Factors influencing pharmacy students' satisfaction with pharmacy education quality: A cross-sectional study at a private university in Vietnam

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Abstract

Background: Student satisfaction is a crucial factor that reflects the quality of education, especially in specialised fields such as pharmacy. **Objective:** To investigate the determinants of satisfaction among final-year pharmacy students regarding the quality of pharmacy education at Thanh Do University in Vietnam. **Methods:** A cross-sectional survey was conducted from October to December 2023, involving 446 final-year pharmacy students using online and offline questionnaires. Data were analysed using SPSS 20.0 software, focusing on 33 observational variables and one composite satisfaction variable. Exploratory Factor Analysis (EFA) was used to identify key factors affecting educational quality, while linear regression was applied to assess the impact of these factors on student satisfaction. **Results:** Overall satisfaction level was 3.89 (SD = 0.731). The key factors identified were Student support activities (β = 0.516), Training Programme (β = 0.434), Quality of facilities (β = 0.378), and teaching staff (β = 0.315). **Conclusion:** The findings highlight that SSA has the greatest influence on student satisfaction, followed by TP, QF, and TS. These results emphasised the need to improve student support services, curriculum structure, and facilities to enhance the educational experience at Thanh Do University.

Introduction

The quality of higher education in Vietnam is currently a significant concern for society and policymakers due to its lower standards compared to neighbouring countries and the global arena (Phan, 2013; Tran & Nguyen, 2022; Nguyen *et al.*, 2022). In particular, the quality of healthcare professionals, specifically pharmacists, upon graduation, has emerged as a prominent issue in Vietnamese society. Presently, there are two primary programs for undergraduate pharmacy education in Vietnam: 1) the articulation program for diploma graduates (three-year duration), and 2) the full-time program for high school graduates (Five-year duration). It can be seen that while there are outcome standards for the bachelor's degree in pharmacy for all students, their backgrounds, needs, motivation, learning styles, and so on between these two programs

are likely to be diversified. Statistics show that recent years have witnessed an increasing demand for pharmacy majors (MOET, 2016). Since 2013, Vietnamese private institutions involving their teachers and facilities have been licenced to join the public sector in delivering healthcare programs, particularly pharmacy education, to meet such demand. Besides, actions on quality assurance are also carried out in response to the situation. Firstly, in 2016, the Ministry of Education and Training of Vietnam (MOET) issued regulations on quality assessment standards for university-level educational programmes, presenting 11 standards and 50 criteria for evaluating the quality of university-level educational programmes (MOET, 2016). Most recently, the Ministry of Education and Training issued Circular 12/2017/TT-BGDĐT on quality assurance for higher education institutions, outlining 25 standards for evaluating educational institution

quality (Ministry of Education and Training, 2017). These changes aim to enhance and improve the quality of educational activities to meet the needs of learners and society.

According to the regulations, in the quality assurance activities of higher education institutions, obtaining feedback from students is a necessary activity to ensure the quality of education in Vietnam (Ministry of Education and Training, 2016; Ministry of Education and Training, 2024). To assess student satisfaction with the quality of education, numerous factors have been identified, including physical facilities, curriculum, administrative organisation, student support activities, personnel, and lecturers (Ministry of Education and Training, 2016; Ministry of Education and Training, 2024).

Previous studies have explored undergraduate student satisfaction with the quality of education in Indonesia (Wiranto & Slameto, 2021), Malaysia (Jamari, 2021), Mexico (Cervantes López), China (Bao *et al.* 2021), and within the healthcare education sector. There have been studies evaluating student satisfaction at public healthcare education institutions in Vietnam, such as those conducted by Ninh Thi Kim Loan (Ninh, 2023), Nguyen Truong An (Nguyen *et al.* 2023), Tran Ba Kien (Tran *et al.* 2023) etc. However, no specific studies have yet evaluated the satisfaction of bridging pharmacy students at private educational institutions in Vietnam.

