54.9% (966). Regarding the educational system, the respondents primarily studied at general universities, accounting for 62.0% (1092). Student distribution, according to the department studied in, showed that most respondents attended polytechnics 26.1% (459), followed by business, management, and law 22.7% (399). Regarding grade level, most committee member participants were sophomores, accounting for 54.7% (963). Detailed data are shown in Table 3.

Table 3. Summary of Personal Background Information (1).

Variables	Category	Amount	Percentage (%)
Gender	male	899	51.1
	Female	862	48.9
school attribute	public	795	45.1
	private	966	54.9
education system	General universities	1092	62.0
	Technical universities	669	38.0
Department	polytechnics	459	26.1
	Business, Management, and Law	399	22.7
	Education	25	1.4
	Arts and Humanities	170	9.7
	Agricultural	156	8.9
	Medicine and Pharmacy	197	11.2
	Social Sciences	82	4.7
	others	273	15.5
Grade	Freshman	224	12.7
	sophomore	963	54.7
	junior	365	20.7
	senior	188	10.7
	University fifth grade and above	21	1.2

2. Club attribute, number of club committee members, length of time in the club, current position, pre-college club experience, average time spent in the club per week, and position experience in activities.

Most respondents were members of self-governing clubs, accounting for 23.4% (412). The data also showed that most clubs to which the respondents belong had 11 or more committee members, accounting for 46.3% (815), almost half of the respondents. The survey results show that over 80% of the respondents were club members for less than two years, most of whom have been involved for more than one year and less than two years, accounting for 43.8% (772). Most of the respondents were club leaders, accounting for 33.3% (587). Most of the club committee members had club experience prior to joining the club, accounting for 72.7% (1281). Most of the club committee members spent less than 10 h per week, with 33.3% (586) spending more than six hours and less than 10 h in the club. Detailed data are shown in Table 4.

3.2. Analysis of the Research Subject’s Current Situation

The following dimensions are analyzed to understand student club committee members’ perceptions of the club learning experience and outcome variables.

1. Club learning experience

Regarding learning experience, this study’s research data on the various factors affecting the learning experience of student club committee members indicate that: “Organizational operation experience” (M = 4.98), “activity organization experience” (M = 4.91), “club involvement experience” (M = 5.09), “experience in attending training courses” (M = 4.91), “experience in participating in activities” (4.62). The perceptions of committee members in terms of learning experience were good, with “club involvement experience” being the best, followed by “organizational operation experience”, “activity organization experience”, and “experience in attending training courses”. In contrast, the perception of “experience in participating in activities” was low. Further exploration showed that the respondents generally believed they could learn relevant skills and knowledge by participating in clubs, and club-related issues, such as activity organization and labor division, due to their experience as committee members.

Table 4. Summary of Personal Background Information (2).

Variables	Category	Amount	Percentage (%)
club attribute	self-governing clubs	412	23.4
	Service clubs	311	17.7
	academic and arts clubs	341	19.4
	recreational clubs	302	17.1
	sports clubs	153	8.7
	alumnus clubs	169	9.6
	Others	73	4.1
number of club committee members	Less than 5 people	265	15.0
	6–10 people	681	38.7
	More than 11 people	815	46.3
years of experience as a committee member	less than 1 year	737	41.9
	More than 1 year and less than 2 years	772	43.8
	More than 2 years and less than 3 years	194	11.0
	over 3 years	58	3.3
duties as a committee member	President	587	33.3
	vice president	219	12.4
	Advisor / Secretary	178	10.1
	Finance and Equipment Manager	127	7.2
	activity manager	130	7.4
	teaching manager	47	2.7
	information manager	41	2.3
	other	432	24.5
pre-college club experience	yes	1281	72.7
	No	480	27.3
average time spent in the club per week	less than 6 h	503	28.6
	6 h–less than 10 h	586	33.3
	10 h–less than 15 h	243	13.8
	15 h–less than 20 h	106	6.0
	more than 20 h	323	18.3

