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Associated Psychological Dimensions of Mental Well-Being among Vocational Student Teachers at a Thai Public University

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Abstract. Psychological well-being is becoming an increasingly important issue in higher education, especially for students in vocational teacher training programs who face pressures from both theoretical studies and practical training in educational institutions. Such pressures are heightened owing to the social environment in Thailand where the parents of students expect them to graduate and pass the civil service teacher examination. Even though the universities have focused on the welfare of learners, there is a lack of research regarding the psychological well-being of the vocational teacher trainees. Therefore, the current research seeks to investigate the psychological aspects related to the mental well-being of vocational education students at public universities in Thailand. The study adopted a quantitative research design, using a stratified sample of 150 undergraduate students from public universities in Bangkok. The instrument for data gathering involved the use of a standardized questionnaire with an IOC value between 0.60 to 1.00 and a Cronbach's alpha value of 0.817. The multiple regression analysis method was used and multicollinearity diagnostic tests revealed that all tolerance values were above .10 while VIF values were below 10. According to the research results, psychological well-being is at a very high level. It relates to six psychological dimensions: life purpose, positive relationships, environmental mastery, autonomy, self-acceptance, and personal growth. The theoretical concepts of psychological well-being explain such results and reflect the multidimensional nature of students' well-being in educational institutions. It is important to emphasize the need for an appropriate supportive environment that includes screening, counseling, and the evaluation of intervention effectiveness for well-being.

Keywords: Associated psychological dimensions; higher education; mental well-being; vocational student teachers

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1. Introduction

There is a need for individuals to solve problems across physical, mental, emotional, and social dimensions. This can lead to deterioration in their mental well-being, in turn contributing to the lack of sustainability in the development of society and the economy. The third goal of the Sustainable Development Goals (SDGs) aims to promote good health and well-being for the population by engaging all sectors in its implementation (Tahir, 2026).

The term "good health" is not simply the absence of disease but rather excellent health, which is connected to the physical, mental, and social aspects of the SDGs. Mental well-being enables people to lead positive lives and be happy in society. If individuals have self-acceptance, positive relationships with others, independent decision-making skills, environmental management skills, personal development, and a sense of direction in life, they can live happily in society and help develop the country sustainably (Ryff, 1989). There should be a balance in human mental well-being to ensure safety and happiness when living and working together in society.

According to findings from a mental well-being survey in Thailand, individuals aged 15-24 are the worst performers in terms of well-being. If they do not receive proper care, they will likely drop out of their courses, experience depression, or even develop suicidal tendencies (Srijundaree et al., 2024). Moreover, according to the TUN-HPN survey in Thailand, 40% of students often feel stressed. The evaluation of mental well-being by Thailand's Ministry of Public Health showed alarming results on October 1, 2023. From the use of the Mental Health Check-In tool, of the 3,580,186 people who took part in the test, 257,534 participants (7.19%) indicated they had high levels of anxiety, 305,587 (8.54%) were at risk of depression, 168,461 (4.71%) were at risk of suicide, and 33,823 (4.25%) faced burnout.

Later in 2025, the World Health Organization (WHO) (2025) reported that over 8% of the Thai population suffered from high levels of stress between 2020 and 2024, almost 10% were at risk of depression, and more than 5% were at risk of suicide. Thus, universities should ensure that their students have psychological support (Hitches et al., 2025; Hyseni Duraku et al., 2023), especially those studying in teacher education programs. They face not only academic burdens but also practical work, dealing with students, managing their studies, and adapting to rapid technological development (Srijundaree et al., 2024). These factors can lead to additional stress and fatigue, resulting in burnout when entering the future professional field (Dobiášová et al., 2025).

From these results, several academic and career-related factors affect students in teacher education. These factors include teaching practicum, work-related factors, and problems related to future teacher certification and civil service teacher examinations (Aslan & Koçak, 2025). According to Rice et al. (2017) and Doyle et al. (2017), high levels of mental well-being in adolescence positively affect adult life, whereas low levels may lead to more severe consequences. While mental well-being and its importance within educational settings have gained more

attention recently, existing literature focuses either on general student samples or individual psychological factors without considering the multidimensionality of the concept of well-being in vocational teacher education programs.