Compared to public institutions, private ones may exhibit significant differences in terms of facilities, student support policies, and management models. These factors have the potential to influence students' learning experiences and satisfaction. However, there remains a lack of specific research on these differences. To address this gap, this study was conducted to assess the satisfaction of final-year pharmacy students with the quality of pharmacy education at a private university in Vietnam. This study was conducted to identify the key factors influencing final-year pharmacy students' satisfaction with the quality of pharmacy education at a private university in Vietnam. It also represents the first step in developing and validating a scale for assessing student satisfaction, providing a reference database for educational institutions to improve training quality and better meet the needs of learners.

Overview of higher education quality and student satisfaction

The quality of higher education is a crucial factor determining the development and success of educational institutions. This quality is not only assessed from the university's perspective but is also closely linked to evaluations from various stakeholders,

including parents, students, employers, and lecturers (Svoboda & Cerny, 2016). Among these, student satisfaction plays a central role, reflecting the effectiveness of the training process and the extent to which the university meets the learning needs and expectations of students (Jereb *et al.*, 2018).

Factors influencing student satisfaction

Student Support Activities (SSA)

SSA play a crucial role in creating a conducive learning environment and addressing the issues students face. These activities encompass not only academic support but also psychological counselling, career guidance, and other student services (Siming *et al.*, 2015). When students receive adequate and timely support, they feel more secure and satisfied with their learning environment.

Training programme (TP)

The training programme is considered a core factor in ensuring the quality of education. It includes courses, teaching methods, and assessment systems, all of which affect the process of students acquiring knowledge and skills. A good training Programme needs to meet the practical needs of the profession and be updated according to the developmental trends of society and science and technology (Han *et al.*, 2023). Therefore, if the training Programme has a clear structure and is relevant to real-world applications, it will enhance student satisfaction, help them become more confident during their studies, and better prepare them for future careers (Lee & Rha, 2009).

Quality of facilities (QF)

Facilities are an essential factor supporting the learning and research processes of students (Alashwal, 2020). Modern and well-equipped facilities allow students to easily access learning, practical, and research resources, thereby improving their academic results and overall satisfaction (Hanssen & Solvoll, 2015). Studies have shown that students often highly value universities with modern and well-invested facilities, as this provides them with a safe and comfortable learning environment, thereby enhancing satisfaction (Hanssen & Solvoll, 2015).

Teaching staff (TS)

Lecturers play a vital role in imparting knowledge and providing career guidance to students. According to studies, lecturers are not only knowledge instructors but also act as supporters and motivators for students during their learning process (Endo & Harpel, 1982;

Elsharnouby, 2015; Xiao & Wilkins, 2015). The quality of the teaching staff, including professional qualifications, pedagogical skills, and enthusiasm for teaching, are all factors that strongly impact student satisfaction. When students feel cared for and supported by lecturers, they will have better learning motivation and feel more satisfied with their educational experience (Elsharnouby, 2015; Kulkarni *et al.*, 2018).

Proposed research model

Based on the above descriptions, the research team has proposed a model that includes four independent factors influencing pharmacy students' satisfaction with the quality of education: Quality of Facilities, Training Programme, Teaching Staff, and Student Support Activities. These factors were chosen based on their comprehensive impact on the educational experience, supported by theoretical frameworks and empirical evidence.

Method

Research design

A cross-sectional study was conducted on final-year students of the 13th cohort of the Pharmacy Programme at Thanh Do University, Vietnam from October 2023 to December 2023. This study focuses on final-year students in the Pharmacy Programme at Thanh Do University who are enrolled in the regular system transferring from college to university. A distinctive characteristic of these students is that they study in a work-study format (transfer study), with class times primarily occurring outside standard working hours. Specifically, classes are held on weekday evenings and all day on Saturdays and Sundays. This arrangement allows students to engage in learning while continuing to work in the healthcare sector. Consequently, most students participating in this study are individuals who already have work experience in the industry and are completing their university degrees to enhance their professional qualifications.