2. Club learning outcomes

Regarding learning experience, this study’s research data on the various factors affecting learning outcomes of student club committee members indicate that: “Knowledge integration and application” (M = 5.18), “intrinsic self-development” (M = 5.16), “interpersonal interaction skills” (M = 5.12), “cognitive integration and critical thinking” (M = 5.23), “social care and civic literacy” (4.47), and “practical skills” (M = 5.03). According to the above results, the perceptions of student club leaders regarding learning outcomes were good, with “cognitive integration and critical thinking” being the best, followed by “knowledge integration and application”, “intrinsic self-development”, “interpersonal interaction skills”, and “practical skills”. In contrast, “social care and civic literacy” was low. An in-depth study showed that the respondents generally believed that the most rewarding aspect of their learning in clubs was that they could apply the knowledge and skills they have learned in clubs in their daily lives, think from the other’s perspective, and gain the ability to promote interpersonal interaction. However, the data from the respondents also indicated that the ability to gain an international perspective was less likely to be acquired in clubs. The reason is that many university and college club activities in Taiwan are primarily based in the domestic field, where members are less likely to be in contact with people from outside the country. Such findings echo those of Literature [13].

3.3. Relevance of the Club Learning Experience to the Club Respondents’ Learning Outcomes

This study used multiple regression analysis to understand the relevance of personal background variables to the learning experience of student club committee members. We

examined the relevance of personal background variables to the five factors of learning experiences.

1. Relevance of different personal background variables to the learning experience

Our findings indicate that the respondents' background variables were significantly related to the club learning experience, particularly regarding the five factors of club learning experience. The explanatory power was 26.7% for "organizational operation experience", 13.4% for "activity organization experience", 16.3% for "experience in attending training courses", and 9.6% for "experience in participating in activities". We further analyzed which of the personal background variables were significantly associated with the various factors of the club learning experience and found that:

- The personal background variables of "school attribute", "department studied in", "grade", "years of experience", "club position", and "average time spent in the club per week" were significantly associated with the "organizational operation experience".
- The personal background variables of "school attribute", "grade", "club position", and "average time spent in the club per week" were significantly associated with the "activity organization experience".
- The personal background variables of "school attribute" and "department studied in" were significantly associated with the "club involvement experience".
- The personal background variables of "school attribute", "years of experience", "club position", and "average time spent in the club per week" were significantly associated with the "experience in attending training courses".
- The personal background variables of "gender", "school attribute", "years of experience", "club position", and "average time spent in the club per week" were significantly associated with the "experience in participating in activities".

Overall, club learning experiences were primarily influenced by "average time spent in the club per week", followed by "club position", "years of experience", and "grade". This study's findings suggest that although the personal backgrounds were diversified, with differences in school attributes and education system if students accumulate "years of experience" as a club committee member or even a "club leader" and devote more time to their clubs, they will acquire better learning experiences. Our findings validate the arguments of regarding engagement theory [23–26].

2. Relevance of learning experience to learning outcomes of student club committee members

According to this study's research data, the relevance of "club learning experience" to the respondents' "club learning outcomes" was significant. The r value of "organizational operation experience" to "club learning outcomes" ranged from 0.376 to 0.634. The r value of "Activity organization experience" to "club learning outcomes" ranged from 0.527 to 0.624. The r value of "Club involvement experience" to "club learning outcomes" ranged from 0.477 to 0.731. The r value of "Experience attending training courses" to "club learning outcomes" ranged from 0.480 to 0.602. The r value of "Experience participating in activities" to "club learning outcomes" ranged from 0.390 to 0.471. Detailed data are shown in Table 5.

After investigating the relevance intensity of respondents' club learning experiences and club learning outcomes, the following results are presented based on the magnitude and corresponding significance of the correlation coefficients suggested by Chiou [27]:

- The "organizational operation experience" was of low relevance to the club learning outcomes.
- The "activity organization experience" was moderately relevant to the club learning outcomes.
- Regarding the relevance of "club involvement experience" to the six factors of club learning outcomes, it was highly relevant to "knowledge integration and application" and "intrinsic self-development" and moderately relevant to "interpersonal interaction skills", "cognitive integration and critical thinking", "social care and civic literacy", and "practical skills".