Existing research demonstrates that well-being functions within complex systems where both psychological and contextual factors interact to impact educational processes; however, these complex matrices have not received adequate attention (Chimbi et al., 2025). Furthermore, existing studies have found that emotional, personal, and motivational factors are important barriers to learning engagement and participation; however, none of these factors have received sufficient attention as psychological dimensions of mental well-being in higher education settings, particularly outside Western societies (Fikri et al., 2026). Therefore, mental well-being is considered a broader psychological construct, whereas the six psychological dimensions of mental well-being suggested by Ryff (1989) are viewed as six separate but interrelated dimensions.

Therefore, there is a considerable lack of empirical data on the six psychological dimensions of mental well-being among vocational teacher students, as most studies have focused on individual dimensions. This study addresses this gap by examining vocational teacher education in an Asian country, where the application of Ryff's psychological well-being model to higher education is gradually being examined (Neagu et al., 2025; Zhang et al., 2025). The findings of this analysis will serve as the basis for developing mental well-being monitoring and counselling systems for vocational teacher students in higher education institutions.

In an attempt to bridge this gap, this study is anchored on the following research questions (RQs):

RQ1: What is the level of mental well-being among undergraduate vocational teacher students in the Faculty of Technical Education?

RQ2: Which psychological factors are significantly related to the mental well-being of students?

In this regard, the research objectives include the following:

RO1: To examine the level of mental well-being among undergraduate vocational teacher students in the Faculty of Technical Education and

RO2: To determine the psychological factors that relate to the mental well-being of students.

2. Literature Review

2.1 Perspectives on Mental Well-Being

To enjoy a high quality of life, one needs not only to be physically healthy but also to experience satisfaction, cognition, and positive emotions towards life. It is important to achieve well-being across the physical, psychological, and intellectual domains to sustain such a life. As stated by Martela and Sheldon (2019), success and well-being foster the development of autonomy, competence, relatedness, and other psychological needs, thereby both positively and

negatively affecting emotions related to life satisfaction. Mental well-being is considered to be multidimensional.

2.2 Perspectives on Mental Well-Being

Mental well-being has been a topic of study for many decades. The term "psychological well-being" is categorized into two forms:

Form 1 is eudaimonic well-being, which focuses on the intentional development of potential in relation to an individual's psychological needs (Järekkari et al., 2025; Martela & Sheldon, 2019). Well-being involves not only being healthy but also the development of emotions, life satisfaction, achievement, and good relationships (Ryff, 1989). In accordance with Ryff's (1989) theory, psychological well-being comprises interdependent dimensions that together contribute to mental well-being.

Form 2 entails subjective well-being, otherwise referred to as hedonic well-being, that focuses on the assessment of happiness and satisfaction within a personal life (Abdel & Lester, 2013). While the two terms are quite different, their connection is becoming more apparent in the understanding of an individual's general well-being (Yu et al., 2024).

As Wright (2000) pointed out, both positive and negative emotions are important components of life and work. Wan et al. (2025) further suggested that wisdom, emotional regulation, and an appropriate response to life events are the keys to success. It means that well-being involves a dynamic process of emotional regulation that helps one adapt to situations in educational and work environments. To assess mental well-being, there should be appropriate measures to capture its psychological dimensions. As Ryff's (1989) findings indicate, feelings in mind have many complex dimensions. They can be characterized by the questions formulated positively and negatively, related to six dimensions: a) self-acceptance, b) positive relations with others, c) autonomy, d) mastery of environment, e) personal growth, and f) purpose in life. Negative questions are reversely scored.

This conceptualization provides a robust theoretical basis for conceptualizing mental well-being as a combination of related psychological aspects rather than as an outcome variable alone (Wang et al., 2024). At the same time, the special Thai educational program of vocational teachers, where professional practice is required, as well as the influence of the collectivism of the culture and family expectations about the civil service job, indicate that one psychological theory may not be enough to explain the nature of mental well-being in this case.

In general, mental well-being is of great importance in determining the quality of life and mental health. People who are capable of controlling both the positive and negative emotions they experience will be able to cope with difficulties and achieve their goals (De Filippis & Foysal, 2024; Huang & Kou, 2025). Nevertheless, while there is a wide variety of theories on the topic, many researchers investigate

each dimension separately, paying insufficient attention to how these dimensions interact.