The selection criteria included final-year students of the 13th cohort preparing to graduate and agreeing to participate in the study. Exclusion criteria included students not part of the final-year cohort (13th cohort) of the Pharmacy Programme at Thanh Do University, students on academic leave, or students who had already completed the pre-test. The census sampling method was employed in this study to ensure maximum accuracy. The survey questionnaire was designed in both online and offline formats. For offline

surveys, the researchers (comprising three individuals) conducted direct surveys at Thanh Do University. The survey duration for each student was five to ten minutes. Completed questionnaires were collected and checked for validity; those that did not fully complete all questions or had responses contrary to the instructions were excluded from the data analysis. For online surveys, students were sent the Google Form link for each class group via the Zalo chat application (a popular social network in Vietnam that allows sending messages and survey links to large groups of members). Survey results were exported to Excel, and data cleaning was then performed using SPSS software. Following the survey process, 456 questionnaires were collected, with ten questionnaires excluded, leaving 446 questionnaires for data analysis. This sample size is sufficient for exploratory factor analysis (EFA) (Hoang, 2008).

Data processing and analysis

The data collected from the survey forms were cleaned, encoded, and entered into SPSS 20.0 software. Descriptive statistics were used to calculate the frequencies, and percentages of demographic variables (Gender, Major, Employment status) to provide basic characteristics of the research sample. Additionally, the mean values and standard deviations of the survey responses were calculated. The reliability and validity of the scale-constructed questionnaire were assessed through Cronbach's alpha coefficient (CA) and Exploratory Factor Analysis (EFA).

Variables with inter-item correlation coefficients less than 0.3 were considered redundant and removed from the scale, and the scale was accepted if Cronbach's Alpha coefficient met the requirement (> 0.6). Factor Analysis was evaluated using EFA, Principal Components Extraction, and Varimax Rotation methods. Factors were considered acceptable if the Factor Analysis coefficient was greater than 0.5; eigenvalues were greater than 1; the extracted variance reached over 50%; Kaiser-Meyer-Olkin (KMO) coefficient was greater than 0.5; and Bartlett's test had a *p*-value (sig.) less than 0.05. Linear regression analysis was conducted to identify factors influencing students' satisfaction with the quality of education. The dependent variable was overall satisfaction with the quality of education (measured on a 5-point Likert scale), while the independent variables represented factors identified in the factor analysis (continuous variables).

Questionnaire development

Learning is an ongoing and obligatory process in which each student will have different satisfaction such as

personality tutoring, personal values, and personal fulfilment. This paper focuses on exploring the relationship between student satisfaction and (1) Quality of Facilities (QF), (2) Training program (TP), (3) Teaching staff (TS), and (4) Student Support Activities (SSA) provided by the institution. Further exploration is also on the overall satisfaction with the quality of education. The data collection instrument is a set of questionnaires which is built up and developed based on investigating previous studies by Tran and colleagues (2023), Do and colleagues (2016), and Wiranto & Slameto, (2021). In other words, questionnaires are developed and generated as follows:

Step 1: Construct a preliminary questionnaire based on a literature review; this first version comprises 38 items (three demographic questions, 34 evaluation items regarding the quality of education, and one overall satisfaction item regarding the quality of education).

Step 2: Pre-test with 40 students (20 interviewed in person, 20 surveyed online via Google Form). The participants in the pre-test were not recruited for the official research to maintain the objectivity of the data.

Step 3: Finalise the questionnaires; this version comprises 37 items assessed on a 5-point Likert scale divided into three sections. Section one (33 questions) aimed to get information on four factors – QF, TP, TS, and SSA. Section two included one question assessing overall satisfaction with the quality of education. Section three encompassed demographic characteristics of the students, including questions about gender (male and female), year of birth, and employment status (working in the healthcare sector, working outside the healthcare sector, unemployed). The final-year students who participated in this study did so entirely voluntarily and were fully informed about the purpose of the research. Participation in the survey did not affect their academic performance or graduation, and their anonymity was guaranteed. The questionnaire received approval from Thanh Do University before the commencement of the study.

Research ethics

All participating students were informed and provided with a clear explanation of the purpose and content of the study, ensuring voluntary participation. The collected information was encoded and kept confidential for research participants.

Ethics approval

This study was approved by the University Board of Directors of Thanh Do University.

