A STUDY ON STUDENT SATISFACTION IN CERAMIC DESIGN AND PRODUCTION COURSES IN HEFEI COLLEGES AND UNIVERSITIES, ANHUI PROVINCE, CHINA

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Abstract: This study analyzed students' satisfaction with ceramic design and production courses at three higher vocational colleges in Hefei City, Anhui Province, China. The aim was to examine the satisfaction levels with these courses, analyze how different course dimensions influenced students' satisfaction, and explore the correlation between various course aspects and overall satisfaction. The objective was to identify critical areas for improving teaching quality, optimizing curricula, and continuously enhancing the overall teaching quality of practice-based courses in Chinese higher vocational colleges and universities. Analytical methods included descriptive statistical analysis, independent samples t-test, and one-way ANOVA. These methods were employed to investigate current satisfaction levels with the ceramic design and production course, analyze the influence of different course dimensions on satisfaction, and explore correlations to optimize course curriculum and improve the teaching quality of practical classes.

Keywords: Higher Vocational Education, Course Satisfaction, Ceramic Design and Production Course

Introduction

With the development of science and technology and the quiet arrival of the knowledge-based economy, education had become an essential front in international competition, and countries were committed to developing the competencies necessary for students in the twenty-first century. Against this backdrop, the emphasis on student competencies (e.g., critical thinking, innovation, problem-solving, and interdisciplinary skills) has been growing in the education sector, and the labor market has been increasingly demanding graduates with practical skills and hands-on experience. As a result, education authorities in various countries began to re-examine and restructure their curricula. They paid attention to curriculum evaluation to emphasize and ensure that curricula were closely aligned with the needs of actual society to nurture talents who met real market demands. In traditional curriculum

evaluation, the curriculum was a broad concept, encompassing elements such as curriculum plans, standards, teaching materials, and the teaching and learning behaviors associated with these elements. With the in-depth development of curriculum reform in various countries, the field of education is increasingly inclined towards evaluating curriculum design itself, which is both a vital part of the curriculum evaluation system and an essential indicator for curriculum construction. Higher education institutions in Singapore and around the globe faced competitive pressure from international branch campuses. They dealt with the challenges of massive open online course (MOOC) platforms. In this highly competitive environment, enhancing student satisfaction has become crucial for many universities and colleges (Wong & Chapman, 2023). Course satisfaction surveys have become fundamental aspects of assurance and continuous improvement in higher education. For instance, universities in the United States, the United Kingdom, Australia, and Canada routinely used student course satisfaction surveys as learning evaluation tools and integrated them into their internal quality control systems and external accreditation assessment criteria. In US universities, end-of-course evaluations were a core component of a critical accountability system for teaching quality. They were used to formatively assess the effectiveness of courses, teaching methods, and practices (Diaz & Walker, 2022), aiming to comprehend teaching content, methodology, instructor performance, learning resources, course organization, and the extent to which course objectives had been achieved. The annual National Student Survey (NSS) of course satisfaction in England, conducted by the Higher Education Funding Council for England (HEFCE) and other organizations, included various aspects such as content, teaching quality, feedback and assessment, and academic support. The aforementioned illustrates the importance of the above examples and highlights the significance of curriculum development.

Research Objectives

(1) To comprehend the background variables of students enrolled in ceramic design and production courses at universities in Hefei, Anhui Province, China.

(2) To gauge students' satisfaction levels with ceramic design and production courses at universities in Hefei, Anhui Province, China.

(3) To analyze and compare the variability of course satisfaction in ceramic design and production courses among students with different background variables.

Literature Review

Concepts and Definitions of Student Satisfaction

The United States has been at the forefront of conducting systematic student satisfaction surveys. In 1966, the U.S. Board of Education adopted the CIRP (Cooperative et al.) to assess the

satisfaction of newly enrolled students (Ji, 2018). In the 1980s, "student-centered" education became increasingly popular in European and American developed countries. Consequently, student satisfaction surveys became widely used as a core indicator of education quality. In 1993, the Student Satisfaction Inventory (SSI) was created in the United States. Student satisfaction is an essential psychological variable reflecting the quality of education services. Its theoretical basis mainly stems from research results on customer satisfaction theory and customer perceived value. Therefore, many scholars have studied the concept of student satisfaction according to the tenets of customer satisfaction theory.