2.3 Mental well-being of undergraduate students

Adapting and working hard for students pursuing undergraduate degrees requires effort, personal adaptation, and responsibility. In other words, academic and professional studies are examinations of knowledge and mental well-being that include experiences of success and failure. People aged between 13-21 value their friends and society, while those aged between 21-40 are concerned with love and value friends, social relations, and sexual relations.

Students who experience stress or depressive feelings relating to problems will not be able to adapt well to a situation. Thus, schools should help their students develop mental well-being and knowledge so they can survive in society. It aligns with the opinion expressed by Doyle et al. (2017), who consider knowledge of mental well-being as necessary for better managing their lives. Good mental well-being at a younger age helps achieve positive outcomes in adult life (Rice et al., 2017). Moreover, Córdova Olivera et al. (2023) state that university students are in a developmental stage characterized by identity formation and sensitivity to social environments which influence their behavior.

According to Córdova Olivera et al. (2023), self-pressure and self-inflicted stress play an important role in students' mental well-being. Obtaining an undergraduate degree means preparing for future careers; hence, life goals and directions require commitment (Ryff, 1989). In line with the views of Ehrlich (2023), goal setting increases personal capabilities and supports mental well-being. People have freedom in decision-making while being influenced by the environment, which helps them cope with future challenges (Ryan & Deci, 2000).

Additionally, according to Upsher et al. (2023), relationships are established through encouraging and supporting behavior from other individuals. Students' isolation socially can result in poor well-being because social support is critical for an individual's development. Additionally, Bakar et al. (2021) point out that education contributes to one's positive development by fostering the acquisition of new knowledge, skills, attitudes, and self-awareness. Also, personal differences in adaptation and self-development processes influence psychological adjustment, while a growth mindset helps one develop problem-solving skills and achieve goals (Murphy & Dweck, 2015). Overall, the reviewed literature implies that goal orientation, autonomy, social support, and personal growth are interrelated psychological aspects that contribute to mental well-being.

On the whole, university education is a critical transitional stage characterized by academic workload, career preparation, and social adaptation. Students should be able to cope with stress factors linked to their academic, career, social, and relational aspirations that impact their psychological well-being. Successfully coping with all these challenges requires psychological resilience. Thus, universities should offer their students both psychological assistance and academic education. According to the scientific literature, six core psychological

dimensions are associated with mental well-being. They include self-acceptance, positive relations with other people, autonomy, mastery of the environment, personal growth, and a purpose in life (Ryff, 1989). These six dimensions are the basis of the proposed conceptual framework illustrated in Figure 1. Despite their interconnectedness, these six dimensions of psychological well-being have been studied separately in the existing literature, particularly among certain professional groups. Thus, this study examines which psychological dimensions are connected with the psychological well-being of vocational teacher students.

