

The Influencing Factors of College Students' intention in selecting Elective Courses

Zhou Ming Yao¹ Busaya Vongchalitkul², Patarada Rungrueng³,
Rapeepat So-in⁴ and Wang-Kun Chen⁵

Southeast Bangkok University, Thailand¹⁻⁵

E-mail: zmyshmily@qq.com¹, busaya2001@gmail.com², Patarada@southeast.ac.th³
rapeepat@southeast.ac.th⁴, khun-chenwang@southeast.ac.th⁵

Abstract

The purpose of this study was to explore 1) study the teacher's experience and ability (External factor) and 2) study students' enthusiasm for participating in the classroom (Internal Factor). The quantitative analysis was used in this study. Four hundred samples were selected from a certain Chinese university. The sample size of this study is based on Taro Yamane formula with 95% confidence level for minimum number of samplings. The research instrument was a questionnaire. The statistics used for data analysis were frequency, percentage, mean, standard deviation, One-way ANOVA and multiple regression analysis. The results of this study showed that 1) ability of teachers had a relatively large impact on students' choice of courses, and efforts should be made to improve the teaching ability of teachers and 2) the enthusiasm of students to participate in the classroom had little influence on students' choice of courses while the experience.

Keywords: Elective Course, Students' Enthusiasm, Teacher's Experience, Teacher's Ability,

Introduction

Public elective courses in colleges and universities are open to students of various majors, and students can independently choose to study them. They are comprehensive general-education-oriented courses with the central core of the humanistic and scientific quality education. Under the impetus of strengthening the quality education of college students and

implementing the idea of general education, the addition of public elective courses as part of the curriculum system has become the imperative goal for most Chinese universities. The purpose of offering the public elective courses in colleges and universities is to broaden, improve, and optimize the quality of students' comprehensive knowledge. Elective courses do much more than fill in the gaps to fulfill high school graduation requirements. These courses give students the opportunity to explore new options. They also allow students to study more about a subject in which they are passionate about. Elective courses provide students with the necessary skills to improve creativity that cannot be taught in a traditional classroom environment. They help students discover new things that can quite possibly change the course of their lives (Malloy, 2019).

According to Chen (2020), there have been studies supporting that the elective courses in school programs ultimately lead to better overall progress in students' core areas of focus. However, in the actual teaching scenarios, the public elective courses fail to raise sufficient attention, and the teaching quality is not satisfactory, due to the lack of understanding of the importance of public elective courses by both teachers and students of the public elective courses. The situation of students not taking the class seriously is one of the most difficult challenges when it comes to improving students' comprehensive quality.

The influencing factors of elective courses were proposed by Milind Padalkar, Sreevas Sahasranamam, and Pradeep Kumar Hota in 2014. In their work, the influencing factors of elective courses were mainly defined as the course content, teaching tools and structure, expected learning, utility, and constraint influence Students' elective choice behavior. (Padalkar, et al., 2014); (Talukdar and Medhi, 2020).

The theory was further elaborated by Kolářová Eva, Kolářová Vendula (2017). According to the analysis of students' employment situation, it shows that students choosing elective courses can acquire the concept of skills from courses, and this concept has been realized. Hands-on working experiences with data and concrete queries are both fun and helpful for students. Students wish to have a lower working pressure, and yet the responsibility is high. Many college courses encourage students to learn new ways of gathering and analyzing information that will enable them to create and identify opportunities, and they also make students accumulate and

leverage resources to exploit opportunities, making its content more complete. (Kolářová, and Kolářová, 2017); (Yuan, et al., 2019)

In 2018, building on the basis of this theory, Gulsah Hancerliogullari Koksalmis introduced the multi-criteria decision-making model for the analysis. The results helped decision makers in ranking and selecting elective courses. It enriched the connotation of the influencing factors of elective courses.

In 2020, Samuel Foli, Isaac K. Baidoo revealed that following a career path, computing and learning new things played a crucial role in a student's choice decision in the Department of Statistics and Actuarial Science regarding the choice of electives. Courses shown to follow a student's career path contribute the most to their elective course selection. In short, the general consensus in this field was that students and teachers were the two important influence factors governing the influence factors of elective courses.

