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Factors Influencing Ethnic Minority Students' Programme Development Capacity: Case Study at Pedagogical Universities in Vietnam

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Abstract. Educational programme development capacity is one of the indispensable competencies of teachers today. This competency should be developed early on for students enrolled in pedagogical universities. In this regard, ethnic minority students need more attention than ethnic majority students. The goal of this study was to look into the various factors that affect the ability of ethnic minority students enrolled in pedagogical universities in Vietnam to develop educational programmes. This was done in order to assist ethnic minority students and their parents, which necessitated pedagogical universities as well as administrators having a scientific foundation in studying and training students to meet the requirements of society. In this study, a quantitative research methodology was employed. Data were collected from a sample of 324 students using a survey (from March 13 to 27, 2023). Cronbach's Alpha test (α) and Exploratory Factor Analysis (EFA) techniques were used to evaluate and build the scales. The reliability and construct validity of the scales were also assessed using Cronbach's α and EFA respectively. Multiple linear regression was also used to determine the variables that affect students' ability to design programmes. The findings of the research indicated that there were four groups of factors that affected students' programme development capacity: individual factors, family factors, school factors and social factors. Among these, family factors were found to exert the greatest influence (Beta coefficient equal to 0.556), while social factors had the smallest impact (Beta coefficient equal to 0.276) on students' programme development capacity. The research results provide a scientific basis for the development of programmes and policies to support ethnic minority students, enhance

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their educational capacity and meet the objectives of general education in Vietnam.

Keywords: capacity; programme development; ethnicity; teaching programme; students

1. Introduction

Teacher education and training in Vietnam has undergone many changes to meet the innovation requirements of the times. Vietnam boasted a diverse range of teacher training systems as of 2021. Programmes ranged from the 10+2 system for preschool and primary educators, to college and university pathways for secondary to high school educators. Additionally, there are postgraduate programmes to advance teacher qualifications and support scientific research (Nam, 2021). Currently, because of the innovation requirements of the profession, the 10+2 training system is no longer available and the number of students studying at pedagogical colleges is also decreasing. Vietnam has built and planned a network of pedagogical schools in three regions, including eight key universities, namely: Hanoi National University of Education; Hanoi Pedagogical University; Thai Nguyen University of Education; National Academy of Education Management (Northern region); Vinh University; University of Education - Hue University; The University of Danang - University of Education (Central region); and the Ho Chi Minh City University of Education (Southern region). Pedagogical universities are responsible for educating and nurturing individuals to enhance the abilities of teachers and educational leaders for the whole country (Nam, 2021). In pedagogical universities, faculties would be in charge of different training tasks: Preschool faculty trains preschool teachers, Primary school faculty trains primary school teachers, and basic faculties trains secondary and high school teachers (Tuyen, 2019). The training period of the universities is four years. The training programmes of the universities are different, but all have modules related to programme development (Hiep & Huong, 2016).

Currently, Vietnam is in the early stages of implementing a new general education programme that began in the academic year 2021–2022. This programme was built according to the quality and capacity approach, replacing the previous content-oriented programme (Vietnam Ministry of Education and Training, 2018). Because of this change, training objectives of pedagogical universities needed be changed to meet the requirements of the roles and duties of teachers in the new context (Serdenciuc, 2013). Required capacities of teachers include field capacity, research capacity, programme development capacity, lifelong learning capacity, sociocultural capacity, emotional capacity, communication capacity and information and communication technology capacity (Kiymet, 2016). In Vietnam, programme development capacity is one of the five criteria for evaluating teachers' expertise and professionalism (Vietnam Ministry of Education and Training, 2018). Thus, in training teachers, it is necessary to pay attention to development of capacities including programme development capacity (Stewart et al., 2013). In order to meet such a requirement, pedagogical universities have begun to focus on and increase the study time for the modules related to

programme development capacity. This contributes to maintaining the quality of training, enabling students to grasp essential knowledge and skills proficiently, design context-appropriate programmes, and fulfill the demands of innovative teacher education (Vinh & Nam, 2019).

"Ethnicity implies one or more of the following: shared origins or social background; shared culture and traditions that are distinctive, maintained between generations, and lead to a sense of identity and group; and a common language or religious tradition" (Senior & Bhopal, 1994, p. 327).

> *Ethnic minorities are ethnicities with a population smaller than the ethnic majority in the territory of the Socialist Republic of Vietnam. The ethnic majority is the ethnicity whose population accounts for more than 50% of the total population of the country, according to the national census. (Dung, 2011, p. 1).*

Vietnam is a multicultural country with 54 ethnicities, of which the Kinh people account for the majority of 85.3% (84,386,937 people). The rest are 53 ethnic minorities comprising 14.3% (14,119,256 people) (Statistical Office of Vietnam, 2020). The common feature of ethnic minorities is that most of them are concentrated in border, mountainous and remote areas with difficult economic conditions, limited education and a lack of health care. Ethnic minority communities often find it difficult to integrate because they use their own language, have limited awareness, and have many old-fashioned customs (Cuong, 2019). Some large ethnic minorities include the Tay, Thai, Muong, Mong, Dao and Khmer. Each of these ethnicities has its own unique culture, language and traditions. The distribution of population of ethnic minorities in Vietnam is not uniform across the country. The Statistical Office of Vietnam (2020) reports notable population distributions among ethnic groups in specific provinces. The Tay, with approximately 1.9 million people, predominantly reside in northern provinces like Cao Bang and Lang Son, while the Thai and Muong populations of about 1.8 million and 1.3 million are chiefly found in the northwest and provinces like Thanh Hoa respectively. The Mong, Dao and Khmer communities, with populations ranging from 0.8 to 1.3 million, are mainly located in provinces such as Lao Cai for the Mong and the western and southern regions of the Khmer.