2.4 Conceptual Framework

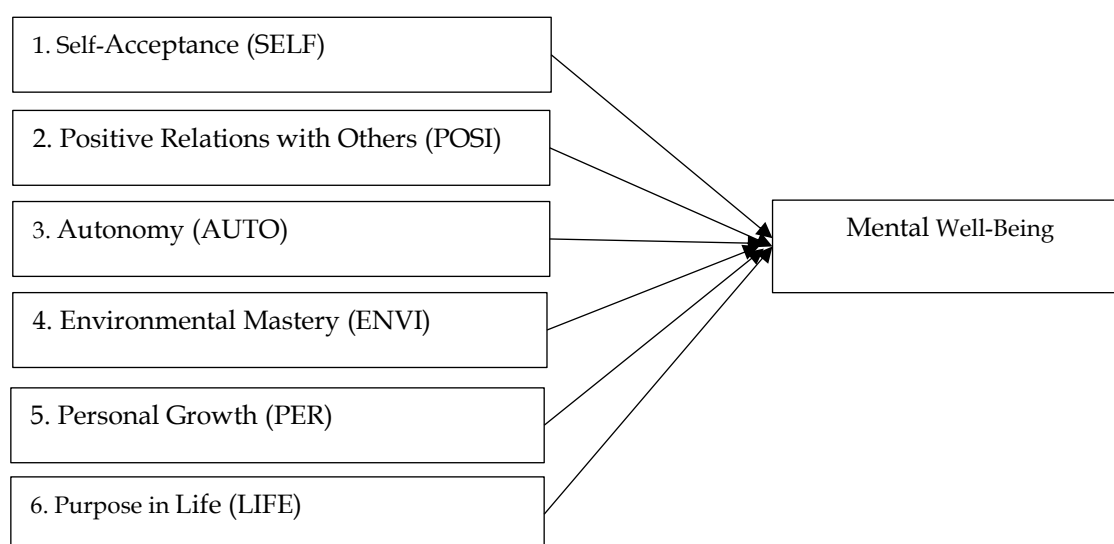


Figure 1: Conceptual framework of associated psychological dimensions of mental well-being among vocational teacher students

3. Methodology

3.1 Research Design

In this study, a quantitative design was used to explore the psychological dimensions and relationships among variables in the mental well-being of vocational teachers' students. The research framework involved six psychological dimensions: self-acceptance, positive relations with others, autonomy, environmental mastery, personal growth, and a purpose in life.

3.2 Research Instrument

In this study, a structured questionnaire was used as the research tool based on the selected theoretical framework (Please see Appendix 1). The structured questionnaire comprises two sections: Section 1 was used to obtain general information about the respondents by means of a checklist. Section 2, on the other hand, was used to measure mental well-being, comprising 42 items: 22 addressed the positive aspect of well-being, while the remaining 20 addressed the negative dimension, reflecting its multidimensionality.

All items were measured on a five-point Likert scale. The scale used in this study ranged from 1 to 5, where 5 indicated absolute agreement, 4 indicated slight

agreement, 3 indicated neutrality, 2 indicated disagreement, and 1 indicated strong disagreement. The 42 items were distributed across six dimensions, with each dimension comprising seven items. Of the 42 items, 22 were positively worded and 20 were negatively worded (requiring reverse scoring during analysis). The distribution of positive and reverse items across dimensions is presented in Table 1:

Table 1: Distribution of positive and reverse items by dimension

Dimension	Positive Items	Reverse Items	Total
Self-Acceptance	1.1, 1.2, 1.4, 1.7	1.3, 1.5, 1.6	7
Positive Relations with Others	2.1, 2.4, 2.5, 2.7	2.2, 2.3, 2.6	7
Autonomy	3.1, 3.2, 3.4, 3.7	3.3, 3.5, 3.6	7
Environmental Mastery	4.1, 4.4, 4.7	4.2, 4.3, 4.5, 4.6	7
Personal Growth	5.2, 5.4, 5.5	5.1, 5.3, 5.6, 5.7	7
Purpose in Life	6.2, 6.5, 6.6	6.1, 6.3, 6.4, 6.7	7
Total	22	20	42

3.3 Instrument Validation and Reliability

Five experts were tasked with validating the research instrument. Each individual had expertise in either in mental health or psychological counselling, or both, in higher education. Also, each had more than five years of experience (Taja-on & Vergara, 2025). Content validity was evaluated through the use of item objective congruence (IOC). Items with IOC values of 0.5 or greater were retained in the research. The findings show that the IOC values for 42 items, ranging from 0.60 to 1.00, have been met, indicating adequate content validity.

Prior to data collection, the research tool underwent a pilot test using an online survey. Cronbach's alpha was used to judge the survey's reliability. Based on the standards set, a reliability coefficient near 1.00 indicates high internal consistency, whereas those below 0.70 should be revised. The findings showed reliability or high levels of reliability across all subscales. For instance, Cronbach's alpha values were 0.776 for self-acceptance, 0.878 for positive relations with others, 0.702 for autonomy, 0.777 for environmental mastery, 0.712 for personal growth, and 0.839 for a purpose in life. This is proof that all subscales had the required reliability level of internal consistency. In general, the Cronbach's alpha score for the instrument was 0.817.

After completion of validity and reliability testing, the measurement tool was sent to the authors' university Human Research Ethics Committee for approval. Upon acquiring ethical clearance, the sample size was calculated based on the requirement of at least 20 respondents per independent variable (1:20 ratio) for multiple regression analysis, which involves six independent variables as proposed by Sarstedt (2019). Considering the above requirements, the minimum number of respondents to be sampled was 120 (6×20).

