Exploration of the Guidance of Elective Courses and Career Planning of Hong Kong Undergraduates Based on the MBTI Test

Jiashuang Fan

Lingnan University, Hong Kong, China

Abstract: The process of selecting courses is a critical aspect of the college experience, as it plays a significant role in shaping students' academic and professional development. This essay examines the factors that influence course selection and their impact on students' learning outcomes by administering the MBTI personality test to undergraduate students in universities in Hong Kong and conducting a systematic sorting and analysis of their elective courses based on their personality types, which shows that elective courses in comprehensive subjects can bring significant benefits when students connect their course selection with their personalities. It is essential to develop a personalized course selection regime that plays to students' strengths, improves their shortcomings, and takes different characters into account. Elective courses and career development are mutually dependent, and universities should assist students in selecting appropriate courses and managing their career planning. Effective communication between teachers and students is crucial for creating a positive atmosphere for college life, and a supportive academic environment that encourages responsible course selection can help students succeed in their academic pursuits and prepare them for their future careers.

Keywords: elective courses selection, career development, MBTI personality test, academic environment

1. Background to the study

1.1 Research Introduction

As the global economy undergoes reform and development, higher education has evolved from being elite to becoming popular. Consequently, college students face immense pressure to succeed in their studies and secure future employment. To alleviate this confusion, administering the MBTI test to college students has become necessary (Kutsko, K. A. 2019).

Primarily, there is a direct correlation between students' personalities, the elective courses they undertake, their professional personality types, and career development. The higher the degree of alignment, the greater the accuracy of the job search, leading to higher success rates, smoother career development, and greater personal and professional achievements (Cai Ling, 2007).

Secondly, administering the MBTI test to college students can help them better understand themselves, identify their strengths and weaknesses, and plan their academic and career paths more effectively. Colleges and universities must assist students in scientific elective course selection and career planning, helping them improve their competitiveness, learn from one another, and establish a strong foundation for their long-term career aspirations. It is important to note that social service is one of the four fundamental functions of higher education institutions. As such, colleges and universities bear the responsibility and obligation to provide students with scientific guidance, career planning, and counseling services (Li Jianmin (2015).

Thirdly, the selection and learning of students' elective courses in colleges and universities facilitate teaching departments in various disciplines to gain a better understanding of the students' basic academic profile. This information can aid in the adjustment of professional courses and elective courses, provide reference for the reform of employment guidance courses and career planning courses, and enable the provision of more accurate personalized services to students (Chen Chunli, 2012).

Lastly, the professional personality type is a psychological construct that is relatively stable, and its measurement results are of considerable reference value. The Analytic Hierarchy Process (AHP) can be utilized to analyze the factors that affect students' reasonable choice of elective courses. The AHP method analyzes each factor that affects students' elective course selection, assigns a value, sorts them according to the set proportion, diagnoses, and identifies the main factors that influence students' choice of elective courses. This approach provides valuable guidance for students in selecting the most appropriate elective courses (Zeng Qingwu, 2009).

1.2 Research objectives

This research aims to administer the MBTI personality test to undergraduate students in Hong Kong universities and conduct a systematic sorting and analysis of their elective courses based on their personality types. This approach provides guidance and suggestions to students in choosing appropriate elective courses that align with their personality type, enabling them to understand their strengths and weaknesses. It is essential for students to be familiar with their personality type and the advantages and disadvantages associated with it to make informed decisions about their course selection. The MBTI theory offers a deeper, scientific, and comprehensive understanding of an individual's personality, including their innate and acquired knowledge and skills, which can guide students towards more fulfilling academic and career paths (Zong Ming, 2021).

It is crucial for students to recognize their strengths and leverage them to reach their full potential. Research has shown that individuals learn faster and make more significant progress and growth when they focus on their strengths (Minhas, P, 2012). This strength can be translated into preferences for elective courses, indicating that students perform better in courses they have a preference for. Conversely, it is also essential to acknowledge and address one's weaknesses, as these can impact both learning and personal growth. By consciously working to address these shortcomings in both education and daily life, students can step out of their comfort zones and use practical methods to improve and overcome their weaknesses (Ober, J. 2018). This approach can result in a well-rounded and accomplished individual who has successfully developed their strengths and overcome their weaknesses.