- The “experience in attending training courses” was moderately relevant to the club learning outcomes.
- Regarding the relevance of “experience in participating in activities” to the six factors of club learning outcomes, it was moderately relevant to “knowledge integration and application”, “intrinsic self-development”, “interpersonal interaction skills”, “social care and civic literacy”, and “practical skills”, and was of low relevance to “cognitive integration and critical thinking”.

Table 5. Relevance of the club learning experience to the club respondents’ learning outcomes.

Club Learning Experiences	Club Learning Outcomes				
	Knowledge Integration and Application	Intrinsic Self-Development	Interpersonal Interaction Skills	Cognitive Integration and Critical Thinking	Social Care and Civic Literacy
organizational operation experience	0.634 *	0.617 *	0.568 *	0.488 *	0.376 *
activity organization experience	0.587 *	0.624 *	0.589 *	0.550 *	0.546 *
club involvement experience	0.709 *	0.731 *	0.658 *	0.595 *	0.477 *
experience attending training courses	0.602 *	0.587 *	0.571 *	0.517 *	0.480 *
experience participating in activities	0.467 *	0.471 *	0.445 *	0.390 *	0.428 *

* Pearson’s r, Significance (two-tailed tests).

Overall, the relevance of learning experiences to learning outcomes was significant ($p = 0.01$). This indicates that higher learning experiences positively affected the demonstration of learning outcomes. Such findings echo those of [28,29].

3. Linear hierarchical regression analysis of the personal background, learning experience, and learning outcomes

This study conducted a hierarchical regression analysis with personal background and learning experience as predictive variables and learning outcomes as criterion variables. This study’s results show that the six factors of personal background variables and learning experience of student club committee members were significant and explanatory in terms of learning outcomes, with “intrinsic self-development” being the highest, followed by “knowledge integration and application”, “interpersonal interaction skills”, “cognitive integration and critical thinking” and “practical skills”. In contrast, “social care and civic literacy” was the lowest.

The major conclusions from the results of the linear hierarchical regression analysis are stated as follows:

- Student club committee members in public schools were positively relevant to “knowledge integration and application”, “intrinsic self-development”, and “interpersonal interaction skills”, and negative for “social care and civic literacy”.
- Student club committee members were positively relevant to “intrinsic self-development”.
- Student club committee members studying at the School of Medicine were positively relevant to “intrinsic self-development”, “interpersonal interaction skills”, and “practical skills”.
- Student club committee members with more “years of experience” were positively relevant to “cognitive integration and critical thinking”.

- Student club committee members who are club leaders were negatively relevant to “knowledge integration and application”, “intrinsic self-development”, and “interpersonal interaction skills”.
- “Gender”, “grade”, “pre-college club experience”, and “average time spent in the club per week” of student club committee members had no significant impact on the self-assessment of their learning outcomes.
- Learning outcomes were most influenced by “club involvement experience”, followed by “activity organization experience”, “experience in attending training courses”, “organizational operation experience”, and “experience in participating in activities”. Learning experiences had a significant and positive impact on learning outcomes.

These findings echo Wang and Hsu’s study, which found that students believe they gain the least from their school experience concerning humanistic literacy [30,31]. The US CAS highlights the importance of humanitarianism and civic engagement by emphasizing the ability to recognize multicultural and international perspectives as an essential learning outcome [13,32–34]. The data showed that personal background of student club committee members in public schools was positively related to “knowledge integration and application”, “intrinsic self-development”, and “interpersonal interaction skills” and negatively related to “social care and civic literacy”. The personal background of student club committee members in general schools was positively related to “intrinsic self-development”. The personal background of student club committee members with more years of experience was positively related to “cognitive integration and critical thinking”. The personal background of the student club leaders was negatively related to “knowledge integration and application”, “intrinsic self-development”, and “interpersonal interaction skills”, likely because their years of experience as leaders were not enough for the self-assessment of their learning outcomes. “Gender”, “grade”, “pre-college club experience”, and “average time spent in the club per week” did not affect the student club committee members’ learning perceptions of learning outcomes. Overall, the learning experience of student club committee members significantly positively impacted learning outcomes.

The regression analyses of personal background, learning experience, and learning outcomes are shown in Table 6.