Results

Socio-demographic characteristics of students

The study was conducted on 446 valid survey responses that met the selection criteria. Initially, the survey was sent to 534 students, and 456 responses were received, yielding a response rate of 85.4%. After data cleaning and processing, 446 valid responses were included in the analysis, resulting in a final response rate of 83.5%. The results of students' demographic characteristics are presented in Table I. Regarding gender, most participants were female (85.9%), outnumbering male students by approximately five times. The average age of enrolled students was 37.03 (the youngest student was 24 years old, and the oldest was 63 years old). Regarding employment status, most surveyed students worked in the healthcare sector (91.7%), with only 6.1% currently employed outside the healthcare sector, and 2.2% unemployed (Table I).

Table I: Socio-demographic characteristics of the students (N = 446)

Variables	Parameter	N (%)
Gender	Male	63 (14.1%)
	Female	383 (85.9%)
Age	Average (min-max)	37.03 (24–63)
Employment status	working in the healthcare sector	409 (91.7%)
	working outside the healthcare sector	27 (6.1%)
	unemployed	10 (2.2%)

Exploratory factor analysis

Testing Scale Reliability: The observed variables within the scale were tested for reliability using CA before conducting EFA. The reliability testing results of the scale showed that for the 33 initial observed variables, after testing the CA coefficient, all of these variables met the conditions: 1) CA coefficients of the scales ranged from 0.934 to 0.956, satisfying the reliability requirement (> 0.6); 2) The inter-item correlation coefficients of the observed variables within the scales were all greater than 0.3, thus meeting the reliability criterion; 3) The CA coefficient of the scale would decrease if any observed variable was excluded (Hoang, 2008).

The first exploratory factor analysis for the 33 observed variables showed a KMO coefficient of 0.968, meeting the condition $0.5 \leq KMO \leq 1$. This result indicates that the observed variables in the overall set are correlated, and the EFA is acceptable for the research data. Bartlett's test (Sig. = 0.000 < 0.005) confirmed the

suitability of factor analysis. The Eigenvalues were $1.020 \geq 1$, and the total variance extracted with the extraction method, factor analysis extracted four factors from 33 observed variables with an extracted variance of 74.116% ($\geq$ 50%), meeting the requirement. The first exploratory factor analysis showed that variable CT18, "*Allocation of courses in the Programme is reasonable*" had a loading coefficient lower than 0.5, so the variable was excluded, and the EFA was conducted for the second time.

The result of the second exploratory factor analysis for the remaining 32 variables showed KMO coefficient = 0.967 ($0.5 < KMO < 1.0$) and Bartlett's test with a statistically significant level of Sig. = $0.000 < 0.05$ indicated that the observed variables in the overall set correlated, and the EFA is appropriate. Eigenvalues were $1.019 > 1$, and the total variance extracted with the extraction method was 74.431%, meeting the requirement. Thus, after two rounds of factor analysis, it was found that four main factors were extracted, namely: (Factor 1: Student support activities (SSA); Factor 2: Quality of Facilities (QF); Factor 3: Teaching staff (TS); Factor 4: Training Programme (TP)) (Table II).

Table II: Results of second Exploratory Factor Analysis (EFA)