The goal of this research is to examine the relationship between MBTI personality types and course preferences and making up for shortcomings. By identifying the differences in elective course preferences and making up courses based on various MBTI characteristics, this study aims to provide guidance to undergraduate students to cultivate their strengths and improve their weaknesses (Wang Qi, 2020). This research will help students understand their personality types better and how it relates to their academic performance. By analyzing the data, students can learn which courses align with their strengths and preferences, and which courses they may need to challenge themselves to overcome their weaknesses. This information will help students make informed decisions about their academic choices and achieve their full potential in their academic pursuits.

1.3 Definition of key terms

Elective courses: Courses arranged and selected by students themselves as stipulated in the teaching plan of various disciplines and majors in colleges and universities. Some elective courses are to introduce advanced science and technology and the latest scientific achievements; others are to expand students' knowledge, meet students' interests and hobbies and develop their talents in a particular aspect.

Public elective course: it is an open elective course for students of all majors in the school. Students can choose courses independently according to their interests and professional needs. This kind, of course, aims to improve students' comprehensive quality and broaden their knowledge. Our research mainly focuses on the public elective courses.

MBTI: a self-reported personality assessment tool. Its design includes a set of strict decision-making process and uses norms. The theoretical basis of MBTI is Jung's psychological types (C.G. Jung 2009).

Psychological Types: Jung believes that when the human brain makes decisions, it can be divided into two links: one perception stage (tactile perception stage and intuitive perception stage) and the other judgment stage (perceptual judgment stage and rational judgment stage). Later, in the 1940s, American psychologist Isabel Briggs and his mother hoped that women working in factories could find suitable jobs through the personality test. Therefore, the MBTI personality test was proposed based on Jung's psychological theory model.

Introduction to theoretical content: Jung's psychological theory is divided into general attitude and functional types.

General attitude type is divided into personality types according to libido's tendency. Individual libido's activities tend to the external environment, that is, extroverted people; Libido's actions tend to themselves, that is, introverted people. Extroversion means the outward transfer of libido, and introversion means the inward development of libido. Extroverted people pay attention to the external world, love to socialize, are lively, confident, cheerful, and interested in everything. Introverted people attach importance to the subjective world, like meditation, are good at introspection, withdrawn, shy, and it is difficult to adapt to the new environment.

Function type: Jung pointed out that personal psychological activities have four essential functions: feeling, thinking, emotion and intuition. Feeling (sensory perception) tells us that something exists; Thinking tells you what it is; Emotion tells you whether it is satisfactory; Intuition tells you where it comes from and where it goes. Intuition, in Jung's view, allows people to infer in the absence of factual materials. According to the combination of two attitude types and four functions, Jung described eight functional character types.

Jung's psychological typology was not intended to rigidly categorize personality into eight types. Rather, it served as a theoretical system for explaining personality differences. In reality, many individuals exhibit both extroverted and introverted tendencies, and neither extreme is purely dominant. Furthermore, while everyone uses four psychological functions, their focus and level of use can vary among individuals. Some people may give greater weight to one function over another.

To expand on Jung's two attitude types and four functional types, American psychologists Briggs and Miles introduced two additional dimensions of judgment and perception, creating the four-dimensional and eight-polar characteristics of personality (Furnham, 2020). The combination of these dimensions resulted in the creation of sixteen distinct personality types. After more than two decades of research, the Myers-Briggs Type Indicator (MBTI) was developed to apply Jung's type theory in practical settings. Using Jung's concepts of superior and inferior functions, dominant and subordinate functions, Miles introduced the concept of functional level to establish the hierarchy of functional use for each personality type. This theory further proposed lifelong development of types and contributed to the advancement of psychological type theory.

The theory of psychological types includes the following parts: the four dimensions and eight poles of types and their personality characteristics, the functional level of types, and the lifelong development of types.

2. Literature Review

One major issue with the assessment system of elective courses is that there are irregularities in the final examination and evaluation process. To ensure that students pass, some teachers may lower the evaluation standards or skip certain assessment procedures. This creates a false impression for students that the course is easy to pass, which may lead to a lack of motivation to learn or take the course seriously. Li Yujie (2018) also notes that some students may even fail to complete most of the credits required for graduation, yet still receive the credits they need to graduate. Such practices not only compromise the integrity of the assessment system but also undermine the value and significance of the elective courses. To address this issue, it is important to establish and enforce clear evaluation standards and procedures, as well as to promote the accountability of both teachers and students in the assessment process.