The significant results of the linear hierarchical regression analysis are presented below: The explanatory power of the personal background variables for the learning outcomes were 10.5–15.4%, after adding the factor of learning experience, the overall model reached significance, with explanatory power of 39.6–61.1%. The explanatory power of the personal background variables for the “knowledge integration and application” ability was 15.4%; after adding the factor of learning experience, the overall model reached significance, with an explanatory power of 59.3%. The explanatory power of the personal background variables for the “intrinsic self-development skills” ability was 14.4%; after adding the factor of learning experience, the overall model reached significance, with an explanatory power of 61.1%. The explanatory power of the personal background variables for the “interpersonal interaction skills” ability was 15.4%; after adding the factor of learning experience, the overall model reached significance, with an explanatory power of 52.2%. The explanatory power of the personal background variables for the “cognitive integration and critical thinking” ability was 10.5%; after adding the factor of learning experience, the overall model reached significance, with an explanatory power of 42.8%. The explanatory power of the personal background variables for the “social care and civic literacy” ability was 11.9%; after adding the factor of learning experience, the overall model reached significance, with an explanatory power of 39.6%. The explanatory power of the personal background variables for the “practical skills” was 15.4%; after adding the factor of learning experience, the overall model reached significance, with an explanatory power of 59.3%.

Table 6. The regression analyses of personal background, learning experience, and learning outcomes.

Variables	Significant Independent Variable (Regression Coefficient)	Explanatory
Organizational operation experience	<ul style="list-style-type: none"> School attribute (public: −0.076) Department (Medicine and Pharmacy: −0.103; Arts and Humanities 0.069) Grade (0.079) Years of experience as a committee member (0.160) Duties as a committee member (President: 0.245) Average time spent in the club per week (0.286) 	26.7%
Activity organization experience	<ul style="list-style-type: none"> School attribute (public: −0.194) Grade (0.062) Duties as a committee member (President: 0.101) Average time spent in the club per week (0.261) 	13.4%
Club involvement experience	<ul style="list-style-type: none"> School attribute (public: −0.127) Department (Arts and Humanities: 0.065) Years of experience as a committee member (0.067) Duties as a committee member (President: 0.203) Average time spent in the club per week (0.313) 	20.6%
Experience attending training courses	<ul style="list-style-type: none"> School attribute (public: −0.220) Years of experience as a committee member (0.074) Duties as a committee member (President: 0.112) Average time spent in the club per week (0.243) 	16.3%
Experience participating in activities	<ul style="list-style-type: none"> Gender (male: 0.058) School attribute (public: −0.079) Years of experience as a committee member (0.092) Duties as a committee member (President: 0.053) Average time spent in the club per week (0.227) 	9.6%
Knowledge integration and application	<ul style="list-style-type: none"> School attribute (public: 0.042) Club attribute (self-governing clubs: 0.089; service clubs: 0.069; academic and arts clubs: 0.108; recreational clubs: 0.083) Duties as a committee member (President: −0.038) Organizational operation experience (0.229) Activity organization experience (0.115) Club involvement experience (0.357) Experience attending training courses (0.172) Experience participating in activities (0.039) 	59.3%
Intrinsic self-development	<ul style="list-style-type: none"> School attribute (public: 0.057) Education system (General universities: 0.046) Department (Medicine and Pharmacy: 0.060) Duties as a committee member (President: −0.054) Organizational operation experience (0.175) Activity organization experience (0.184) Club involvement experience (0.412) Experience attending training courses (0.111) Experience participating in activities (0.048) 	61.1%

Table 6. Cont.

Variables	Significant Independent Variable (Regression Coefficient)	Explanatory
Interpersonal interaction skills	<ul style="list-style-type: none"> • School attribute (public: -0.040) • Department (Medicine and Pharmacy: 0.077) • Duties as a committee member (President: -0.040) • Organizational operation experience (0.161) • Activity organization experience (0.199) • Club involvement experience (0.301) • Experience attending training courses (0.162) • Experience participating in activities (0.052) 	52.2%
Cognitive integration and critical thinking	<ul style="list-style-type: none"> • Years of experience as a committee member (0.061) • Organizational operation experience (0.081) • Activity organization experience (0.228) • Club involvement experience (0.285) • Experience attending training courses (0.143) 	42.8%
Social care and civic literacy	<ul style="list-style-type: none"> • School attribute (public: -0.115) • Number of club committee members (-0.046) • Activity organization experience (0.338) • Club involvement experience (0.091) • Experience attending training courses (0.125) • Experience participating in activities (0.181) 	39.6%
Practical skills	<ul style="list-style-type: none"> • Department (Medicine and Pharmacy: 0.067) • Club attribute (self-governing clubs: 0.083) • Organizational operation experience (0.124) • Activity organization experience (0.190) • Club involvement experience (0.253) • Experience attending training courses (0.124) • Experience participating in activities (0.084) 	40.9%