Kolářová and Kolářová (2017) conducted related research on factors affecting college students' elective subjects, but this research only focused on students aiming at taxation and might not represent the situation of students in other majors. Secondly, it only studied one aspect of students and did not study the situation of teachers. Our research was performed in order to make up for the above shortcomings.

In short, the importance of this research was to discuss the problems existing in the implementation process of public elective courses based on the actual scenarios observed in colleges and universities and to propose possible solutions accordingly.

Objectives of Research

1. To study the teacher's experience and ability (External factor)
2. To study students' enthusiasm for participating in the classroom (Internal Factor)

Scope of the study

First, it explored the influencing factors of college students' elective courses. The process of student electing courses was systematic and complicated, as uncertainties might exist. As a social group, college students were the most active ones and had the most frequent contacts with teenagers and middle-aged people. They were colorful, bearing their own unique

characteristics, and they also had different requirements for these special courses. There, the schools needed to adjust teaching activities and content accordingly, so as to better adapt to the elective course needs for college students at different stages.

Second, by reviewing the literature and sorting out relevant materials, it was found that the influencing factors of college students' elective courses were mainly whether teachers and students agreed with the teaching content, methods, and other factors. We therefore conducted research on this and proposed a research framework and assumptions.

Literature Review

Since the research on the influencing factors of intention to select the elective courses was proposed, many people have conducted relevant research thereafter. When exploring the influencing factors of college students' choice of elective courses, it mainly centered around internal factor which were the students' personal interest and attitude towards course content learning and external factor which was the ability and quality of teachers, and so on. The results were also mainly applied in the reform of teaching elective courses in schools to improve its impact on college students.

Teacher's experience and ability (External Factor)

Hanushek (2006) concluded based on a study of teachers' teaching quality that: a teacher's experience had a more positive correlation with student achievement, but the overall significance was still not so obvious. While most studies found positive effects, only a few of all the estimates provided statistically significant results. A higher student achievement led to more experienced teachers or vice versa.

Cakir (2013) concluded through a study on the attitudes of teachers' elective courses that: the attitudes of teachers and students were related to each other. Only when teachers and students worked together to create a warm and professional classroom could a successful lecture be delivered.

According to the above literatures, teachers played a very important role in elective courses, and teachers also played a leading role in them.

The enthusiasm of students to participate in the classroom (Internal Factor)

The study of Duncan (1991) showed that, in general, the pattern of results reported here suggested that classroom autonomy was more closely related to motivation in college classrooms. Although the direct experience of autonomy may not directly contribute to high course achievement, autonomy seemed to moderately foster intrinsic goal-directed task value and self-efficacy.

Turner and Patrick (2004) concluded that participation was an efficient work habit through their research, and participation in courses was conducive to learning. Students could participate openly in a variety of ways, including spontaneously presenting ideas and ideas, volunteering to answer questions, answering questions as required, presenting on the board, discussing assignments with classmates or teachers, and completing written assignments. Students could also engage by watching, listening, and thinking without these behavioral indicators of engagement.

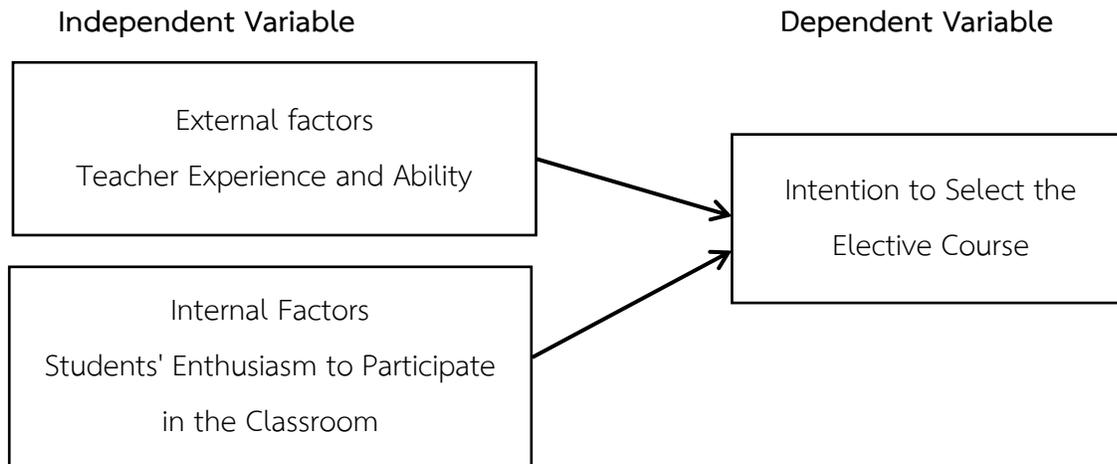
According to the above literatures, it was beneficial for a smooth and effective progress of implementing the elective courses when students were interested in the course and improved their autonomy in the classroom.