Factors affecting student satisfaction

Studies have shown that perceived quality has the most significant direct impact on student satisfaction, while the school's image has the most crucial overall effect. Seo & Warman (2018) Perceived quality is one of the critical variables affecting customer satisfaction. This argument suggests that perceived quality also significantly impacts student satisfaction. In a study on student satisfaction in pharmacology teaching, researchers categorized student satisfaction into four dimensions: interest in learning, course identity, satisfaction, and teaching quality (Yu, Gao, & Zou, 2023). The study found that interest in education was the most significant factor influencing satisfaction in teaching pharmacology. Kilinc & Dogan (2020) concluded that school conditions can have a substantial impact on student satisfaction. Schools should focus on increasing investment in facilities and resources, optimizing curriculum design, and enhancing student support services to improve student satisfaction. It showed that students had the highest level of satisfaction with the collaborative teaching methods used by teachers and the lowest level of satisfaction when evaluating the overall effectiveness of the teaching materials. The teacher's teaching method and textbook quality affect student satisfaction. Hale (2020) stated that teacher-student relationships influence students' learning satisfaction. Only by establishing excellent teacher-student interaction can teachers gain a more compelling insight into the actual needs of students, thus improving student satisfaction. Lu & Shen (2019) found that students expressed dissatisfaction with the school's operation mechanism, teachers' professionalism, and course content. Therefore, they hypothesized that school management, teacher quality, and course content would impact student satisfaction.

Relationship between satisfaction and learning outcomes

Academic achievement is a matter of great concern for both students and parents, with a strong correlation between student satisfaction and academic performance. From a broader perspective, two higher education research projects selected different performance indicators to investigate the relationship between student satisfaction and student outcomes. One study utilized student achievement as the primary indicator of learning outcomes, while the other focused on students' knowledge acquisition and overall teaching effectiveness as performance measures (Mihanović, Batinić, & Pavičić,

2016). Despite the variance in evaluation criteria, both studies arrived at similar conclusions: namely, a significant positive correlation exists between student satisfaction and student learning outcomes.

The association between satisfaction and learning outcomes was further examined from a micro perspective. The research revealed that students' interest in professional courses, the effectiveness of teaching, and the school's support services significantly influenced college students' learning outcomes. Through their research, Morselli & Gorenc (2022) demonstrated that reducing communication time inside and outside the classroom markedly enhances learners' outcomes and positively impacts overall educational quality. It is argued that students with better learning outcomes perceive the value of their educational investment as commensurate with its cost, leading to heightened satisfaction levels.

Conversely, when the disparity between theoretical and practical outcomes is substantial, or if both fail to meet expectations, students perceive the quality of educational services negatively, resulting in diminished satisfaction. Lin et al. (2012) noted a positive correlation between college students' academic performance and satisfaction. They observed that students who were content with course content and academic achievements tended to perform better academically. Therefore, student satisfaction is closely intertwined with academic performance; sometimes, a positive correlation exists between the two.

Methodology

This study was conducted among ceramic design and production students in three higher vocational colleges in Hefei City, Anhui. 736 out of 750 students across three grades were sampled and analyzed.

The study utilized a mature scale developed by previous researchers, which incorporated four dimensions from the questionnaire used in the article "Whether Students Are Satisfied with the Current Traditional Culture School-based Curriculum: Based on the Survey Research of 100 Primary and Secondary Schools Nationwide" by Ding Yiran and Lv Lijie, as well as two dimensions from the questionnaire in the article "Research on college students' identification with the excellent traditional Chinese culture in the new era: Based on the survey of Beijing-Tianjin-Hebei colleges and universities" by Zhao Jiajia, resulting in a total of six dimensions.