3.4. Discussion

1. These results echo the engagement theory and the research of many scholars. Like Astin's engagement theory emphasized that students' learning outcomes were related to their own backgrounds [23,24]; Kuh's view of learning engagement suggested that school experiences had a direct impact on learning outcomes [25,26]; And Astain study also argued that students who invested more time and effort in the learning process had higher satisfaction with their self-achievement and learning experiences [23]; the study of Terenzini and Pascarella indicated that the more students participate in school clubs, the higher their cognitive maturity; and school experience was highly correlated with learning outcomes [16]. Liao concluded that individual demographic variables, such as gender, school district, grade level, club affiliation, club experience, participation frequency of club activities, club position, motivation, and social service experience, made a significant difference in learning outcomes [35]. Liu et al. showed that campus experience had a critical impact on learning outcomes [36].
2. The results of the study on the various abilities showed that critical thinking skills were better for those who had been club leaders. These results echo the [16,23,37,38]. Rubin et al. showed that participation in clubs did improve interpersonal skills and that students who were club leaders had better interpersonal skills than those who were only club members [28]; Chang showed that university clubs had a positive effect on students' learning by increasing self-confidence, broadening horizons and developing independent thinking skills, self-understanding and growth in club activities [39].

4. Conclusion and Recommendations

4.1. Conclusions

This study focused on the learning experiences and outcomes of college student club committee members. We applied a linear hierarchical regression model to investigate the relationships among participants' background variables, learning experiences, and learning outcomes. First, the study's results showed that college student club committees member were doing well in learning experience and learning outcomes. Second, the linear regression analysis results showed that the personal background of student club committee members and their club learning experience had a significant explanatory power on the club learning outcomes. This study result indicated an important information that learning from club activities could be essential to cultivating students' learning outcomes, and it can serve as a valuable reference for promoting club education in colleges and universities in Taiwan. In addition, as the questionnaire on club learning outcomes was prepared concerning the indicators developed by the CAS, the findings from this study also indicated that the learning outcome indicators of CAS apply to examining the learning outcomes of student clubs of colleges and universities in Taiwan.

4.2. Recommendations

Based on this study's findings, we recommend that higher education practitioners provide more learning opportunities for student club committee members to accumulate learning experiences. By doing so, student club committee members can devote more time and effort to thinking about the knowledge and skills required for the activities and ethical issues when organizing various activities. This study also showed that student club committee members' self-assessment of their "social care and civic literacy" skills was low. Therefore, we recommended that schools invest more effort in "social care and civic literacy" when providing learning experiences for student club committee members, such as adding global issues, international perspectives, and civic literacy. In addition, We recommend that competent education authorities refer to the indicators developed in this study to explore the relationship between the learning experiences and outcomes of student club committee members in schools when promoting club activities or programs to respond to the learning-centered spirit of students.

5. Limitations and Future Researches

The study's questionnaire designed by Chien [20], and CAS in the United States is used in this study for the scales of community learning experience and community learning outcomes [15]. Although the research results can be used as reference materials for practical work, however these two research questionnaire are first presented in Taiwan, there will be limitations in the research.

Therefore, it is recommended that future researchers should do more invest to verify and improve accuracy in the research. In addition, due to the large number of measurement dimensions in this study, complicated statistical methods were avoided but only linear hierarchical regression was used for data analysis to focus and respond to the purpose of this study. In the future, we will continue to conduct follow-up research on this topic, and will further adopt high-level statistical methods, such as structural equation modeling (SEM) statistical methods to explore the learning behavior patterns of college student associations more clearly.