Hypothesis

Hypothesis 1: There was a positive correlation between the teacher's experience and ability and the influence of elective courses.

Hypothesis 2: The enthusiasm of students to participate in the classroom was positively correlated with the influence of elective courses.

Conceptual Framework



Research Methods

Quantitative research method was used in this study. In this survey, a random sampling was carried out in proportion to all students in the school, and sampling surveys were conducted according to different majors. The sample size of this study is based on Taro Yamane formula (Yamane,1793; Lertatthakornkit and Intravisit, 2022) with 95% confidence level for minimum number of sampling (0.05 margin of error), more than 16,000 students according to 2022 student population, the sample is 400 students.

A total of 400 questionnaires were distributed, and 400 questionnaires were recovered, of which 400 were valid questionnaires, and the total effective recovery rate was 100%. The teachers and college students were interviewed through questionnaires to understand their willingness to choose elective courses and explore the influencing factors that might exist in the course selection. The design of the questionnaire was mainly through the investigation of students to understand the difference between teacher-led and student-led, and the content of the questionnaire had its own emphasis. The questionnaire focused on investigating the understanding and feelings of elective courses, the attitude towards the current elective courses, and the learning evaluation of elective courses through personal basic information, behavior, internal factors (students' enthusiasm for participating in the classroom), and external factors (teacher's experience and ability). The questionnaires were published online through "Questionnaire Star", and the questionnaire links were sent to students according to different majors and grades through counselors, so as to ensure that the survey speed was real and

effective at the same time. Finally, the collected data was statistically analyzed to obtain the results.

Research Results

1. Reliability analysis

Table 1 Reliability Statistics

variable	Cronbach's Alpha	N of Items
Internal factor	.96	7
External factor	.90	7
Intention to select the elective course	.93	3

It can be seen from Table 1 that the variable coefficient is greater than 0.9, indicating that the internal consistency of the questionnaire is very high and toward completely acceptable. The reliability and quality of the research data was also high.

2. Validity Analysis

This research improves the validity of the forecasting questionnaire by consulting a large number of relevant literatures and works under the guidance of relevant experts and adopts the expert judgment method. At the request of the three experts, the names of the interviewed experts were anonymized, and the evaluation results are shown in Table 2.

Table 2 Expert validity test evaluation form

2. Evaluation of the Overall Validity Design of the Questionnaire

Expert number	very suitable	suitable	basically suitable	inappropriate	very inappropriate
1	√				
2	√				
3	√				

3. Sample basic information analysis

We used the Statistics software, to conduct statistical analysis on the basic information of the samples, and the results are shown in Table 3, Table 4, Table 5, and Table 6.

Gender

		Frequency	Percent
Valid	Male	135	33.8
	Female	265	66.3
	Total	400	100.0

4. Category of student

		Frequency	Percent
Valid	Freshman	101	25.3
	Sophomore	144	36.0
	Junior year	75	18.8
	Senior year	80	20.0
	Total	400	100.0

5. Grade point average in elective courses

		Frequency	Percent
Valid	less 60	2	.5
	60-75	39	9.8
	76-90	239	59.8
	90 up	120	30.0
	Total	400	100.0

6. You are major in

		Frequency	Percent
Valid	Computer	40	10.0
	Mathematics	40	10.0

Education	40	10.0
Administration	40	10.0
Physical education	40	10.0
Biology	40	10.0
Chemistry	40	10.0
Art	40	10.0
Music	40	10.0
English	40	10.0
Total	400	100.0

It can be seen from Table 3 that the sample selection is based on the ratio of male and female students in the surveyed colleges and universities. The ratio of the sample to the total number of students is close to 1:2, while the data is reasonable.

As shown in Table 4, the survey objects are distributed in each grade, which can clearly explain the views and requirements of students at different stages on elective courses and ensure the accuracy of the data.