2. Literature Review

2.1. Teaching Programme development capacity

Programme development capacity is the ability to effectively modify, supplement, design, develop and implement educational programmes (Vinh & Nam, 2019). This capacity includes skills to survey the educational context, assess the educational needs of learners; identify learning objectives, select educational content, design appropriate methods and forms of education, and evaluate and measure the effectiveness of education quality (Loan, 2020). Students of pedagogical universities need to have programme development capacity as it is an important requirement to become a teacher (Hiep & Huong, 2016). In order to obtain programme development capacity, students need in-depth knowledge on teaching methods; methods of testing and assessment; ability to investigate the practical context and skills of communication; teamwork; and flexibility to come up with appropriate solutions for specific educational problems (Vinh & Nam, 2019).

When pedagogical students have obtained programme development capacity, they can be confident and flexible in designing and implementing educational plans, easily adapt to changes and new educational needs in the future, and meet the requirements and expectations of society for the education sector (Garcia & Lewis, 2014).

The inculcation of programme development capacity for students is an important task of pedagogical universities (Vinh & Nam, 2019). Students with good programme development capacity will have good teaching capacity. By studying modules related to programme development, students can learn the skills to design educational plans. According to Garcia and Lewis (2014), students often lack experience in the use of educational programme development methodologies. Lan and Thao (2016) emphasise the importance of mastering educational programme knowledge and fostering group-work and communication capacities. Notably, there is variability in students' proficiency with these methods, and some lack confidence in participating in such programme development (Cuong, 2019; Hiep & Huong, 2016). In order to improve programme development capacity and its application in practice, students may take courses on skills in educational planning (Loan, 2020) and participate in seminars and regular classroom activities on programme development (Vinh & Nam, 2019). Universities also need to regularly adjust training programmes of modules related to teaching programme development. During the training process, pedagogical universities should have policies to pay attention to educational activities that help students gain experience, practise teaching to gain confidence, have a clear career orientation; and develop soft skills. It is the foundation for them to actively develop programmes when they become teachers (Shawer, 2017).

In fact, many general education teachers are not qualified in teaching programme development. Therefore, universities need to determine the task of training and regularly fostering programme development capacity for teachers (Hiep & Huong, 2016). In particular, it is necessary to pay attention to the creation of teaching programmes in accordance with the standards of new knowledge and skills to meet practical requirements; establish a teacher support system; strengthen scientific research activities; guide teachers to design programmes of learning experiences; and exchange experiences between schools to improve programme development capacity for teachers (Serdenciuc, 2013).

In order to improve programme development capacity, general education schools should have policies to encourage teachers to be interested in this work. Programme development is like a lever promoting teaching activities in classroom (Burkhauser & Lesaux, 2017; Serdenciuc, 2013). In order to successfully develop a programme, teachers must be the ones who directly research, design and implement, because they understand the educational philosophy and goals; have experience in learning, mastering learning resources and educational quality assessment tools; and implement individual plans according to the programme they develop (Alsubaie, 2016).

2.2. Regime and Policy on Ethnic Minority Students

Based on the challenges faced by ethnic minority communities, the Vietnamese government has prioritised socioeconomic, cultural and educational development in regions with significant ethnic minority populations. This emphasis aims to foster equity and consistent development throughout the nation (Tuyen, 2019). The Ministry of Education and Training of Vietnam has coordinated with relevant ministries and sectors to issue legal documents and start projects to implement policies on education and training development in ethnic minority areas (Lan & Thao, 2016). In Vietnam, there are over 1,200 boarding and semi-boarding schools for ethnic minorities across various levels and provinces, along with pre-university institutions serving over 4,000 pupils annually. This system of schools is being consolidated and developed (Cuong, 2019). Children, pupils and students of ethnic minorities in highland, remote areas, border areas, islands and areas with extremely difficult socioeconomic conditions have rights in terms of policies such as the scholarship policy; the study support policy (support money, rice and some other support policies); the policy on exemption and reduction of tuition fees; the social welfare policy; and the policy on prioritising admission, direct admission, pre-university and university enrollment (Dung, 2011).

At the beginning of the learning process, there is not much difference between ethnic majority students and ethnic minority students in terms of the ability to receive and acquire knowledge and skills (Osborne, 2001). However, in the learning process from primary school to university, ethnic minority students score lower, gain fewer credits; the proportion of ethnic minority students receiving rewards is lower, and their failure potential is 2.5 times higher than that of the majority ethnic students (Stevens et al., 2011; Woolf et al., 2011). So, what factors affect the learning ability of ethnic minority students?

Ethnic identity factors such as culture, language, customs and traditions have an influence on the capacity of ethnic minority students (Lan & Thao, 2016). Cultural identity includes the values, ideas, behaviours, attitudes and lifestyles of a community. These values and ideas are passed down from generation to generation through education, family and society. Cultural identity affects students' capacity in many ways such as complex problem solving, creative thinking, communication skills, learning methods and access to knowledge (Gonzalez et al., 2013).

In addition, motivation is also an important factor affecting the capacity of ethnic minority students. It is closely related to learning outcomes. Students who are not motivated will not be interested in learning and the results will not be as expected (Isik et al., 2018; Kusurkar et al., 2013; Ryan & Deci, 2000). There are quite obvious differences in intrinsic and extrinsic motivation between ethnic minority students and ethnic majority students (Martin, 2012). Ethnic majority students show a higher degree of intrinsic motivation than that of ethnic minority students. In contrast, ethnic minority students need a higher level of extrinsic motivation. Understanding this can help close the achievement gap between ethnic minority students and ethnic majority students (Dennis et al., 2005).