The Kaiser-Meyer-Olkin (KMO) value was found to be 0.936, falling between 0 and 1 and exceeding 0.9, indicating high sampling adequacy. Bartlett's test of sphericity was employed to assess the independence between variables. A significant level of less than 0.05 suggests a correlation between the variables. The approximate variance of Bartlett's test result was 8094.770, with a corresponding p-value (0.000) of less than 0.05, indicating a significant correlation between the items in the scale and the overall high validity of the scale.

Results

Basic background information

This study examines the demographic background information of freshman, sophomore, and junior students majoring in ceramic design and production at three institutions of higher learning in Hefei City, Anhui Province. The table below. Details are shown in Table 1.

Table 1: Basic information of the survey sample of students taking ceramic design and production programs in three tertiary institutions

Dimension	Group	Number	Percentage
Gender	Male	351	48
	Female	381	52
Grade	1	242	33.1
	2	244	33.3
	3	246	33.6
School	Anhui Hefei Finance and Economics College, China	246	33.6
	Anhui Hefei Economic and Technical College, China	240	33.8
	Anhui Hefei Science and Technology Vocational College, China	246	33.6
Place of birth	Rural	555	75.8
	Urban	177	24.2

Results of hypothesis testing

H1.1: There is a significant difference in the level of satisfaction of ceramic design and production students in different educational institutions. Details are shown in Table 2.

Table 2: Comparison of differences in students' satisfaction with ceramic design and production courses in different schools

Dimensions	Schools	SD	M	F
Student Expectations	Anhui Hefei Finance and Economics College, China	4.30	0.723	23.062**
	Anhui Hefei Economic and Technical College, China	4.63	0.664	
	Anhui Hefei Science and Technology Vocational College, China	4.67	0.567	
Quality Perception	Anhui Hefei Finance and Economics College, China	3.50	1.176	121.590**
	Anhui Hefei Economic and Technical College, China	4.69	0.643	
	Anhui Hefei Science and Technology Vocational College, China	4.35	0.687	
Perceived Value	Anhui Hefei Finance and Economics College, China	4.61	0.598	2.142
	Anhui Hefei Economic and Technical College, China	4.65	0.648	
	Anhui Hefei Science and Technology Vocational College, Anhui, China	4.72	0.480	
Course Satisfaction	Anhui Hefei Finance and Economics College, China	4.63	0.484	210.239**
	Anhui Hefei Economic and Technical College, China	3.61	0.684	
	Anhui Hefei Science and Technology Vocational College, China	4.42	0.552	
Cultural Awareness	Anhui Hefei Finance and Economics College, China	4.59	0.592	0.951
	Anhui Hefei Economic and Technical College, China	4.59	0.719	
	Anhui Hefei Science and Technology Vocational College, China	4.52	0.694	
Cultural Attitude	Anhui Hefei Finance and Economics College, China	4.65	0.571	2.019
	Anhui Hefei Economic and Technical College, China	4.64	0.639	
	Anhui Hefei Science and Technology Vocational College, China	4.57	0.578	

Note: *sig<0.05, **sig>0.01.

H1.2: There is a significant difference in the satisfaction of students of different genders towards the Ceramic Design and Production program. Details are shown in Table 3.

Table 3: Differences in students' satisfaction with the ceramic design and production course by gender.

Dimensions	Gender	N	M	SD	T
Student Expectations	Male	351	4.52	.681	3.414**
	Female	380	4.45	.643	
Quality Perception	Male	351	4.22	.619	1.204
	Female	380	4.13	.563	
Perceived Value	Male	351	4.68	.655	0.956
	Female	380	4.64	.625	
Course Satisfaction	Male	351	4.26	.695	1.015
	Female	380	4.20	.629	
Cultural Awareness	Male	351	4.55	.566	-.662
	Female	380	4.58	.519	
Cultural Attitude	Male	351	4.62	.655	0.019
	Female	380	4.62	.625	

Note: *sig<0.05, **sig>0.01.