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References

1. Yang, Y. EU higher education quality assurance policy focusing on student learning outcomes. *Eval. Bimon.* **2011**, *30*, 27–34. [CrossRef]
2. Spady, W.G. *Outcome-Based Education: Critical Issues and Answers*. Virginia: American Association of School Administrators, 1994. Available online: <https://files.eric.ed.gov/fulltext/ED380910.pdf> (accessed on 15 November 2022).
3. Rogers, G. Program outcomes and performance indicators. Available online: <https://www.abet.org/wp-content/uploads/2015/04/program-outcomes-and-performance-indicators.pdf> (accessed on 17 May 2022).
4. Kim, E.; Seo, E.H. The Effect of Educational Experiences on Student Learning Outcomes in General Education. *New Educ. Rev.* **2015**, *39*, 167–176.
5. Liu, R.L.; Yang, C.Y. The Impact Model of Satisfaction for Learning Outcomes on College Students with Different Backgrounds. *J. Natl. HsinChu Univ. Educ.* **2009**, *26*, 1–21.
6. Peng, S.M. *Institutional Research in Higher Education: Concepts and Applications*; Higher Education Press: Taipei, Taiwan, 2019. [CrossRef]
7. Chang, H.M. Intervening or letting go—Problems and counseling countermeasures for college students to participate in extracurricular activities. In Lin, Z.S. (Series Ed.). *Student Affairs and Community Counseling Series: Vol. 4*; Soochow University: Taipei, Taiwan, 2003; pp. 350–366.
8. Hurtado, S.S.; Gonyea, R.M.; Graham, P.A.; Fosnacht, K. The Relationship Between Residential Learning Communities and Student Engagement. *Learn. Communities Res. Pract.* **2019**, *8*, 1–20.
9. Tsai, C.H. The Research on Higher Education Extracurricular Learning Core Competencies and Measuring Indicators. Ph.D. Thesis, National Taiwan Normal University, Taipei, Taiwan, 2012.
10. Yeh, C.C. Research of the Relationship between College Students' Extracurricular Learning Experience and Their Life Adaptation after Graduation—A Case Study of College Alumni. Ph.D. Thesis, National Taiwan Normal University, Taipei, Taiwan, 2014.
11. Hsueh, A. A Study on the Relationship between Extracurricular Learning Experience and Career Maturity Attitude for College Students—Based on the Data from Private Universities in Central Taiwan. Master's Thesis, National Taiwan Normal University, Taipei, Taiwan, 2017.
12. Chen, M.K. College Students' Co-Curricular Learning Outcomes and Influencing Factors Research—From the Strategic Perspective of Institutional Research. Ph.D. Thesis, National Taiwan Normal University, Taipei, Taiwan, 2018.
13. Chan, Y.K. Investigating the relationship among extracurricular activities, learning approach and academic outcomes: A case study. *Act. Learn. High. Educ.* **2016**, *17*, 223–233. [CrossRef]
14. Fatimah, S.; Yuberti; Ayu, S.M. Evaluation of the spiritual extracurricular program in Madrasa. *J. Adv. Islam. Educ. Manag.* **2021**, *1*, 19–34.
15. Wells, J. *Professional Standards for Higher Education*, 9th ed; Council for the Advancement of Standards in Higher Education: Washington, DC, USA, 2015.
16. Terenzini, P.T.; Springer, L.; Pascarella, E.T.; Nora, A. Influences affecting the development of students' critical thinking skills. *Res. High. Educ.* **1995**, *36*, 23–39. [CrossRef]
17. Mikulec, E.; McKinney, I. Perceived learning outcomes from participation in one type of registered student organization: Equestrian sport clubs. *J. Scholarsh. Teach. Learn.* **2014**, *14*, 93–109. [CrossRef]
18. Ko, J.W.; Park, S.; Yu, H.S.; Kim, S.J.; Kim, D.M. The Structural Relationship Between Student Engagement and Learning Outcomes in Korea. *Asia-Pac. Educ. Res.* **2016**, *25*, 147–157.
19. Zhang, D.; Tang, X. The influence of extracurricular activities on middle school students' science learning in China. *Int. J. Sci. Educ.* **2017**, *39*, 1381–1402.
20. Chien, H.N. A Study on the Construction of Learning Experience and Outcome Indicators and Investigation for Higher Education Student Organization Cadres. Ph.D. Thesis, National Taiwan Normal University, Taipei, Taiwan, 2020.
21. Lin, H.M.; Yan, J.C. The study on the developmental strategies for student organizations in Taiwan technological and vocational colleges: Analysis based on student cadres' perspectives. *J. Hungkuang Univ.* **2011**, *64*, 90–110. [CrossRef]
22. Chang, T.M.; Chen, J.S. A Study of Teachers' Attitude Toward Student Organization Activities of Southern Technological Colleges. *J. Hungkuang Univ.* **2007**, *50*, 129–157. [CrossRef]
23. Astin, A.W. Student involvement: A developmental theory for higher education. *J. Coll. Stud. Pers.* **1984**, *40*, 518–529.
24. Astin, A.W. *Assessment for Excellence: The Philosophy and Practice of Assessment and Evaluation in Higher Education*; America Council on Education Macmillan: New York, NY, USA, 1991.
25. Kuh, G.D. What we're learning about student engagement from NSSE. *Change Mag. High. Learn.* **2003**, *35*, 24–32. [CrossRef]
26. Kuh, G.D. The National Survey of Student Engagement: Conceptual and Empirical Foundations. *N. Dir. Inst. Res.* **2009**, *141*, 5–20.
27. Chiou, H.J. *Quantitative Research and Statistical Analysis*; Wu-Nan Culture Enterprise Press: Taipei, Taiwan, 2019. ISBN 9789577633408.