Gender is also a factor affecting the learning capacity of ethnic minority students (Cuong, 2019; Kfir, 1988). Male students generally do better in science, math and

technology, while female students generally do better in social studies, languages and arts (Cuong, 2019). However, this difference is not absolute because it depends on many other factors such as learning environment, teaching methods, material conditions, psychology, effort and passion of each individual. Education must respect and evaluate each student's true ability, regardless of gender or any other factor (Bembenutty, 2007). In addition, other non-ethnic factors, such as socioeconomic background, also influence the academic ability of ethnic minority students (Fischer, 2010; Mallett et al., 2011; Stegers-Jager et al., 2012).

To enhance the cognitive assimilation and integration capacity of students from ethnic minorities, it is suggested to establish educational settings with a multicultural orientation that incorporates scientific curricula. In such an environment, the student assumes a central role. There is an emphasis on fostering collaborative efforts and teamwork. Resources rooted in culture and the community are amalgamated. Scientific topics are contextualised within the socio-political framework and real-world situations of the community (Brown & Livstrom, 2020; Lan & Thao, 2016). Fully equipped with skills, knowledge and educated in a multicultural environment, ethnic minority students can overcome barriers to success in studying. The conservation and advancement of ethnic identity also helps students in comprehending and empathising with their inherent cultural values, customs and traditions. This, in turn, cultivates a disposition toward respecting and treating others with consideration, culminating in the establishment of a conducive atmosphere for learning and professional engagement (Cuong, 2019; Tuyen, 2019).

It can be seen that the factors identified as having an influence on the capacity of ethnic minority students are ethnic identity, motivation, gender and other non-ethnic factors. However, up to now, the factors affecting the programme development capacity of ethnic minority students in pedagogical universities have not been considered. On that basis, we conducted a study on the factors affecting the programme development capacity of ethnic minority pedagogical students in pedagogical universities in Vietnam. The study aims to answer the following questions: (1) What factors affect the programme development capacity of ethnic minority students in pedagogical universities in Vietnam? and (2) How do these factors affect the programme development capacity of ethnic minority pedagogical students?

3. Material and Research Method

3.1. Theoretical Structure and Motivation Measures

Various theories of motivation, including self-determination theory (Ryan & Deci, 2000), goal theory (Pintrich & Schunk, 2002), and social cognitive theory (Bandura, 1991), focus on the quality or type of motivation. Another theory, the expectancy-value theory of motivation (Atkinson, 1964), centres on the idea people are more likely to be motivated to engage in tasks or behaviours they believe they can succeed at and that they perceive as valuable or meaningful.

During the process of learning and developing their capacities, students may possess intrinsic motivation, where intrinsically motivated students derive pleasure and satisfaction from acquiring and using their abilities (Ryan & Deci, 2000; Walls & Little, 2005). To promote intrinsic motivation, three fundamental

psychological needs must be fulfilled: autonomy (the sense of acting according to personal choice), competence (confidence in one's ability to achieve specific goals), and relatedness (feeling connected to others in the immediate environment) (Ryan & Deci, 2000). Additionally, an optimistic perspective can enhance the drive of ethnic minorities students, who have constrained abilities or advantageous developmental opportunities, to promote their capability to surmount challenges and pursue personal growth and achievement (Forbes & Schmader, 2010).

Students' motivation can be characterised by goal theory, which distinguishes between two goal orientations: mastery goals, which focus on achieving task mastery, and performance goals, which centre on demonstrating competence and achieving specific outcomes, often involving the attainment of favourable results or surpassing others' achievements. A key element of motivation is students' self-efficacy, which pertains to their belief in their ability to accomplish specific goals. Confidence in oneself plays a significant role in motivating students, particularly when they have strong self-efficacy for a given task (Bandura, 1991; Kusurkar, 2012).

The expectancy-value theory of motivation posits that the level of motivation to engage in achievement-related behaviour is influenced by the expectation of success and the value attached to that success (Eccles, 1983; Goodenow & Grady, 1993). This theory assumes that all students are driven to pursue success while simultaneously avoiding failure. To assess motivation, it is possible to combine both the motivation to succeed and the motivation to avoid failure.

Taking into account these theories and existing research on factors influencing the programme development capacity of ethnic minority students, the research team constructed a research model to examine the factors affecting the programme development capacity of these students.

3.2. Proposed Research Model

The hypothetical model of this research is presented in Figure 1. Four groups of independent factors affecting students' programme development capacity are: personal factors, family factors, school factors and social factors. The dependent variable is the score of modules directly related to student's programme development capacity that the student has studied.

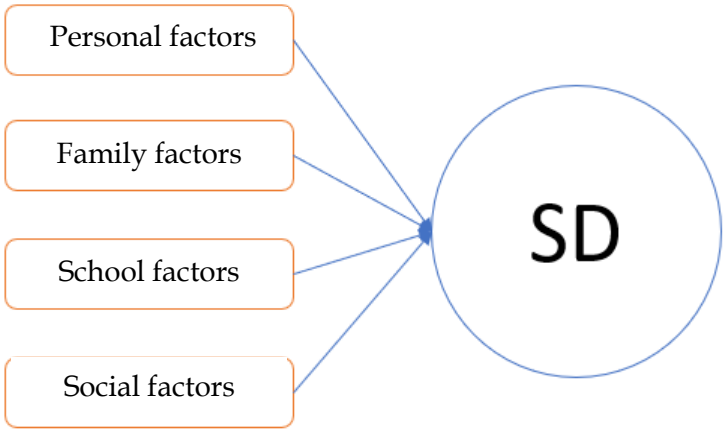

Figure 1. Research model

In this model, SD is the dependent variable; PF, FF, SF and SoF are independent variables that affect students' programme development capacity as detailed in Table 1. With the dependent variable, we take the students' average score at the end of the module associated with students' programme development capacity. In Vietnam, different universities have different subjects; even in the same school, different faculties have different subjects. However, because they are all pedagogical universities, all students are allowed to study the module "Analyse the teaching programme in general education schools" or equivalent modules (they may have different names with each faculty and each university). The final score of the module is converted into a score on the 5-point Likert scale as shown in Table 2. In Vietnam, 100% of university students currently engage with the credit-based system, and their academic performance is assessed using the grade scale of A, B, C, D and F.