Code	Content	Factors				Mean
		1	2	3	4	(SD)
SSA28	Support staff exhibit appropriate and friendly demeanour towards learners.	0.741				4.02 (0.7)
SSA33	The procedure for course registration and examination enrolment is straightforward, simple, and easily executable.	0.736				4.07 (0.667)
SSA27	The organization of training facilitates favourable conditions for students.	0.732				3.97 (0.717)
SSA31	The administration of assessments and examinations is tailored to suit the nature of each course.	0.726				4.0 (0.709)
SSA30	Study time is appropriately distributed.	0.706				3.84 (0.796)
SSA32	Students are promptly notified and provided with comprehensive regulations regarding their education, along with relevant information such as class schedules, exam schedules, course registration schedules, and graduation defence schedules	0.699				4.14 (0.623)
SSA29	The number of students allocated to each class is reasonable.	0.688				3.95 (0.748)
SSA26	Department and university management staff demonstrate appropriate, friendly attitudes, and satisfactorily address the needs of learners.	0.667				4.05 (0.699)
SSA25	The university emphasizes receiving feedback from students regarding the quality of educational services provided at the institution.	0.633				3.86 (0.788)
TP17	Information about the training Programme is thoroughly communicated to the students.	0.546				4.0 (0.715)
QF5	The library provides a diverse range of reference materials to serve academic purposes.		0.806			3.51 (0.894)
QF7	Accessing the school library's information system is convenient.		0.796			3.56 (0.905)
QF6	The library offers spacious, clean, and adequately seated areas.		0.788			3.58 (0.886)
QF3	Chemicals are provided in sufficient quantity to meet the requirements of practical experiments.		0.631			3.76 (0.828)
QF2	The laboratory is fully equipped with modern facilities to serve both learning and research purposes.		0.612			3.77 (0.8)
QF9	The health care department meets the needs of students' health care.		0.612			3.75 (0.817)
QF8	The university's website provides diverse and up-to-date information		0.598			3.91 (0.793)
QF4	The study materials have clear, accurate, and easy-to-read content.		0.591			3.9 (0.771)
QF1	The lecture halls are spacious, and well-ventilated, with ample seating, and the lighting meets the students' study needs.		0.52			3.85 (0.753)
TS20	Lecturers prepare their lectures meticulously			0.837		4.25 (0.654)
TS22	The lecturers understandably convey the lecture content.			0.817		4.22 (0.677)
TS21	The lecturers respect the students.			0.813		4.32 (0.616)
TS19	The lecturers have a broad and in-depth understanding of the subjects they teach			0.787		4.25 (0.635)
TS23	Lecturers prioritise the development of students' self-learning abilities in their teaching			0.735		4.16 (0.667)

| Code | Content | Factors | | | | Mean |
		1	2	3	4	(SD)
TS24	Lecturers employ objective, suitable, and equitable assessment methods to evaluate students.			0.67		4.19 (0.639)
TP10	The training Programme is designed to meet the needs of the students.				0.764	3.72 (0.953)
TP13	The training Programme content is beneficial for students.				0.744	3.8 (0.879)
TP16	The amount of knowledge in specialised subjects is appropriate to meet the needs of the students.				0.687	3.8 (0.852)
TP15	The amount of knowledge in foundational courses in the field meets the needs of the students.				0.676	3.64 (0.981)
TP14	The volume of knowledge in the training Programme is suitable for the duration of the training.				0.67	3.84 (0.798)
TP11	The objectives of the training Programme are clear.				0.632	3.95 (0.767)
TP12	The distribution ratio of theory and practical components in the courses is appropriate.				0.593	3.89 (0.83)
	Overall satisfaction					3.89 (0.731)
	Eigenvalues	19.173	2.259	1.368	1.019	
	Cronbach's alpha	0.934	0.942	0.956	0.955	
	% of variance	59.915	7.059	4.274	3.183	

*(QF: Quality of Facilities; TP: Training Programme; TS: Teaching Staff; SSA: Student Support Activities)

Multivariate regression analysis

The adjusted R-squared coefficient, used to assess the model's fit, is 0.701, which is greater than 0.5, meaning that 70.1% of the variation in the dependent variable (Student Satisfaction) is explained by the variation in the four independent factors: TP, TS, SSA, QF, while the remaining 29.9% represents variables outside the model and random error. Analysis of variance shows that the F-value is significant with Sig = 0.000 < 0.005, indicating that the linear regression model is appropriate for the collected data, and the variables included are statistically significant at a 5% level of significance (95% confidence). Thus, it can be concluded that the regression model was significant, and all independent variables impacted student satisfaction.

The results of the regression analysis show that the Variance Inflation Factor (VIF) of the independent variables reaches a maximum value of 1.000 (less than ten), indicating that these independent variables are not closely related to each other, so there is no multicollinearity phenomenon occurring, demonstrating that the regression model does not violate the assumption of multicollinearity. Therefore, the relationship between independent variables does not significantly affect the explanatory results of the regression model (Table III).