3.4 Data Collection

Stratified random sampling was used to select subjects from the four departments of the Faculty of Technical Education: Mechanical Engineering Education, Electrical Engineering Education, Civil Engineering Education, and Computer

Education. Strata were created based on these departments, while the students were the sampling units. The sampling frame comprised the fourth and fifth-year undergraduate students in the Faculty of Technical Education enrolled in the first semester of the academic year 2025. These students were chosen because they had covered a wide range of subjects and were involved in their teaching practice experiences; therefore, they were suitable for studying the psychological aspects of mental well-being in the vocational teacher education environment.

Research promotion materials, such as the study information sheet and the link to the online questionnaire, were distributed by the department, which forwarded the link to willing participants. The data were collected within three months. The sampling frame comprised students from seven specific programs within the four departments: Mechanical Engineering (4-year), Mechatronics and Robotics Engineering (4-year), Manufacturing and Industrial Engineering (4-year), Electrical Engineering and Education (5-year), Electrical Engineering (4-year), Civil Engineering and Education (5-year), and Computer Technology (4-year).

3.5 Data Analysis

Descriptive statistics were employed to assess general characteristics of the respondents, such as frequencies and percentages. The level of mental well-being was evaluated through mean (M) and standard deviation (SD). The criteria for interpreting mean scores were proposed by Ryan and Deci (2000). Mean scores ranging from 4.21 to 5.00 were considered the highest level of mental well-being; 3.41 to 4.20 – high; 2.61 to 3.40 – moderate; 1.81 to 2.60 – low; and 1.00 to 1.80 – the lowest level. This helped to interpret the students' level of mental well-being systematically.

The analysis of association between the six dimensions and overall mental well-being was conducted by multiple regression analysis through the enter method (also called forced entry method) (Caballero-García & Ruiz, 2025). The enter method was used since it enables entering all the independent variables in the regression equation at once, which is appropriate considering the theoretical basis of the research, where Ryff's (1989) six-dimension model is examined. The use of this method allows exploring the unique impact of each psychological dimension in the presence of the others.

3.6 Ethical Considerations

The study's goals, data collection procedures, and benefits were indicated on the first page of the Google Forms. The participants had the opportunity to read about the study and decide whether to participate. The decision to participate or not was made anonymously and did not affect anyone. Data gathered from the participants were coded, while pseudonyms were used to protect participants' identities. The human research study was carried out in accordance with internationally accepted ethical standards, including the Declaration of Helsinki, the Belmont Report, the CIOMS Guidelines, and Good Clinical Practice (ICH-GCP). The Human Research Ethics Committee Network of Naresuan University granted ethical approval for the study under the approval number P4-0022/2568.

4. Results and Findings

4.1 Participant Demographics

Figure 2 shows the demographics of the participants who are vocational teacher students studying at the undergraduate level. The majority of the respondent group consisted of early-adult students aged between 18 and 24 years, with the largest proportion falling within the 18-21 and 22-24 age ranges. There were 150 participants from four different departments, namely Mechanical Engineering Education, Electrical Engineering Education, Civil Engineering Education, and Computer Education.