The significance and impact of public elective courses have been greatly diminished, resulting in subpar management quality (Zhang Guoliang, Sun Zhaobin, Cao Xiufen, & He Yanli, 2011). However, there have been recent efforts towards the development and reform of public elective courses, with a focus on strengthening schools, training practical talents, and prioritizing attitude knowledge and skills as the core content. In order to improve the quality of public elective courses, it is essential to clarify their tasks, precisely locate them, serve the ideas and needs of both students and the institution, broaden their scope, promote the interconnectedness of knowledge, and prioritize students' career development.

The relationship between undergraduate elective courses and students' future careers and interests is crucial. In the pursuit of academic excellence, learning courses is of utmost importance for university students. As the job market becomes increasingly competitive, it is imperative to analyze college students' personalities to enhance the effectiveness of professional education and promote their career development (Wandrial, 2016).

Currently, the MBTI Michael Briggs personality test is widely used to accurately assess students' thinking and behavior patterns. By understanding their potential and personality, students can make personalized curriculum choices and plan their career development effectively (Chen Yili, 2013). Employment has become a significant event that affects both the national economy and people's livelihoods. However, a low employment rate does not necessarily mean a shortage of jobs for graduates. The reasons for employment difficulties are diverse and complex, including structural contradictions, active unemployment, information asymmetry, and a lack of self-awareness among graduates, hindering their ability to leverage their strengths and overcome their weaknesses during job hunting and career development (CC Wu, 2011).

Creativity has no unified definition, and its concept is rich and complex. Any existing definition has certain limitations. The Williams Creativity Disposition Questionnaire used in this study measures creativity from a social dimension, where individuals with high sociability tend to score higher on adventures and challenges. Additionally, many factors affect creativity, and this study only focuses on personality aspects. Due to various irrelevant factors in the research and the limitation of the research scope, errors may exist. Further research and verification are necessary to determine whether the research conclusions are universal and whether this correlation has reached a certain linear level (Shi Licheng and Ma Zian, 2016).The MBTI theory-based survey on occupational personality types of prospective graduates shows that among the four occupational personality types, the NF type (n=119, 42.65%) is the most preferred by the sample. The distribution of the four personality types among different student groups (gender, major, general student or not) is slightly different, but the NF type has the highest proportion.

According to the MBTI test, the sample displayed a preference for the INFJ type (n=43, 15.4%), which accounted for the highest proportion among the sixteen occupational personality types. In particular, INFJ was the most common professional

personality type for girls (n=37, 16%) and ENFJ was the most common for boys (n=6, 12.5%), excluding INFJ (n=6, 12.5%). ISTP (n=4, 1.7%) and ENTP (n=4, 1.7%) were the least common personality types for girls. Different majors showed different distributions of professional personality types: cooking and nutrition education had the most INFJ types, tourism management and service education had the most INFJ and ISFJ types, respectively. Due to the sample size, psychology had gaps in the distribution of occupational personality types. In terms of grades, there was a positive correlation between the occupational personality type and the extroversion-introversion I dimension, but no correlation in other dimensions, gender, and majors among normal and non-normal students (Secretary Lin, 2019).

From an MBTI perspective, career development and matching for administrative students emphasize the discovery and utilization of an individual's natural strengths to deal with the external world in a natural, comfortable, and efficient way. This paper explores the matching degree of students' personality preferences and things and provides personalized and professional knowledge to enable students to have a clearer learning idea about management significance and future career development direction according to their main characteristics and personal characteristics. The administrative management major can be adjusted and innovated from the perspective of matching the professional characteristics with the student's personality type. Curriculum and teaching methods in administrative science can guide, educate, and cultivate talents to realize the value of the survival and development of the administrative discipline more deeply (Luo Xiangfei, 2021).

Regarding the influence of students' course selection mentality on employability and career development under the credit system, course study plays a vital role in improving students' comprehensive quality. However, the cultivation of complete quality cannot rely solely on course study, and students should choose courses based on cultivating and improving overall grades. Students should consider their interests and major requirements, whether the course content can expand knowledge, improve ideological awareness, and cultivate comprehensive quality. They should also consider whether the professional qualities and abilities of teachers can positively impact themselves. Improving students' comprehensive quality is conducive to the development of their employability (Williams, A, 2021). To improve the employability of students and lay a solid foundation for future career development, colleges and universities should continuously improve the course selection mechanism while implementing the credit system to ensure that students can systematically learn professional knowledge through correct course selection during school (Zhang, Sun, Cao, 2011).