Table III: Linear regression analysis results of student satisfaction

| Model | | Unstandardised coefficients | | Standardised coefficients | *t* | Sig. | Collinearity statistics | |
		B	Std. error	Beta			Tolerance	VIF
1	Constant	3.891	0.020		199.460	0.000		
	Student support activities	0.373	0.020	0.516	19.131	0.000	1.000	1.000
	Quality of facilities	0.280	0.020	0.387	14.356	0.000	1.000	1.000
	Teaching staff	0.228	0.019	0.315	11.670	0.000	1.000	1.000
	Training programme	0.314	0.020	0.434	16.085	0.000	1.000	1.000

The dependent variable is the student satisfaction; SD: Standard Deviation; VIF: Variance Inflation Factor

The regression model meets the conditions for drawing research conclusions. The factors' regression coefficients (β or Beta) were positive, indicating that the independent variables positively affected student satisfaction. The standardised regression equation shows the factors influencing student satisfaction as follows:

Student satisfaction = 0.516*SSA + 0.387*QF + 0.315* TS + 0.434*TP

The standardised regression equation informs us about the strength of the independent variables' impact on student satisfaction. The larger the absolute value of the Beta coefficient of a variable, the stronger its impact on student satisfaction. The degree of influence of the four factors on student satisfaction is illustrated in Figure 1.
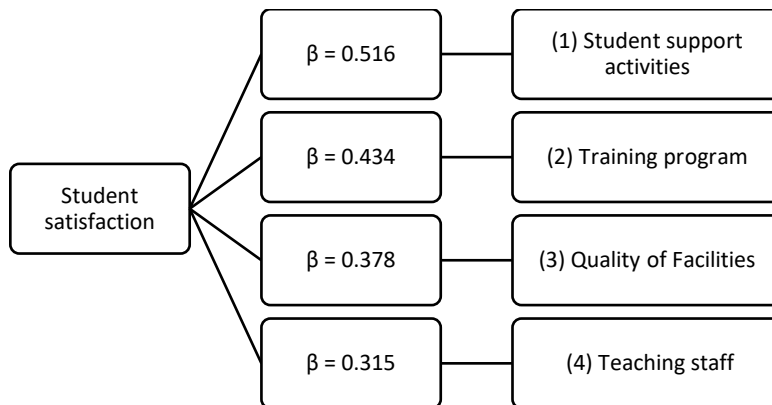

Figure 1: Influence of each factor on overall student satisfaction

Figure 1 displays the results of the multivariate regression analysis concerning the relationship between the four extracted factors and the overall students' satisfaction regarding the quality of education. All factors exhibit a positive impact on student satisfaction. Among them, the factor "*Student Support Activities*" has the strongest influence on student satisfaction, followed by the "*Curriculum*" factor, "*Infrastructure*" factor, and finally, the "*Faculty*"

factor, which has the weakest impact on student satisfaction with the quality of education.

Satisfaction assessment

Overall, students are quite satisfied with the quality of pharmaceutical education, with an average score of 3.89 (SD = 0.731). The percentage of students satisfied with the quality of education is 70.4% (Figure 2).
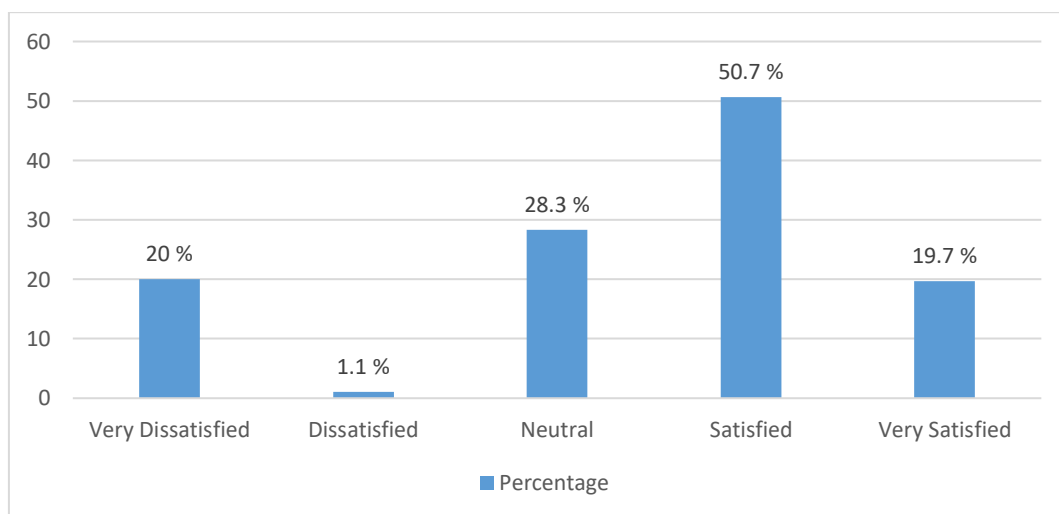