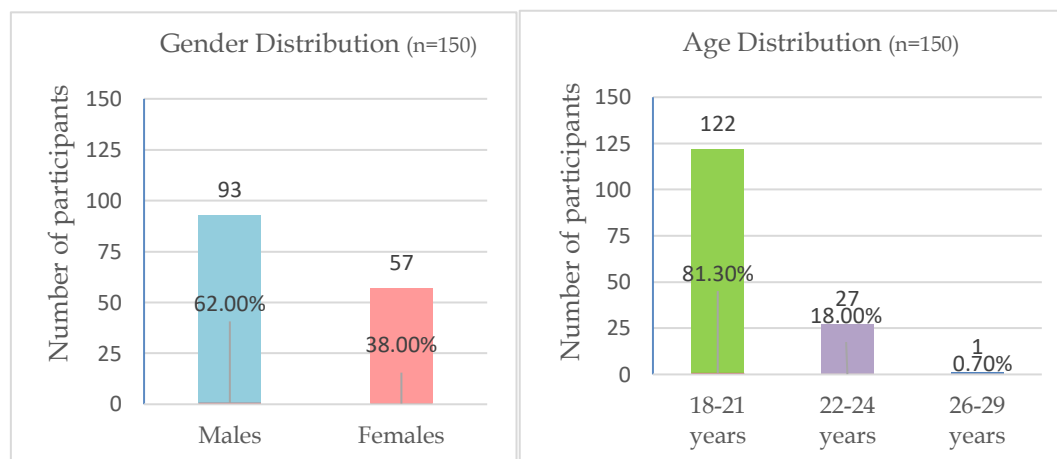


Figure 2: Characteristics among undergraduate vocational teacher students (n = 150)

4.2 Mental Well-Being Analysis Results

The results of the mental well-being analysis are presented in Table 2. The overall mean score for mental well-being was high ($M = 3.62, SD = 0.30$). When considering each dimension, positive relations with others had the highest mean score ($M = 3.79, SD = 0.43$), followed by purpose in life ($M = 3.71, SD = 0.34$) and personal growth ($M = 3.70, SD = 0.36$). The dimension with the lowest mean score was environmental mastery ($M = 3.33, SD = 0.42$). Based on these findings, students have more interpersonal relationships and a sense of life purpose; however, lower environmental mastery suggests some problems in coping with academic situations in educational settings.

Table 2: Mean and standard deviation of mental well-being among student vocational teachers (n = 150)

Influencing Factors	M	S	Levels
1. Self-acceptance (SELF)	3.65	0.46	High
2. Positive relations with others (POSI)	3.79	0.43	High
3. Decision autonomy (AUTO)	3.46	0.41	High
4. Environmental mastery (ENVI)	3.33	0.42	Moderate
5. Personal growth (PER)	3.70	0.36	High
6. Purpose in life (LIFE)	3.71	0.34	High
Total	3.62	0.30	High

4.3 Pearson Correlation Analysis Results

This subsection presents the results of the preliminary analysis examining the relationships among the study variables prior to regression analysis. Table 3 presents the results of the Pearson correlation analysis among the six independent variables (Luo et al., 2025). These included self-acceptance (SELF), positive relations with others (POSI), autonomy (AUTO), environmental mastery (ENVI), personal growth (PER), purpose in life (LIFE), and the dependent variable, mental well-being (MENTAL).

Based on the findings, all of the independent variables had positive and significant correlations with mental well-being at the .05 level. Correlation coefficients were moderately and highly correlated ($r = .312$ to $.851$). The most correlated variables were ENVI and MENTAL ($r = .851$). The least correlated independent variable is AUTO and PER ($r = .312$). These results suggest that all of the psychological dimensions are correlated with mental well-being and can be used in the regression analysis. Furthermore, the high correlation of environmental mastery with mental well-being suggests the need to take the individuals' ability to control the environment into consideration when considering their psychological well-being.

Table 3: Pearson correlation matrix among study variables

Variable	SELF	POSI	AUTO	ENVI	PER	LIFE	MENTAL
SELF	1.000						
POSI	.576*	1.000					
AUTO	.482*	.424*	1.000				
ENVI	.635*	.595*	.563*	1.000			
PER	.466*	.366*	.312*	.434*	1.000		
LIFE	.523*	.391*	.506*	.614*	.566*	1.000	
MENTAL	.797*	.744*	.718*	.851*	.658*	.795*	1.000
Mean	3.65	3.79	3.46	3.33	3.70	3.71	3.62
S	.70	.74	.64	.76	.54	.78	.53

Note. Dependent variable: Mental, * $P < .05$, self-acceptance (SELF), positive relations with others (POSI), autonomy (AUTO), environmental mastery (ENVI), personal growth (PER), purpose in life (LIFE), mental well-being (MENTAL)

4.4 Multicollinearity Diagnostics and Regression Assumptions

Prior to conducting the multiple regression analysis, multicollinearity diagnostics were performed to examine the relationships among the independent variables. The results, presented in Table 4, indicate that tolerance values ranged from .406 to .633, while variance inflation factor (VIF) values ranged from 1.579 to 2.464. These values fall within acceptable thresholds (tolerance $> .10$; VIF < 10), confirming that multicollinearity was not a concern. Accordingly, multiple regression analysis was applied.