Table 1. Factors affecting programme development capacity of ethnic minority students in pedagogical universities in Vietnam

Factor group	Code	Interpretation of attribute elements
Personal factors	PF1	Gender
	PF2	Academic ability
	PF3	Beliefs and educational values
	PF4	Learning feelings
	PF5	Imprint of ethnic identity
	PF6	Pedagogical professional capacity
	PF7	Information technology capacity
Family factors	FF1	Parents' education level
	FF2	Family's economic condition
	FF3	Family's interest and encouragement
	FF4	Family's place of residence
School factors	SF1	School's educational perspective
	SF2	Training programmes
	SF3	Lecturers
	SF4	Study environment
	SF5	School's interest and encouragement
	SF6	School's facilities
Social factors	SoF1	Society's educational requirements

Factor group	Code	Interpretation of attribute elements
	SoF2	Racial/ethnic factors
	SoF3	Support from teacher community
	SoF4	Connection with general education school

Table 2. Conversion from Credit-Based Student Assessment to Likert Scale

	Conversion				
Module's final score	A	B	C	D	F
Likert scale	5	4	3	2	1

Using the aforementioned research model, we conducted exploratory research to test the following hypotheses:
H1: Personal factors have a positive impact on the programme development capacity of ethnic minority students at pedagogical universities in Vietnam.

H2: Family factors have a positive impact on the programme development capacity of ethnic minority students at pedagogical universities in Vietnam.

H3: School factors have a positive impact on the programme development capacity of ethnic minority students at pedagogical universities in Vietnam.

H4: Social factors have a positive impact on the programme development capacity of ethnic minority students at pedagogical universities in Vietnam.

3.3 Research Methodology
This study employed the EFA method (Haig, 2005; Hair, 2011) to examine the influence of factors on the programme development capacity of ethnic minority students at pedagogical universities in Vietnam. It followed these steps: (1) Initially, secondary data related to the theoretical foundation and studies concerning factors affecting students' involvement in scientific research were examined to develop an initial research scale. (2) To ensure the accuracy of the scale, 10 students from the research group were interviewed. The preliminary study's modified scale was subsequently established as the official scale. (3) Extensive data collection took place. (4) The data was cleaned and processed using SPSS software. (5) The collected data was then subjected to analysis and evaluation using the EFA method to identify the factors influencing the programme development capacity of ethnic minority students at pedagogical universities in Vietnam.

The measurement scale used in this study incorporated elements from published studies and teaching practices in Vietnam, which were adapted to align with the factors impacting students' capacities. Each observed variable was assessed using a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The study proposed a total of 21 independent factors, categorised into three groups. Individual factors influencing students' programme development capacity were assessed through seven observed variables. Family factors influencing their programme development capacity were measured using four observed variables. School factors impacting their programme development

capacity were evaluated through six observed variables. Social factors were assessed using four observed variables (Table 1).

4. Findings and Discussion

4.1. Research Samples

In the application of EFA, the sample size is guided by the equation (n = 50 + 8*m) where (m) represents the number of independent variables (Tabachnick et al., 2013). Consequently, for this study, a minimum of 218 samples was established, derived from the calculation (50 + 8*21).

The study's participants consisted of ethnic minority students from pedagogical universities across Vietnam. To achieve a representative sample, the research employed a combination of multistage and stratified sampling techniques. Notably, participants were drawn from all three primary regions of Vietnam: the North, Central and South. Collaborators within the pedagogical universities facilitated the distribution of the survey questionnaire, ensuring effective communication of the survey details to the target students. This approach aimed to facilitate the collection of objective and accurate research outcomes. The questionnaires were directly delivered to the students, and data collection took place between March 13, 2023, and March 27, 2023. A total of 346 responses were received from survey respondents. After the data was carefully cleaned to remove any missing, incomplete or unanswered questionnaires by ethnic minority students, a total of 324 valid responses were retained for analysis (refer to Table 2).

Table 3. Respondents

Sample	Gender		Survey regions			Fields		
	Male	Female	The North	The Central	The South	Natural Science	Pedagogical science	Others
Quantity (Students)	95	229	131	84	109	107	101	116
Percentage (%)	29.3	70.7	40.4	25.9	33.6	33.0	31.2	33.6

According to Table 3, the survey participants displayed certain characteristics that were generally suitable, except for a notable gender imbalance among the respondents, with females comprising 65.8% of the sample. However, this higher proportion of female students aligned with the typical gender distribution observed in the pedagogical profession in Vietnam. Historically, women had consistently accounted for the majority in this field, with an average representation of 86.1% in pedagogical universities, as reported by the General Statistics Office of Vietnam. Natural science fields were Bachelor's degrees in Mathematics, Physics, Chemistry, Biology and Natural Sciences; Pedagogical science fields were Bachelor's degrees in Literature, History, Geography, Foreign Languages, and Political Education; other fields are Bachelor's degrees in Primary Teacher Education, Preschool Teacher Education (after their graduation, students will teach in corresponding primary and preschool divisions), and Physical

Education. As a result, despite significant disparity in gender characteristics, the data obtained ensured the study's objectivity

4.2. Reliability of the Scale

To assess the reliability and validity of the scale, reliability analysis and EFA were conducted. The correlation between observed variables in the scale was examined using Cronbach's Alpha coefficient. Observed variables that exhibited a Cronbach's Alpha coefficient below 0.6 or a Corrected Item-Total Correlation below 0.3 were excluded from further analysis, following the guidelines outlined by Hair (2011). After the initial calculations, it was found that the Corrected Item-Total Correlation of the YT1 observed variable (-0.33) fell below the threshold of 0.3. As a result, this observed variable was excluded from the analysis (refer to Table 4).