It can be seen from Table 5 that the grades of the elective courses of the surveyed subjects are relatively objective, 59.8% of the grades are maintained at the stage of 76-90, and 30% of the students can reach above 90, which shows that most students attach importance to the grades of elective courses.

It can be seen from Table 6 that in order to ensure the views of students of different majors on elective courses in the whole school, statistical analysis is conducted on students of 10 popular majors to ensure the integrity and authenticity of the sample, which is more representative of the school as a whole level.

Result analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.868 ^a	.754	.753	.41025

a. Predictors: (Constant), sumIN, sumEx

It can be seen from the above table that internal factors (students' enthusiasm for participating in the classroom) and external factors (teacher's experience and ability) are applied as independent variables, and course selection factors are used as dependent variables for linear regression analysis. It can be seen from the above table that the R-square value of the model is up to 0.754, which means that the internal Factors (students' enthusiasm for participating in the classroom) and external factors (teacher's experience and ability) can explain 75.4% of the changes in course selection factors.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	205.010	2	102.505	609.046	.000 ^b
	Residual	66.817	397	.168		
	Total	271.826	399			

a. Dependent Variable: Intention to select elective course

b. Predictors: (Constant), sumIN, sumEx

It can also be seen from the above table that when the F test is performed, it is found that the model passes the F test (F=609.046, p=0.000<0.05), which means that the model construction is meaningful.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.436	.108		4.052	.000
	sumEx	.649	.044	.610	14.640	.000
	sumIN	.286	.040	.300	7.196	.000

a. Dependent Variable: sumSele

Internal factors (students' enthusiasm for participating in the classroom) and external factors (teachers' experience and ability) are used as independent variables, and course selection factors are used as dependent variables for linear regression analysis. As can be seen from the above table, the model formula is: course selection factors = 0.436 + 0.286 * internal factors (students' enthusiasm for participating in the classroom) + 0.649*external factors (teachers' experience and ability), the R-square value of the model is 0.754, which means that internal factors (students' enthusiasm for participating in the classroom) and external factors (teacher's experience and ability) can explain 75.4% of the changes in course selection factors. When the F test was performed on the model, it was found that the model passed the F test (F=609.046, p=0.000<0.05), which means that at least one of the internal factors (students' enthusiasm for participating in the classroom) and external factors (teacher's experience and ability) will have an impact on the course selection factors. It also shows that there is no autocorrelation in the model, and there is no correlation between the sample data, and the model is better. The final specific analysis shows that: The regression coefficient of internal factors (students' enthusiasm for participating in the classroom) is 0.286 (t=7.196, p=0.000<0.01), which means that internal factors (students) will have a significant positive impact on course selection factors.

The regression coefficient of external factors (teacher's experience and ability) is 0.649 (t=14.640, p=0.000<0.01), which means that external factors (teacher's experience and ability) will have a significant positive impact on course selection factors.

Figure 1.