Figure 2: Student satisfaction evaluation results on the quality of education

Discussion

In general, student satisfaction with the quality of education in the Pharmacy Programme is influenced by four main factors: Quality of Facilities (QF), Training Programme (TP), Teaching staff (TS), and Student Support Activities (SSA). Among these, "*Student Support Activities*" has the strongest impact. This finding differs from the research conducted by Pham (2016) and Vo (2017), where the "*Training Programme*" factor had the greatest influence (Phạm, 2016; Vo, 2017). However, as these studies used different measurement scales, comparing their results remains relative and cannot lead to absolute conclusions.

Factor 1: Student Support Activities (SSA)

Student Support Activities (SSA) play a vital role in enhancing the learning experience and improving educational quality. The study results show that SSA has the most significant impact on the quality of education in the Pharmacy Programme at Thanh Do University, with a high level of satisfaction, achieving an average score of 3.99.

Compared to previous studies in Vietnam, the satisfaction level for student support activities at Thanh Do University is higher than at some other educational institutions. Specifically, a study at Hai Duong Central College of Pharmacy reported a satisfaction score of 3.48 (Tran *et al.*, 2023), while a study at Hanoi University of Pharmacy found a satisfaction score of 3.91 among postgraduate students (Tran, 2014). Thus, SSA at Thanh Do University is rated considerably higher than other institutions, particularly public universities in Vietnam. One possible explanation for this difference is that public universities often face limited resources and funding for SSA, which reduces the effectiveness of the support provided. In contrast, Thanh Do University strongly emphasises student support activities. The university regularly organises training Programmes for administrative staff on culture, communication, and psychology to enhance their professional skills in serving students.

Additionally, the university hosts various educational, recreational, and entertainment activities to help students relax after class and boost their morale. For students in difficult circumstances, the university is willing to offer tuition waivers or reductions, allowing them to continue their studies

Factor 2: Training Programme (TP)

The Training Programme (TP) plays a decisive role in ensuring the quality of education and the outcomes for students. The student satisfaction with the TP at the institution (Mean = 3.81) is described, and regression analysis results indicate that the TP is the second most influential factor on student satisfaction, only behind "*Student Support Activities*". Compared to previous studies, the satisfaction level with the TP at Thanh Do University is lower than that of a study conducted at Tay Nguyen University in 2023 (Mean = 3.91) (Ninh, 2023) but higher than the study conducted at Hai Duong College of Pharmacy (Mean = 3.66) (Tran *et al.*, 2023). This suggests that while the Pharmacy TP at Thanh Do University has partly met student expectations, there is room for improvement to enhance satisfaction. Improving and updating the TP is essential to meet the needs of stakeholders. This will ensure the programme remains aligned with labour market demands and equips students with the necessary skills after graduation. Educational institutions must consider feedback from stakeholders to continuously innovate and refine their Programmes, ensuring that the quality of education is comprehensively improved.

Factor 3: Quality of Facilities (QF)

Quality of Facilities (QF) is an indispensable factor in students' learning process and skill development. The research results show that students are moderately satisfied with the QF (Mean = 3.73) (Table II). Among these, students expressed the highest satisfaction with criterion QF8, "*The university's website provides diverse and up-to-date information.*" This reflects the organisation's efforts to maintain updated information across communication channels in the era of Industry 4.0. The level of student satisfaction with QF at the Faculty of Pharmacy, Thanh Do University, was higher than in a previous study at Tay Nguyen University, Vietnam (Mean = 3.61) (Ninh, 2023). In contrast, a study by Tran *et al.* (2023) at Hai Duong Medical College, Vietnam, reported a higher rating for QF (Mean = 3.85) (Tran *et al.*, 2023). This difference may be related to the specific facility conditions at each educational institution. Today, with the rapid economic and social development, technological advancements are driving an increasing demand for infrastructure within educational institutions. Therefore, pharmacy training institutions must continue to invest in and improve their infrastructure to meet the growing needs of students.