Table 4. Statistical results with seven "personal" variables

	Cronbach's Alpha: .656 N of Items: 7			
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
YT1	23.17	10.403	-.033	.748
YT2	21.60	8.310	.489	.584
YT3	21.88	8.369	.424	.602
YT4	21.62	8.689	.437	.602
YT5	21.87	8.311	.468	.589
YT6	21.82	8.490	.439	.599
YT7	21.85	8.125	.473	.586

In the research, the "personal factors" group did not incorporate the YT1 variable. The reliability of the scales related to individual, family, school, and social factors was assessed using Cronbach's Alpha analysis. All scales met the predefined criteria, with Cronbach's Alpha coefficients exceeding 0.6 and Corrected Item – Total Correlations surpassing 0.3 (refer to Table 5). This indicates a consistent observation within the factors and a high reliability of the factor scale. Notably, no variables were omitted from these scales as per Hair (2011).

Table 5. Cronbach's Alpha analysis results

No.	**Factors**	**Observed variables**	**Cronbach's Alpha**	**Corrected Item-Total Correlation**
1	Personal factors	PF1, PF2, PF3, PF4, PF5, PF6, PF7	.748	.712
2	Family factors	FF1, FF2, FF3, FF4	.764	.708
3	School factors	SF1, SF2, SF3, SF4, SF5, SF6	.785	.752
4	Social factorss	SoF1, SoF2, SoF3, SoF4	.755	.698

4.3. Relevance of Observed Variables and Factors in the Model

To determine the relevance of the observed variables and factors in the model, the study conducted Kaiser-Meyer-Olkin (KMO) and Bartlett's Test (Table 6).

Table 6. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		**.780**
Bartlett's Test of Sphericity	Approx. Chi-Square	1527.533
	df	190
	Sig.	.000
Eigenvalue min		2.148
Total Variance Explained (%)		51.870
Minimum factor loading		.575

Based on the findings presented in Table 6, all parameters in the EFA demonstrated satisfactory results. The KMO measure of sampling adequacy was 0.780, which surpassed the minimum threshold of 0.5. This indicated that the EFA was appropriate for the actual data. Additionally, Bartlett's Test yielded a significance value of 0.000, which was less than the significance level of 0.05, suggesting that the observed variables exhibited linear correlations with the representative factor. Furthermore, all Eigenvalues exceeded one, with the minimum Eigenvalue being 2.148. The Total Variance Explained accounted for 51.87%, which exceeded the desired threshold of 50%. The minimum factor loading was 0.575, surpassing the threshold of 0.3. These findings met the condition to retain all observed variables, and no variables were excluded from the analysis (Hair, 2011). Therefore, the application of EFA in this study was completely suitable and observed variables satisfy the condition of the scales.

Table 7. Table of Rotated Component Matrix

	Observed	Component			
STT	**variables**	**PF**	**FF**	**SF**	**SoF**
1	YT15	.771			
2	YT14	.759			
3	YT17	.695			
4	YT12	.649			
5	YT13	.648			
6	YT16	.637			
7	YT2		.718		
8	YT7		.687		
9	YT5		.683		
10	YT4		.666		
11	YT6		.655		
12	YT3		.575		
13	YT11			.792	
14	YT9			.765	
15	YT10			.747	
16	YT8			.742	

STT	Observed variables	Component			
		PF	FF	SF	SoF
17	YT19				.795
18	YT18				.778
19	YT21				.760
20	YT20				.682

In Table 7, to sharpen our focus on the salient loadings, loadings less than 0.30 in absolute value were blanked out. Table 7 shows that the factor loadings were all greater than 0.5, which meant that observed variables indicated their convergence. In addition, all values also revealed that they satisfied the differential loading (the difference of the maximum factor loading and other loadings of the same variable (considering the absolute value) should be greater than 0, 3). In other words, PF, FF, SF and SoF all satisfy the distinct and convergence (Hair, 2011).

Upon completing the EFA stage, we identified five factors, namely PF, FF, SF, SoF and SD, which were most appropriate for the 21 selected observed variables (comprising 20 independent observed variables and one dependent observed variable). To test the proposed hypotheses, we proceeded to transform the measurement of observed variables into the measurement of factors. This involved creating representative factors and conducting Pearson correlation and linear regression analyses to examine the relationships between these factors.

4.4 Correlation and Regression Analysis

A Pearson correlation test was performed to examine the relationship between the independent and dependent variables. The findings, as shown in Table 8, revealed that all variables exhibited a strong and statistically significant linear relationship (correlation coefficient $r > 0$, Sig. < 0.05).