Schools should guide students to choose appropriate majors and degrees that match their personality types, cultivate relevant skills, improve their overall quality, and enhance their adaptability and competitiveness. This approach should include rational study arrangements and appropriate development plans. However, it is important to note that different jobs and careers may require different personality types, and students should remain open to opportunities outside their initial comfort zone. (Zong Ming, 2021)

3. Methodology & Research design

3.1 Subjects and Data type

Subjects: 300 undergraduate students in Hong Kong. Data type: Electronic version of questionnaire result conducted by an application named 'Questionnaire Star'.

3.2 Research method

Questionnaire, for the advantages below:

a. High efficiency

A questionnaire survey is a widely used method for data collection because it has several significant advantages. One of the main benefits is its ease of operation and cost-effectiveness. Investigators do not need to collect data one by one, which saves both time and resources. In the case of Hong Kong undergraduate students, it is possible to distribute a link to the questionnaire, allowing for a large number of individuals to be surveyed in a short period. By utilizing this method, it is possible to save on workforce, material resources, financial resources, and time, while also obtaining a substantial amount of data.

b. High objectivity

The use of anonymous questionnaires allows undergraduate students to freely express their honest thoughts and situations without fear of repercussions or judgement. The respondents' privacy is protected, and they are more likely to provide truthful answers, resulting in more accurate and credible results. Conversely, if respondents feel that their anonymity is compromised, they may be less willing to express their true wishes, which can compromise the validity and reliability of the survey. Therefore, using anonymous questionnaires is a more conducive approach for obtaining accurate and credible results.

c. High unity

The questionnaire survey uses the same questionnaire for all respondents, which is beneficial to the comparative analysis of respondents in the same situation, the investigation of respondents with a different consciousness, and the individual case study.

3.3 Selection method

Participants will be randomly selected (among undergraduate students in Hong Kong)

3.4 Research process

The questionnaire we designed mainly included the following questions:

(a) MBTI test's link and what's your result?

(b) The accuracy of the test.

(c) Which are your favorite elective courses in the following?

(d) Which elective course, in your opinion, can best make up for the defects mentioned in the MBTI test? (Which elective course do you think can best make up for shortcomings or develop strengths? In MBTI testing)

For the first question, we designed to make sure the participants can all have an intuitive and fresh impression of the MBTI test and related explanation to corresponding dispositions, which can further assure the veracity of the whole procedure. We can also get the participants' MBTI results in the first step, which is the foundation of the comprehensive analysis.

For the second question, we used it as a filtration mechanism to improve the accuracy of the procedure. Specifically, we selected respondents who believed that the MBTI test could not accurately match their personality as an adequate sample. After filtering, the sample size reached 246, with 18% of respondents (n=54) indicating that the MBTI test was imprecise. We recognized that MBTI's time-consuming nature and cognitive biases, such as the Ambiguity effect and Attentional bias, could introduce deviations. Nevertheless, this proportion of deviation was manageable, as confirmed in Carr's study on applying MBTI personalities to coaching (Carr, 2008). Carr noted that as long as the deviation proportion remained under control, it would not lead to misunderstanding results.

The third question ("Q3") is the main central question that helps us conclude the first result, what elective courses do students with different MBTI personalities like. We included 72 various elective courses in the list, which we obtained from the official website of Lingnan University, the University of Hong Kong, The Chinese University of Hong Kong, and The Hong Kong University of Science and Technology. We then divided those 72 elective courses into ten categories, mainly according to the Outline of academic disciplines (Praserttitipong, D, 2018) with some fine-tuned improvements.

Table 1: 10 categories for 72 Selective Courses

Four-category 1	Category 2	Category 3	Category 4	Category 5
Language	Finance & Economy	Technology	Arts	Philosophy & Ideology
Category 6	Category 7	Category 8	Category 9	Category 10
Laws	Pedagogy	Mathematics & Science	Computer Science	Literature

The fourth question ("Q4"), is the main question that help us to conclude the second result, what elective courses would students with different MBTI personality will choose to make up theirfor defects.