28. Rubin, R.S.; Bommer, W.H.; Baldwin, T.T. Using extracurricular activity as an indicator of interpersonal skill: Prudent evaluation or recurring malpractice. *Hum. Resour. Manag.* **2002**, *41*, 441–454.
29. Pike, G.R.; Kuh, G.D.; McCormick, A.C.; Ethington, C.A.; Smart, J.C. If and when money matters: The relationships among educational expenditures, student engagement and students' learning outcomes. *Res. High. Educ.* **2011**, *52*, 81–106.
30. Wang, J.Y. A Study on Relationship between Learning Motivation and Student Engagement for Graduate Students in Tamkang University. Master's Thesis, Tamkang University, Taipei, Taiwan, 2015.
31. Hsu, Y.C. A Study on Learning Outcomes and Correlation Factors of Student Clubs Course in Tamkang University. Master's Thesis, National Taiwan Normal University, Taipei, Taiwan, 2017.
32. NASPA; ACPA. Learning Reconsidered: A Campus-Wide Focus on the Student. 2004. Available online: https://www.naspa.org/images/uploads/main/Learning_Reconsidered_Report.pdf (accessed on 23 May 2021).
33. Deardorff, D.K. Identification and assessment of intercultural competence as a student outcome of internationalization. *J. Stud. Int. Educ.* **2006**, *10*, 241–266. [[CrossRef](#)]
34. Huang, W.D.; Zhan, B.-J. The Trends of International Research on the Development of Intercultural Competence and Its Implications on Taiwan's Education. *J. Educ. Res.* **2020**, *312*, 98–113. [[CrossRef](#)]
35. Liao, Y.C. A Study of Extracurricular Activity Learning of Tamkang University Students. Master's Thesis, Tamkang University, Taipei, Taiwan, 2007.
36. Liu, R.L.; Tsai, H.C.; Li, Y.C. Campus Experiences, Learning Outcome and Assistant Resources of Economically Underprivileged Students in A Public University. *Stud. Aff. Guid. Couns.* **2016**, *55*, 9–29. [[CrossRef](#)]
37. Chang, H.M. *The Impact of College Education on Students: An Empirical Study of College Students' Campus Experience and Learning Outcomes in my Country*; Teacher Chang Culture Publishing House Press: Taipei Taiwan, 1999; ISBN 957-693-392-7.
38. Skeat, L.C. Cognitive Development in Student Leaders and Non-leaders. Master's Thesis, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA, 2000.
39. Chang, H.M. A Study on College Students' Club-Participating Experiences and Their Effects. *Stud. Aff. Guid. Couns.* **2015**, *53*, 25–45. [[CrossRef](#)]

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