Table 8. Correlation analysis results

		SD	PF	FF	SF	SoF
SD	Pearson Correlation	1	.336**	.558**	.360**	.190**
	Sig. (2-tailed)		.000	.000	.000	.001
	N	324	324	324	324	324
PF	Pearson Correlation	.336**	1	.031	-.017	-.120*
	Sig. (2-tailed)	.000		.581	.758	.031
	N	324	324	324	324	324
FF	Pearson Correlation	.558**	.031	1	.003	-.036
	Sig. (2-tailed)	.000	.581		.954	.515
	N	324	324	324	324	324
SF	Pearson Correlation	.360**	-.017	.003	1	-.060
	Sig. (2-tailed)	.000	.758	.954		.284
	N	324	324	324	324	324

SoF	Pearson Correlation	.190**	-.120*	-.036	-.060	1
	Sig. (2-tailed)	.001	.031	.515	.284	
	N	324	324	324	324	324
****. Correlation is significant at the 0.01 level (2-tailed).**						
***. Correlation is significant at the 0.05 level (2-tailed).**						

Table 9. Regression results

Variables	**SD**			
	Std. Error	**Standardised Beta coefficient**	**Sig.**	**VIF**
(Constraint)	.412		.000	
PF	.053	.358	.000	1.016
FF	.049	.556	.000	1.002
SF	.052	.381	.000	1.004
SoF	.050	.276		1.020
Number of observations		324		
Adjusted R2		.620		
Sig. of the F test		.000		
Durbin-Watson value		1.999		

To validate the four propositions outlined in the theoretical framework, a rigorous analysis was undertaken. Table 9 illustrates the outcomes of a multivariable regression assessment. A p-value of the F test less than 0.05 denotes that the regression coefficient held significance, making the regression model suitable for the acquired data. The Durbin-Watson statistic, landing at 1.999, falls within the accepted range of 1.5-2.5, suggesting no first-order serial correlation in the model. All regression coefficient significance test values (Sig.) were beneath the 0.05 threshold, underscoring the significant influence of the predictor variables on the outcome variable. Furthermore, all Variance Inflation Factor (VIF) values for the predictors were under 10, indicating no breach of the multicollinearity assumption.

Table 9 also highlights that every predictor exhibited a positive standardised regression coefficient (Beta). This infers a positive influence of these predictors on the outcome variable. As a result, hypotheses H1, H2 and H3 were validated. The standardised regression model, incorporating the aforementioned findings, is expressed as: SD = 0.053*PF + 0.049*FF + 0.052*SF + 0.050*SoF + ε, where ε represents the residual component. The model encapsulates an adjusted R^2 of 0.620, signifying that variables PF, FF, SF and SoF collectively explain 62.0% of the variance in the dependent variable SD, with the residual 38.0% ascribed to extraneous factors and stochastic discrepancies.

From the above equation, the relative contribution of each predictor becomes discernible. Notably, the family factor (FF) emerges as the most influential component, brandishing a peak Beta value of 0.556. Conversely, the social factors (SoF) have the least pronounced effect, as evinced by its Beta value of 0.276.

Table 10. Factors influencing the programme development capacity of ethnic minority students according to the region

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
PT	Based on Mean	.072	2	321	.931
	Based on Median	.041	2	321	.960
	Based on Median and with adjusted df	.041	2	314.680	.960
	Based on trimmed mean	.056	2	321	.946

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.234	2	.117	.175	.839
Within Groups	214.466	321	.668		
Total	214.701	323			

Table 11. Factors influencing students' programme development capacity by group of majors

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
PT	Based on Mean	2.913	2	321	.056
	Based on Median	2.703	2	321	.069
	Based on Median and with adjusted df	2.703	2	317.178	.069
	Based on trimmed mean	2.781	2	321	.063

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.973	2	.987	1.489	.227
Within Groups	212.727	321	.663		
Total	214.701	323			

After analysis of variance between the groups, Table 10 shows that the P-value > 0.05 (at the Test of Homogeneity of Variances), proving that the variance between the two groups is homogeneous. The significance (in ANOVA Table 10) reached 0.839 > 0.05, showing no difference in mean between groups. This also happened when assessing the factors influencing students' educational programme development capacity by group of majors (Table 11). Therefore, the factors influencing the programme development capacity of ethnic minority students at pedagogical universities in Vietnam by location of universities or by group of majors have no difference.

4.5 Discussion

After graduation, pedagogical students would become teachers working at general education schools. They play an important role in successfully completing the educational goals of each country. Therefore, when studying at pedagogical universities, the research and evaluation on programmes will help students better

understand the goals, the requirements to be achieved at all levels, the teaching content of subjects, thereby helping students to design teaching plans suitable for learners. The good programme development capacity of students would help them grasp the lessons and teaching at each grade in general education schools. To establish programme development capacity, students are required to master the methods, techniques, forms of teaching and testing as well as evaluation forms. Accordingly, students would be able to organise appropriate educational activities for learners. This would be the foundation for students to build materials for teaching such as support documents, videos and e-lectures.

So the question is: How can students at pedagogical universities in Vietnam, including ethnic minority students, establish good programme development capacity? Or which factors affect the programme development capacity of ethnic minority students at pedagogical universities in Vietnam? The study pointed out four groups of factors influencing the programme development capacity of ethnic minority students, including: personal factors with six observed variables, family factors with four observed variables, school factors with six observed variables and social factors with four observed variables.

With the group of personal factors, academic achievements (Dennis et al., 2005), educational beliefs and values (Alsubaie, 2016), learning emotions and information technology capacity (Dennis et al 2005; Hiep & Huong, 2016; Lan & Thao, 2016) were found to be factors influencing the programme development capacity of pedagogical students. However, the aspect of national identity and pedagogical professional capacity are new factors found in this study.

Vietnam has no racism or ethnic discrimination like some other countries. However, each ethnic group has its own different life perspectives, culture and socioeconomic conditions. Accordingly, the ethnic identity influencing the programme development capacity of ethnic minority students in Vietnam is understandable. Vietnam has 53 ethnic minorities, living mostly in remote areas with difficult economic conditions. As a result, each ethnic group has its own identity (Tuyen, 2019). Traditional ideological values and educational methods of the nation will influence how students approach and analyse the curriculum. Language and culture are important factors in understanding and analysing the curriculum. When pedagogical students clearly understand the language, national culture, national history and national education traditions of their pupils, they will understand and analyse the curriculum accurately and effectively. Any ethnic group has its own diversity of culture, religion, customs and practices (Hiep & Huong, 2016; Tuyen, 2019) Pedagogical students can understand and respect the different values and needs of their pupils when mastering such diversity, thereby designing appropriate teaching plans and meeting the needs of each pupil.