4.5 Multiple Regression Analysis Results

The results of the regression analysis revealed that all six independent variables – self-acceptance (SELF), positive relations with others (POSI), autonomy (AUTO), environmental mastery (ENVI), personal growth (PER), and purpose in life

(LIFE)—had a statistically significant positive effect on the mental well-being of undergraduate students at the .05 level. Among these variables, purpose in life showed the strongest positive influence on mental well-being ($\beta = .251$), followed by positive relations with others ($\beta = .241$), environmental mastery ($\beta = .239$), autonomy ($\beta = .207$), self-acceptance ($\beta = .198$), and personal growth ($\beta = .168$), respectively.

All six variables were significantly correlated with mental well-being ($R = .999$). The results show that the model accounted for 99.8% of the variation in undergraduates' mental well-being ($R^2 = .998$). The high coefficient of determination indicates that all six psychological factors, taken together, provide an almost complete explanation of mental well-being among the respondents. In other words, it shows a strong fit between the proposed model and changes in mental well-being in this population. Moreover, such a high R^2 can be considered reliable because the tolerance values (.406-.633) and VIF values (1.579-2.464) did not exceed the acceptable thresholds, indicating that multicollinearity is not present in this model.

Table 4: Results of the multiple regression analysis of study factors influencing the mental well-being of undergraduate students

Variable	b	SE _b	β	t	p-value	Tolerance	VIF
Constant	.029	.015		1.957	.052		
SELF	.150	.004	.198	39.310	.001	.489	2.044
POSI	.172	.003	.241	51.598	.001	.570	1.754
AUTO	.172	.004	.207	46.240	.001	.621	1.610
ENVI	.166	.004	.239	43.256	.001	.406	2.464
PER	.164	.004	.168	37.863	.001	.633	1.579
LIFE	.171	.003	.251	49.345	.001	.479	2.087

Note. $R = .999$, $R^2 = .998$, $Adjusted\ R^2 = .998$, $SE_{est} = .023$, $F = 13418.582$, and $p < .001$

4.6 Regression Equations

From the regression analysis, a constant value of .029 was obtained. The raw score prediction equation was as follows:

$$\widehat{MENTAL} = .029 + .172(POSI) + .172(AUTO) + .171(LIFE) + .166(ENVI) + .164(PER) + .150(SELF) \quad (1)$$

The standardized score prediction equation is as follows:

$$\hat{Z}_{MENTAL} = .198(Z_{SELF}) + .241(Z_{POSI}) + .207(Z_{AUTO}) + .239(Z_{ENVI}) + .168(Z_{PER}) + .251(Z_{LIFE}) \quad (2)$$

These equations indicate that all six psychological variables positively contribute to mental well-being, with purpose in life showing the strongest standardized effect, followed by positive relations with others and environmental mastery. The regression model can be used to predict students' mental well-being by substituting observed scores into the equation, enabling educators and practitioners to estimate changes in mental well-being associated with improvements in specific psychological dimensions.

4.7 Practical Application of the Regression Model

From a practical standpoint, the formula serves as an empirical criterion for determining what measures should be taken first. For instance, making efforts toward developing one's purpose in life or improving interpersonal relations is expected to produce more benefits for overall psychological well-being than some other activities. Thus, the proposed model can be employed as a means of decision-making in the implementation of counseling programs and student services in higher education settings (Zong et al., 2023).

5. Discussion

This study provides empirical data on the psychological dimensions associated with the mental well-being of vocational teacher students at a public university in Thailand. The results indicate that the study's undergraduate students have an excellent level of mental well-being ($\bar{x} = 3.62$, $S = 0.30$). Moreover, these results demonstrate the effectiveness of the learning environment in supporting students' overall well-being, especially for those receiving both academic and professional training. This section explains each result in light of the theory and literature review.