We also included some other questions in the questionnaire, such as the gender of the participants, the major of the participants, and so on. We treat those questions as inconsequential factors, so we will not mention those in the following analysis.

3.5 Ethical issues

Ethical considerations are of utmost importance in conducting any research, including the use of a questionnaire method. The issues of privacy and confidentiality must be carefully addressed, ensuring that participants' rights are respected and that researchers have limited access to personal information. As Helweg-Larsen (2003) has noted, individuals have the right to control their personal information, including who can access it and how it can be used. In our survey, we have taken into account these ethical considerations to ensure that the participants' personal information is protected and the confidentiality of their responses is maintained.

4. Results & Finding

4.1 Findings

The first and most intuitive data we got from the questionnaire is the MBTI character distribution of all participants, which can be seen in the below table.

Table 2: Participants' MBTI Character Distribution

Type	Amount	Percentage
INTJ	44	17.9%
ENTJ	30	12.2%
INFP	26	10.6%
INFJ	20	8.1%
INTP	20	8.1%
ENFP	18	7.3%
ISFJ	16	6.5%
ENTP	14	5.7%
ENFJ	12	4.9%
ESFP	10	4.1%
ESTJ	8	3.3%
ISTP	8	3.3%
ESTP	6	2.4%
ISFP	6	2.4%
ISTJ	6	2.4%
ESFJ	2	0.8%
Total	246	100.0%

From Table 2 we can that know, the most common character of all participants is "INTJ", accounting for c.17.9%, while the least is "ESFJ", accounting for 0.8%.

For the third question, we can conclude the data as below.

Table 3: Different Characters' Most Liked Selective Courses Distribution

Character	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Category 7	Category 8	Category 9	Category 10
INTJ	2	3	0	3	3	1	27	2	2	1
INTP	0	2	1	0	13	1	1	0	1	1
ENTJ	2	3	19	1	0	2	0	1	0	2
ENTP	0	0	1	9	1	0	0	1	1	1
INFJ	0	1	13	0	1	-	0	2	2	1
INFP	2	1	1	15	1	2	2	1	1	0
ENFJ	1	1	8	1	0	0	0	0	0	1
ENFP	1	1	12	2	0	0	0	0	1	1
ISTJ	1	2	0	0	0	0	0	0	0	3
ISFJ	2	10	2	2	0	0	0	0	0	0
ESTJ	0	1	1	4	1	0	0	0	0	1
ESFJ	0	0	0	0	1	0	0	1	0	0
ISTP	1	1	5	0	1	0	0	0	0	0
ISFP	0	0	0	0	2	1	1	1	0	1
ESTP	0	2	3	0	1	0	0	0	0	0
ESFP	1	1	0	0	0	0	0	6	1	1

For the fourth question, we conclude the data as below.

Table 4: Different Characters' Complementary Courses Distribution

Character	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Category 7	Category 8	Category 9	Category 10
ENFJ	0	2	1	6	1	0	0	0	0	2
ENFP	1	3	2	8	0	0	1	1	1	1
ENTJ	1	1	0	2	19	1	2	3	0	1
ENTP	1	0	1	1	3	0	7	0	0	1
ESFJ	1	1	0	0	0	0	0	0	0	0
ESFP	0	1	0	0	6	0	1	1	1	0
ESTJ	5	1	1	1	0	0	0	0	0	0
ESTP	3	1	0	1	0	0	0	0	1	0
INFJ	1	1	3	11	0	0	2	1	1	0
INFP	0	2	1	3	1	3	1	1	1	13
INTJ	3	0	2	3	2	27	3	3	0	1
INTP	1	13	0	3	0	0	1	1	1	0
ISFJ	1	0	0	1	10	0	0	2	1	1
ISFP	1	1	3	0	0	0	0	0	0	1
ISTJ	0	1	0	1	0	0	0	3	1	0
ISTP	1	1	2	0	0	4	0	0	0	0

4.2 Analysis

4.2.1 Analysis of Significance Test of Difference

In the process of administering the questionnaire, measures were taken to minimize the influence of random error in order to enhance the accuracy of the results and conclusions. For instance, the use of a filtration question was employed to increase the precision of the collected data. However, it is important to acknowledge that the final performance of the data still incorporates the effect of experimental error, in addition to the observed value processing effect, due to the inherent variations between individuals and numerous uncontrollable factors.