Pedagogical professional capacity provides students with educational theories to effectively apply educational methods to help their pupils learn better. Students with high pedagogical qualifications will better understand educational theories and be able to use them to develop educational programmes, analyse and evaluate the current educational programme. Thus, new educational programmes consistent with the educational goals as well as the learning needs of the students

can be planned and developed. Moreover, students with high pedagogical qualifications can make plans and effectively organise the teaching, design activities and lectures in conformity with the educational goals and learning needs of each pupil (Alsubaie, 2016; Vinh & Nam, 2019). Students with good pedagogical professional capacity can be creative in developing educational programmes, offering new ideas and advanced educational methods to help their pupils learn better. Pedagogical universities in Vietnam now pay considerable attention to the practice and development of pedagogical professional capacity (Vinh & Nam, 2019). Students can develop their pedagogical professional capacity through expanded courses (not included the curricular programme) or participate in clubs or in groups on social sites (mainly Facebook and Zalo groups in Vietnam) (Cuong, 2019).

With the group of family factors, the family's interest and encouragement (Gonzalez et al., 2013; Hiep & Huong, 2016), and the family's economic condition (Fischer, 2010; Stegers-Jager et al., 2012) were found to influence the development of pedagogical professional capacity. However, this study has discovered new factors, including the family's place of residence and the parents' educational background.

Students in well-equipped educational institutions can readily access learning materials and engage in extracurricular and academic pursuits to foster and enhance learning and skill development. Similarly, those residing in regions with robust educational resources like libraries, museums and academic centres can access comprehensive materials for improved learning and research. Additionally, students who immerse themselves in plentiful social activities refine vital soft skills such as communication, leadership and time management. All of these will help them to create conditions for students to enhance their educational programme development capacity in a more complete way and with higher quality. However, the majority of Vietnamese ethnic minority students live in remote and isolated areas with difficult economic conditions (General Statistics Office of Vietnam, 2020; Tuyen, 2019). They will clearly understand that their place of residence is an obstacle to the development of their educational programme development capacity compared to other students.

Parents with high educational qualifications have an awareness of the value of education and will be particularly concerned about their children's good education. They will encourage and support their children in the learning process. Parents impart knowledge and skills to their children. As a result, parents with an advanced educational background may provide their children with a favourable learning environment, including books and learning materials, and may support their children in their studies. Furthermore, families with highly educated parents often live in a civilised environment. Their reading habits will encourage their children to read books and students, accordingly, will have more opportunities to access educational resources (Vinh & Nam, 2019). Thus, it can be seen that parents with an advanced educational background will create more favourable conditions for students to develop their educational programme development capacity. Such fact leads to a clearer distinction for ethnic minority students in Vietnam, because

the number of students with highly educated parents is lower than among ethnic majority students (General Statistics Office of Vietnam, 2020).

Among the factors affecting students' programme development capabilities, the learning environment (Bembenutty, 2007), educational programme, lecturers (Alsubaie, 2016; Vinh & Nam, 2019) and the condition of school facilities (Bembenutty, 2007; Cuong, 2019; Tuyen, 2019) have been identified as significant factors in previous studies. However, the school's educational perspective, the school's interest and encouragement were the new factors found in this study

School is one of the first and most important units in the formation of students' viewpoints, ideas and educational achievement. In an academic context, the school's educational philosophy critically influences the preparation of future teachers and the methodology used to enhance students' abilities of analysing educational programmes. When the school has a modern, flexible and up-to-date educational perspective with regard to the latest educational trends, students may get opportunities to access the latest knowledge, advanced educational methods as well as advanced teaching aids. On the contrary, if the school's educational perspective is old-fashioned, underdeveloped and not up-to-date with the latest educational trends, students may not have access to the latest knowledge and advanced educational methods, which will influence their educational programme development capacity. Therefore, the school's educational perspective plays an important role in developing the educational programme development capacity of students at pedagogical universities. In spite of the fact that pedagogical universities in Vietnam have been actively orienting their educational perspective in a clear way, Vietnamese education is still considered poor and requiring many innovations. Therefore, pedagogical universities in Vietnam should innovate more strongly to facilitate their students in acquiring the necessary pedagogical capacities, including the educational programme development capacity.

The school's interest and encouragement help students orient the goals and directions of teaching programme development, help them provide a development plan and roadmap. Schools may provide material resources and technical support to help students develop their teaching programme. These resources may include training courses, descriptive documentation, and support software (Alsubaie, 2016). The school's interest and encouragement may also include providing students with feedback and assessment on the quality of their teaching programmes, which may help students improve and perfect their teaching programmes. The school's interest and encouragement through the process of contact between teachers and students, through competitions, clubs or support programmes help motivate students in the process of developing their teaching programme and development capacity. The above analysis has been implemented by pedagogical universities in Vietnam (Tuyen, 2019; Vinh & Nam, 2019). This will be a great motivation for Vietnam to achieve the goals of the new general education programme.

Society's educational requirement (Brown & Livstrom, 2020; Lan & Thao, 2016) was found to be a factor. However, the teacher community's support; the Racial/ethnicity; the Connection to general education schools are new factors found in this study

The community of teachers can provide students with the latest information and knowledge related to fields of education, challenges and difficulties in teaching practice, as well as effective teaching methods. Furthermore, the teacher community's support also helps students at pedagogical universities get opportunities to approach teaching practice, thereby improving their practical skills and awareness of educational issues. This also enables students to introduce new ideas into their teaching programme, and to better understand the importance of connecting theory and practice. Thanks to the support from the teaching community, students at pedagogical universities may get more confidence and motivation to perfect their teaching programmes. As a result, students can be more confident when entering teaching practice and becoming highly qualified and professional teachers (Brown & Livstrom, 2020). Currently, students in Vietnam are encouraged to participate in teacher community groups (mainly on Facebook and Zalo). Through these teacher communities, students will get more favourable opportunities to develop pedagogical capacities, including programme development.