Factor 4: Teaching Staff (TS)

The Teaching Staff (TS) plays a pivotal role in delivering knowledge and skills to students. The study results (Table II) indicate that, among the four factors influencing student satisfaction with educational quality, the TS received the highest level of satisfaction

(Mean = 4.23), making it the most positively rated factor (Table II). Among the six items (TS19 to TS24), the two highest-rated criteria were TS21, "*Teachers respect students*," and TS20, "*Teachers meticulously prepare their lessons.*" These findings underscore the value students place on the teaching quality of the TS, reflecting Thanh Do University's ongoing efforts to improve instructional quality.

In practice, the university maintains rigorous standards for faculty recruitment, and after hiring, faculty members undergo advanced training to enhance their expertise and pedagogical skills. When compared to previous studies, the mean score for TS at Thanh Do University (4.23) is higher than at Tay Nguyen University (Mean = 3.61) (Ninh, 2023), Thai Binh University of Medicine and Pharmacy (Mean = 2.61) (Le, 2020b), and Hanoi University of Pharmacy (Mean = 4.2) (Hoang, 2019), and also higher than the result at Hai Duong Medical College (Mean = 3.97) (Tran *et al.*, 2023).

In contrast, a study at Vietnam National University, Hanoi (Pham, 2016) found no significant relationship between TS and student satisfaction. This highlights the need for further research to determine the precise impact of this factor on student satisfaction. While the TS received highly favourable evaluations, there remains a need for continued professional development and practical experience to meet the increasingly demanding requirements of modern education. Faculty should diversify their teaching methods to enhance flexibility and improve learning outcomes. Moreover, as key representatives of the institution's reputation, investing in the ongoing development of the TS is a critical strategy to elevate the institution's standing and ensure continuous improvement in educational quality.

Limitations

Despite achieving the research objectives, the study still has several limitations. Firstly, apart from the four factors evaluated, there may be other factors influencing the quality of education that the author did not investigate. Therefore, future research should delve deeper to identify new factors affecting student satisfaction with the quality of pharmaceutical education at the university. Secondly, due to resource constraints, the study only focused on students from the 13th cohort transfer Programme without surveying students from other cohorts or students at different universities.

Finally, this study was a voluntary survey, no students who declined participation were included. However, some students may have felt reluctant to participate, possibly due to concerns that the faculty members

distributing the survey (both online and offline) could influence their academic results. To mitigate this, anonymity was ensured, and no detailed personal information was collected during the study.

Conclusion

This study was conducted on 446 final-year pharmacy students at Thanh Do University (Using a 5-point Likert scale) to identify the factors influencing student satisfaction with the quality of education at the School of Pharmacy. The results of the study revealed that four main factors influence the quality of education at the institution, including 1) Student support activities (β = 0.516); 2) Training Programme (β = 0.434); 3) Quality of Facilities (β = 0.378); 4) Teaching staff (β = 0.315). These factors collectively accounted for 70.1% of student satisfaction with the quality of education at the university. Notably, while the " *Teaching Staff* " factor received the highest satisfaction rating (Average = 4.23), "*Student Support Services*" had the greatest impact on overall satisfaction.

On the other hand, "*Quality of Facilities*" was the factor students were least satisfied with (Average = 3.73). These findings suggest that to improve the quality of education at the Faculty of Pharmacy, it is essential to continue enhancing student support services and the curriculum while investing in upgrading facilities to better meet student needs. The results of this study serve as an important reference for administrators in shaping strategies to improve the quality of education at Thanh Do University in the future.

Conflict of Interest

The authors declare no conflict of interest.

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