Therefore, we decided to use chi-square tests for the first step of our analysis to judge whether the difference between samples is mainly caused by random error, essential discrepancy, or some treatment effects.

We conducted a chi-square test using Table3's data for the third question. The result can be seen in the below table.

Table 5: Chi-square Test for Q3

Chi-square Test for Q3			
	Value	df	Asymptotic Significance (2-sided)
Pearson's Chi-squared	559.341	135	.000
Likelihood Ratio	388.587	135	.000
Linear-by-Linear Assosiation	3.409	1	.065
N of Valid Cases	246		

From Table 5's influence, we can conclude that:

Different participants' MBTI characters significantly differ in choosing their favorite elective courses, as the Pearson's Chi-squared equals 559.341 and the Asymptotic Significance level is less than 0.001 ($p < 0.001$).

We conducted a chi-square test using Table 6's data for the fourth question. The result can be seen in the below table.

Table 6: Chi-square Test for Q4

Chi-square Test for Q4			
	Value	df	Asymptotic Significance (2-sided)
Pearson's Chi-squared	412.973	135	.000
Likelihood Ratio	312.183	135	.000
Linear-by-Linear Association	2.808	1	.094
N of Valid Cases	246		

From Table 6's result, we can draw the conclusion that:

Different participant's MBTI characters have a significant difference in choosing elective courses that they thought can improve their defects suggested in the MBTI test, as the Pearson's Chi-squared equals 412.973 and the Asymptotic Significance level is less than 0.001 (p<0.001).

In all, from two chi-square tests, we can know the difference between participants, in other words, different choice preferences from different MBTI characters, are mainly caused by their essential difference, but not random error or treatment effects. This can make sure the whole analysis procedure is of significance.

4.2.2 Analysis of correlation

From Section II.I, it is evident that significant differences exist between course selection preference and MBTI characters. In this section, we intend to delve further into the correlation between preference and MBTI characters. As the data we collected is non-continuous and may not be linear, we chose to use Spearman's rank correlation analysis. The relevant data can be found below.

Table 7: Result for Spearman Correlation Analysis

			MBTI Characters	Q3	Q4
Spearman	MBTI Characters	Correlation coefficient	1	-0.342**	-0.306**
		Sig.(2-sided)	.	0	0
		N	246	246	246
	Q3	Correlation coefficient	-0.342**	1	0.142*
		Sig.(2-sided)	0	.	0.026
		N	246	246	246
	Q4	Correlation coefficient	-0.306**	0.142*	1
		Sig.(2-sided)	0	0.026	.
		N	246	246	246

** Highly significant at 0.01 (2-sided) level

* Highly significant at 0.05 (2-sided) level

As shown in Table 7, there was a significant negative correlation between the MBTI characters of the respondents and both their favorite elective courses and courses that can improve the defects (P < 0.01), indicating that the MBTI characters of the respondents have a significant influence on those two choices.

4.2.3 Analysis of choices preferences for different MBTI characters

We summarized the data from table 3 and table 4 by analyzing the mode of elective courses they chose with different MBTI characters. We also calculated the percentage of the courses' mode, which can be seen as below:

Table 8: Courses Category's Mode Percentage for Q3 and Q4

	Q3		Q4	
MBTI Characters	Courses	Percentage	Courses	Percentage
ESFJ	Category 5	50.00%	Category 1	50.00%
ESTP	Category 3	50.00%	Category 1	50.00%
ISFP	Category 5	33.33%	Category 3	50.00%
ISTJ	Category 10	50.00%	Category 8	50.00%
ESTJ	Category 4	50.00%	Category 1	62.50%
ISTP	Category 3	62.50%	Category 6	50.00%
ESFP	Category 8	60.00%	Category 5	60.00%
ENFJ	Category 3	66.67%	Category 4	50.00%
ENTP	Category 4	66.67%	Category 7	64.30%
ISFJ	Category 4	62.50%	Category 5	62.50%
ENFP	Category 3	61.11%	Category 4	61.10%
INFJ	Category 3	65.00%	Category 4	70.00%
INTP	Category 5	65.00%	Category 2	65.00%
INFP	Category 4	57.70%	Category 10	65.40%

MBTI Characters	Q3		Q4	
	Courses	Percentage	Courses	Percentage
ENTJ	Category 3	63.33%	Category 5	63.30%
INTJ	Category 7	61.36%	Category 6	61.36%

The statistical data presented in Table 8 provides insights into the correlation between course selection preferences and MBTI characters. For instance, among all the MBTI characters tested, INTJ was the most common, and participants with this character type showed a strong preference for courses in Category 7, Pedagogy. Additionally, they believed that courses in Category 6, Laws, could best address the weaknesses identified in their MBTI test results. Similar conclusions can be drawn for the other 15 MBTI characters using the same analytical methodology.