H1.3: There is a significant difference in students' satisfaction with the Ceramic Design and Production program at different levels. Details are shown in Table 4.

Table 4: Comparison of the difference in satisfaction with the ceramic design and production course among students of different grades

Dimensions	Grade	M	SD	F
Student Expectations	1	4.40	0.722	7.931**
	2	4.59	0.716	
	3	4.61	0.555	
Quality Perception	1	3.57	1.266	80.550**
	2	4.39	0.780	
	3	4.55	0.536	
Perceived Value	1	4.68	0.479	0.329
	2	4.65	0.686	
	3	4.64	0.558	
Course Satisfaction	1	4.02	0.845	23.554**
	2	4.20	0.712	
	3	4.46	0.517	
Cultural Awareness	1	4.52	0.729	4.146*
	2	4.51	0.739	
	3	4.47	0.511	
Cultural Attitude	1	4.59	0.577	4.257*
	2	4.56	0.688	
	3	4.71	0.503	

Note: * is sig<0.05, ** is sig<0.01

H1.4: There is a significant level of satisfaction with the Ceramic Design and Production program among students from different family origin are shown in Table 5.

Table 5: Comparison of the differences in satisfaction with the ceramic design and production program among students from different family origins

Dimensions	Grade	Grade	MD	Comparisons
Student Expectations	1	2	-0.1986	2>1,3>1,3>2
		3	-0.21816	
Quality Perception	1	2	-0.81292	2>1,3>1,3>2
		3	-0.9795	
Perceived Value	1	2	0.02915	1>2,1>3,2>3
		3	0.04157	
Course Satisfaction	1	2	-0.17369	2>1,3>1,3>2
		3	-0.4347	
Cultural Awareness	1	2	0.00837	1>2,3>1,3>2
		3	-0.14601	
Cultural Attitude	1	2	0.02633	1>2,3>1,3>2
		3	-0.12054	

Note: *sig<0.05, **sig<0.01

Table 6: Post-test of students' satisfaction with the ceramic design and production program from different family origins

Dimensions	Place of Birth	M	SD	T
Student Expectations	Rural	4.55	0.624	1.117*
	Urban	4.49	0.813	
Quality Perception	Rural	4.15	1.029	-1.271
	Urban	4.26	0.925	
Perceived Value	Rural	4.67	0.508	1.226**
	Urban	4.61	0.764	
Course Satisfaction	Rural	4.19	0.738	-2.619
	Urban	4.35	0.671	
Cultural Awareness	Rural	4.59	0.597	1.981**
	Urban	4.48	0.856	
Cultural Attitude	Rural	4.65	0.536	2.135**
	Urban	4.54	0.751	

Note: 1 is male and 2 is female.

The post hoc test results revealed differences in student satisfaction with the ceramic design and production course based on their family backgrounds. Mean scores for rural students were higher than those for urban students across dimensions such as student expectations, value perception, cultural awareness, and cultural attitudes. Conversely, urban students scored higher mean scores than rural students in dimensions like quality perception and course satisfaction. Detailed information is presented

in Table 6.

Discussion

This paper investigates the impact of course satisfaction among students from various backgrounds enrolled in a ceramic design and production course at a university in Hefei, Anhui, China.

The survey, conducted across three higher vocational colleges, indicated a relatively balanced distribution of students majoring in ceramic design and production concerning gender, grade, and school. However, notable was found in the proportions of students from various family backgrounds. Despite these differences, students from these institutions expressed high satisfaction with the ceramic design and production program. Satisfaction levels varied significantly by grade level and home residence but not by gender or school. The study revealed significant differences in satisfaction across different schools, with the essential variations observed in the dimensions of "students' expectations," "perceived quality," and "program satisfaction." Conversely, other dimensions showed no significant disparities.

When satisfaction was analyzed across different program levels, variations were significant in value, showing a crucial distinction in overall satisfaction. Significant differences were found in several aspects when exploring satisfaction among different family backgrounds. Overall satisfaction showed considerable variation, with minor discrepancies in "quality perception" and "course satisfaction."

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