Students in Vietnam all use the Vietnamese language when entering schools. However, they still have their own language of communication. The use of Vietnamese language in schools may make them difficult to understand and use professional education terms. Ethnic minority students from areas with low social and economic development may experience a shortage of educational resources, including educational materials and facilities, which also influence their educational programme development capacity. The awareness of ethnic diversity helps students at pedagogical universities to create diverse teaching programmes that are suitable for pupils from different ethnic groups (Lan & Thao, 2016). This also enables ethnic minority students to become more sensitive to issues related to cultural diversity and diverse education.

Thanks to the continuous contact and interaction with teachers and administrators at general education schools, pedagogical students can keep abreast of the latest educational trends and demands. This enables students to develop teaching programmes in line with requirements of the current educational practice. Connection with general education schools also helps pedagogical students to find better internship and practice opportunities. As a result, students can experience reality and develop their teaching, classroom management and student interaction skills in the best way. This facilitates the students' engagement with experts in the educational field to promote knowledge exchange and experience learning. On the other hand, thanks to good connections with general education schools, pedagogical universities can improve the quality of their training programmes through integrating information and assessments from the educational community. This enables students to learn and apply the latest knowledge and skills into their training programme. At pedagogical universities in Vietnam today, students will practice and teach in general education schools when they are in the second to the fourth academic year (Tuyen, 2019). This is a big change (before 2015, students from the majority of pedagogical universities in Vietnam may only contact with general education schools for 2 weeks in the third academic year and for 6 to 8 weeks in the 4th academic year) which receives the consent from by students, parents, as well as educational

researchers. Such a change is a very good opportunity for students to develop their pedagogical capacity, including teaching programme development.

5. Recommendations

Based on the findings, the authors provided a number of recommendations to promote the teaching programme development capacity of ethnic minority students at pedagogical universities in Vietnam, including:

Regarding the family, in order to help them to perfect their skills as teachers, including programme development capacity, students of pedagogical universities, including ethnic minority students, need to receive the support from their families in many aspects, including:

(1) support and encourage students' interests and passions related to education, helping them develop creative thinking and enthusiasm for learning;

(2) ensure that students obtain sufficient financial resources to cover the expenses of study, internships, extracurricular activities and other professional development opportunities;

(3) create opportunities for students to exchange and expand their network of relations, especially connections with teachers, education experts and friends in the field of education to learn and share experiences;

(4) encourage students to attend extracurricular activities and education-related clubs so that they accumulate more experience and skills in the field of education; and

(5) regularly pay attention to students' learning progress, have discussions on academic goals and career directions, and help students recognise their strengths, weaknesses and points to be improved in the learning process.

In the context of pedagogical universities and educational management agencies, schools play a pivotal role in shaping students' perspectives, ideas, competencies, instructional methodologies and educational programme development. Therefore, in order for ethnic minority students to be able to develop their programme development capacity, pedagogical universities and educational management agencies should:

(1) provide priority and support policies to ethnic minority students in the admission process in order to ensure equitable access to learning opportunities for all students;

(2) offer language support programmes for ethnic minority students which enable them to master the official communication language and effectively participate in the learning process;

(3) provide learning materials in line with their cultural background, language and qualifications. Pedagogical universities and educational management agencies should also enhance individual guidance and support in the learning process;

(4) provide training for teachers with knowledge of cultural diversity, which enables them to understand and respect the cultural values of ethnic minority students and develop appropriate teaching programmes.

(5) integrate contents related to the culture, history and language of ethnic minorities into the educational programme, which enables students to access knowledge related to cultural diversity.

(6) facilitate ethnic minority students to participate in activities associated with general education schools, enabling them to expand their knowledge, skills and experience in developing teaching programmes associated with practice, especially the practice of teaching in areas where ethnic minorities are living.

(7) Provide scholarships, financial and material support to ethnic minority students.

6. Conclusion

Based on the aforementioned research findings, it is evident that there exist four groups of factors that influence the programme development capacity of ethnic minority students at pedagogical universities in Vietnam. These groups consist of personal factors (comprising 6 observed variables), family factors (consisting of four observed variables), school factors (including six observed variables), and social factors (comprising 4 observed variables). The research findings hold significant value as they contribute to establishing a scientific foundation and offering valuable insights to various stakeholders, including ethnic minority students' families, pedagogical universities and administrators. These insights can be used in the development of curricula, training modules and student support policies, among others, with the aim of enhancing students' educational programme development capacity. Consequently, pedagogical universities can improve their training capabilities, meet the requirements of innovative curricula and textbooks, and successfully fulfil Vietnam's general education objectives during the current period.

Despite the achievements of the study, it is important to acknowledge certain limitations. Firstly, the research was had a limited time frame. Secondly, despite the efforts made by the research team to ensure students' understanding and thoughtful response to the survey through the involvement of collaborators and use of social networking platforms like Facebook and Zalo, it appears that some students may have responded without adequate consideration. Lastly, the participation rate of students varied across regions, gender and other factors, which may have influenced the statistical outcomes to some extent.

In the future, the research team may expand its research direction on the factors influencing the programme development capacity of ethnic minority students by applying other research methods such as: Delphi analysis, Analytical Hierarchy Process (APH) and Structural Equation Model (SEM). These will be complementary studies that will inherit and develop study findings for this article.

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