To better illustrate the relationship between the participants' MBTI characters and their course preferences, we conducted a regression analysis using the number of participants with each MBTI character as the independent variable and the percentage of the most selected course category as the dependent variable. The aim of this regression analysis is to demonstrate a positive relationship between the sample size of different MBTI characters and the percentage of the corresponding preferred course categories. In other words, a larger sample size of a particular MBTI character will lead to more accurate and precise conclusions regarding their course preferences. This supports the notion of the existence of optimal course choices for the two questions, independent of individual differences.

Table 9: Sample Amounts and Mode's Percentage for Q3 and Q4

Type	Amount	Percentage in Q3	Percentage in Q4
ESFJ	2	50.00%	50.00%
ESTP	6	50.00%	50.00%
ISFP	6	33.33%	50.00%
ISTJ	6	50.00%	50.00%
ESTJ	8	50.00%	62.50%
ISTP	8	62.50%	50.00%
ESFP	10	60.00%	60.00%
ENFJ	12	66.67%	50.00%
ENTP	14	66.67%	64.30%
ISFJ	16	62.50%	62.50%
ENFP	18	61.11%	61.10%
INFJ	20	65.00%	70.00%
INTP	20	65.00%	65.00%
INFP	26	57.70%	65.40%
ENTJ	30	63.33%	63.30%
ESFJ	44	61.36%	61.36%

The regression result using the modes' percentage in Q3 as a dependent variable can be sees below.

Table 10: Regression Results for Sample Amounts and Mode's Percentage for Q3

Regression Result	
Multiple R	0.4824
R Square	0.2327
Adjusted R Square	0.1779
Std. Error of the Estimate	0.0813
B	0.0040
Std. Error	0.0019
t	2.0605
Sig.	0.0484
Lower 95%	-0.0002
Upper 95%	0.0081

As shown in Table 10, there was a positive correlation between the sample amounts characters of the respondents and both their favorite elective courses and courses that can improve the defects (P < 0.05), indicating that the larger the sample capacity, the MBTI character, the percentage of the modes that participant's favorite elective courses would be higher.

The regression result using the modes' percentage in Q4 as dependent variable can be seen as below.

Table 11: Regression Results for Sample Amounts and Mode's Percentage for Q4

Regression Result	
Multiple R	0.6138
R Square	0.3767
Adjusted R Square	0.3322
Std. Error of the Estimate	0.0582
B	0.004
Std. Error	0.0014
t	2.9091
Sig.	0.001
A La ower 95%	0.001
Upper 95%	0.007

As shown in Table 11, there was a positive correlation between the sample amounts characters of the respondents and both their favorite elective courses and courses that can improve the defects (P < 0.05), indicating that the larger the sample capacity, the MBTI character, the percentage of the modes that the elective courses the participant would choose to improve themselves would be higher.

We can also find that R Square in Q4's regression is more significant than that in Q3's regression (0.3767>0.2327), which means the established regression model result in Table 11 is more appropriate and acceptable. It can further demonstrate that more of the variety of modes' percentage in Q4 in the estimation is affected by the sample amount than the variation in Q3. It can improve compliance with the research result by Thomas J. Hostler (Thomas J. Hostler, 2018), in which the author mentioned that choices made with previous emotional cues would be more precious. In our case, the defects of participants have been stressed when testing their MBTI characters, which is also a kind of emotional cue. As a result, participants will make more rational decisions and choose those courses to improve themselves intentionally, leading to a more accurate result.

5. Discussion and conclusion

5.1 Research findings

Firstly, the proportion of natural science courses offered in elective courses is too small compared to courses in humanities and social sciences. At Harvard University in the United States, the subject composition of elective courses is relatively balanced with natural science accounting for 29%, social science accounting for 31%, and humanities accounting for 40%. Therefore, universities should increase the proportion of natural science courses and adjust the proportional relationship between humanities and social sciences to achieve a more balanced subject composition when designing elective courses.