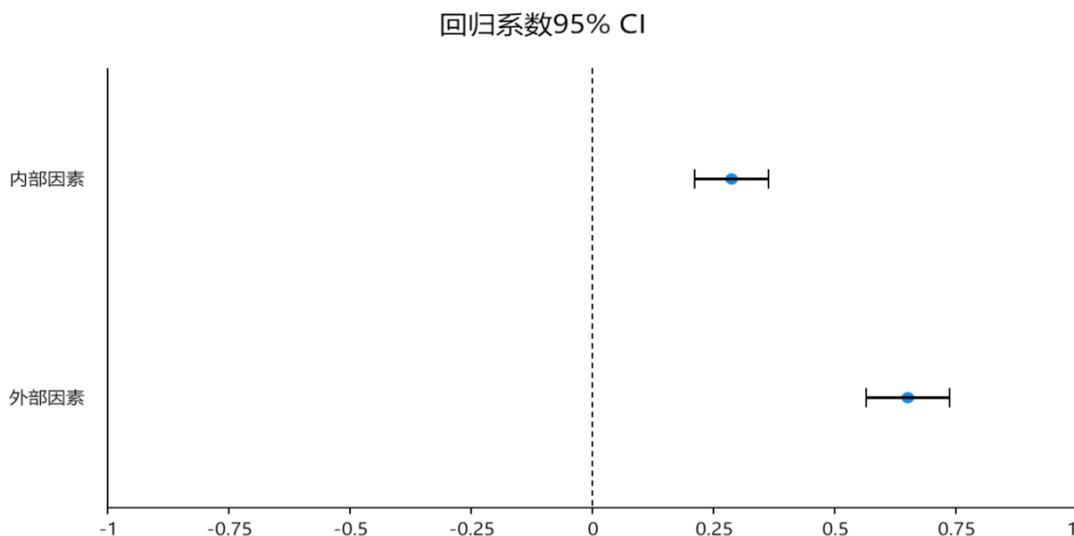


Figure 1. The summary analysis shows that all internal factors (students' enthusiasm for participating in the classroom) and external factors (teacher's experience and ability) will have a significant positive impact on course selection factors.

Conclusion

This paper takes the students of the school's elective courses as the research object, conducts a survey by means of questionnaire survey, and puts forward suggestions for teachers based on the actual situation of the school.

From the figures above, it can be concluded that the regression coefficient (0.649) of the external factor (teacher's experience and ability) was greater than the regression coefficient (0.286) of the internal factor (students' enthusiasm for participating in the classroom). Therefore, teachers' factors had a greater impact on students' choice of courses, while students' personal factors had a positive predictive effect on the choice of elective courses to a certain extent.

1.1 External Factor: Teacher's experience and ability

The teacher's experience and ability was positively correlated with the impact of elective courses, which had a great influence on students' choice of courses. As the teacher's experience and ability were stronger, the number of students choosing this course would increase. This was similar to the study of Babad & Tayeb, 2003; Pass, Mehta, Mehta, 2012 which stated that the student preferences to select the elective course were more on instructor.

1.2 Internal Factor: The enthusiasm of students to participate in the classroom

The enthusiasm of students to participate in the classroom was positively correlated with the impact of elective courses, and its impact on students' choice of courses was relatively small. As students became more interested in this subject and more enthusiastic in participating in the classroom, the number of students choosing this subject would increase. The consistency in this factor's importance was reassuring given Ramsden's (1992), Howorth's (2001) and Hedges, Pacheco, & Webber, D. J. (2014). who argued that intrinsic motivations encourage a student to have a deeper approach to learning and that they would learn more and enjoy learning.

To sum up, college students' intention to elective courses was mainly focused on teacher factors, and the experience and ability of teachers were the main focus of their choice of courses.

Recommendations

1. Introduce high-level teachers

Schools should try to recruit teachers with high-level teaching capability according to the implemented elective courses, to improve the quality of elective courses for students so as to meet the needs of college students and promote the realization of course teaching goals. Teachers with high-level teaching skill would give reasonable guidance to students, improve students' interest and enthusiasm in participating in the classroom, so that students could have a clear learning goal in the process of participating in elective courses. Student could also make reasonable plans according to their own conditions, so as to achieve the adaption of college students' course selection and social needs.

2. Strengthen the training of teachers

Schools should increase the capital investment in teachers according to the teaching requirements of elective courses, encourage teachers to actively improve their comprehensive abilities, and actively organize activities such as participating in seminars, academic exchanges, and arrange specific lectures to improve teachers' teaching ability and comprehensive quality. With that, teachers might meet the needs of the course and achieve the purpose of teaching, so as to promote the professional development of teachers, improve students' old views on courses, and mobilize students' enthusiasm for participating in courses.

3. Establish a student-to-teacher evaluation mechanism

The evaluation system of elective courses should not allow teachers to evaluate students unilaterally while ignoring students' evaluation of teachers. In the process of ensuring the quality of courses, students' classroom feedback was also an important part, and it was necessary to establish a mechanism for students to evaluate teachers' teaching quality. Teachers were comprehensively evaluated from the aspects of guidance during course selection, satisfaction with teaching content, and satisfaction with teaching methods. The results could be included in teachers' advanced evaluation and year-end assessment, so as to encourage teachers to actively deliver public elective courses and further improve their teaching quality. Students' feedback or evaluation was also a way of interaction between students and teachers, which could make the relationship between students and teachers closer and more harmonious, which was beneficial

to teachers' teaching. Ultimately, it was possible to create a good environmental foundation for cultivating high-quality talents.

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