Secondly, universities should offer elective courses related to emerging disciplines, marginal disciplines, and interdisciplinary disciplines to make them an integral part of the elective course system. For example, science and engineering students should have access to emerging disciplines formed by the intersection of humanities, social sciences, and science, engineering, and other disciplines, such as information theory, philosophy of science and technology, science and technology law, etc.

Thirdly, universities should offer elective courses in comprehensive disciplines. Some people criticize universities for neglecting to provide courses that promote cultural and broad field education, which is important for students' total quality of culture. The designers of the elective course system are responsible for providing students with courses on comprehensive cultural quality and broad disciplines. However, most colleges and universities still fall short in providing such relevant courses.

The analysis of research data indicates that out of the total number of participants, 56.9% of them have personality types INTJ, ENTJ, INFP, INFJ, and INTP, while only 11.3% have personality types ISTP, ESTP, ISFP, ISTJ, and ESFJ. These

findings suggest that there is a correlation between personality types and the tendency of students to choose elective courses.

5.2 Limitations of this study

Most of the courses that students choose are based on their first impressions and intuition, without having taken those courses before. This can lead to inaccuracies as students may not fully understand the core objectives of the courses they select or the potential benefits they offer in addressing their weaknesses.

It should be noted that the majority of students have not taken the courses listed, and thus their preferences are largely based on initial impressions and intuition. Consequently, the accuracy of their choices may be compromised as they may have limited understanding of the course objectives and how they could benefit from them. This limitation also renders it challenging to establish a degree of preference for each course, which in turn lowers the reliability of the survey results. One potential solution to enhance the analysis of the data is to introduce a scoring or ranking system to assign levels of preference. Such an approach could facilitate a more robust and concise regression analysis.

According to Yoo. B, MBTI has some regional differences caused by the fixed regional educational model and cultural differences. (Yoo. B, 2013). The samples we selected are almost all students from Hong Kong and Mainland China, so that some synergistic actions may exist. The educational heterogeneity in Hong Kong and Mainland China can't compensate for the traditional Chinese philosophy rooted in every participant. In other words, the result may be less accurate when applied to students other than students in the Great China Area.

5.3 Recommendations

Based on the research results, several recommendations can be made for undergraduate students or those entering college. Firstly, students should pay attention to the diversity of their personalities and use tools such as the MBTI test to gain a better understanding of themselves. With the implementation of individualized procedures and predefined standards in the university's elective courses system, students can choose courses that complement their strengths and improve their weaknesses.

Furthermore, for those who feel that the MBTI test accurately represents their personalities, the findings from this research can serve as a useful reference when selecting elective courses. The preferred elective courses for different MBTI personalities indicate areas in which they are skilled, while courses that address their shortcomings can help individuals with the same personality type to excel further. (Praserttitipong, D., & Srisujjalertwaja, W., 2018; Li Shanshan, 2021).

5.4 Conclusion

In the current academic landscape, it is crucial to cultivate a positive course selection mentality among students and reinforce their understanding of the curriculum system from the moment they enter the university. To this end, universities should employ a diverse range of strategies to enhance the entrance education of first-year students and help them adjust to the learning and living environment as early as possible. For instance, university officials can organize activities such as dormitory visits, seminars with professional teachers and senior students, and industrial education sessions that focus on college life. These activities can facilitate students' early understanding of their major and ignite their interest in learning.

To ensure that students select appropriate major and elective courses, universities should prioritize courses that align with students' interests and professional goals. As an example, the physical education major offers more than 20 courses, including track and field, gymnastics, volleyball, martial arts, aerobics, swimming, basketball, football, school physical education, middle school physical education teaching methods, sports training, sports anatomy, and sports healthcare. Professional teachers should guide students in selecting courses that suit their interests and direction while avoiding blind course selection. Special attention should be given to lower grade students, who may lack a clear understanding of the curriculum system.

Effective communication between teachers and students is essential for creating a positive atmosphere for college life. Teachers and counselors should communicate regularly with students to understand their academic and personal circumstances and provide timely assistance where necessary. Developing a friendly relationship with students can foster trust and allow teachers to provide guidance in selecting courses that best align with students' goals. Overall, a supportive academic environment that encourages responsible course selection can help students succeed in their academic pursuits and prepare them for their future careers.

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