5.1 Positive Relations with Others as the Strongest Dimension

For each dimension separately, the highest mean score was obtained for positive relations with others ($M = 3.79$, $SD = 0.43$). The result highlights the importance of the higher education institution as a learning environment, which focuses not only on academic knowledge acquisition but also on the development of interpersonal relationships in collaborative learning activities, including group learning and interaction during lessons (Yu et al., 2024). Within the Faculty of Technical Education, students study at the university and complete teaching practice at schools or colleges, where they interact with fellow student teachers and are supervised by mentors (Sukkamart et al., 2023). Thus, students develop their interpersonal competencies and learn how to coexist in various social settings.

5.1.1 Theoretical interpretation

The above conclusion is consistent with Sullivan's interpersonal theory (Hall & Shearer, 2025), which suggests that relationships are built through social interactions and that good relationships foster trust, satisfaction, and happiness (Ryff, 1989). The process by which the above relationship occurs involves the development of social support systems that regulate and stabilize emotions (Upsher et al., 2023). The learning process for vocational teacher students involves constant interaction with various stakeholders, including teachers, peers, mentor teachers, students, and supervisors.

5.1.2 Comparison with previous research

The above conclusion is consistent with the contention of Upsher et al. (2023), who found that interactive instructional approaches involving students and instructors improve the learning experience and facilitate social integration. Similarly, the research by Yu et al. (2024) suggests a positive correlation between social support and adjustment and psychological well-being among secondary school students.

This study extends the above research findings in vocational teacher education in Thailand.

5.1.3 Contextual analysis

In the context of Thai vocational teacher education, positive interpersonal relations play a particularly important role owing to the collectivist cultural orientation, which emphasizes harmony and interdependence within the community. Students who are successful in their interpersonal relationships with peers and teachers are more likely to cope with the challenges of teaching practices and socialization in the professional environment.

5.2 Environmental Mastery as the Lowest Dimension

However, the mean score for environmental mastery ($\bar{x} = 3.33$, $S = 0.42$) was the lowest, suggesting that students may have difficulty regulating their learning and living environments. These difficulties could stem from challenges in teaching practice, adjustment to new institutional cultures, and the balancing of various academic, professional, and personal demands. These factors may cause stress and affect one's mental well-being, as evidenced by Bakar et al. (2021), who state that environmental pressure, anxiety, and academic problems lead to the deterioration of students' well-being.

5.2.1 Theoretical interpretation

According to Ryff (1989), environment mastery can be described as the ability of individuals to manage the complex environment and make the choice of environment that suits them. For the vocational teacher students, an integrated learning process that includes theoretical learning, practical knowledge, and teaching practice involves adapting to several institutional cultures. This involves cognitive reappraisal of problems, coping skills, and self-regulation.

5.2.2 Contextual analysis

Thai vocational teacher education students experience the transition from the university classroom to the laboratory and then into the teaching practice environment in schools. The university classroom, laboratory, and teaching practice environments have different norms and expectations. Moreover, pressure from parents' expectations regarding their success and future civil service jobs may make it even more difficult for students to master the environment.

5.3 Purpose in Life as the Strongest Associated Dimension

It was found that, among the six dimensions of psychological well-being, a purpose in life exhibited the strongest correlation with mental well-being ($\beta = .251$), followed by positive relations with others ($\beta = .241$) and environmental mastery ($\beta = .239$). It is important to note that a purpose in life emerged as the dominant dimension because vocational education students at the Faculty of Technical Education are oriented towards their future careers.

5.3.1 Theoretical explanation

Students need to have some purpose in their lives, as it helps to form their mental well-being, which corresponds to the theory offered by Ryff (1989), according to which it is crucial to have a purpose in life, which is an important factor

motivating people to achieve some goals and committing them to these. Moreover, goal setting contributes to personal growth and mental well-being (Jain et al., 2025). The underlying principle is the organization of behavior through cognitive and motivational processes.

5.3.2 Comparison with previous studies

This result is in line with the findings of Aslan and Koçak (2025), who contend that family and social influences shape the career choices and life satisfaction of Turkish students. The current research expands on this result by revealing that a purpose in life is especially significant for vocational teacher students in Thailand owing to the stress associated with teacher licensing and civil service tests.

5.3.3 Contextual analysis

Purpose in life can be especially relevant to vocational teacher education in Thailand, as it is closely linked to career issues. When students feel a strong connection between their education and future careers, they can cope with stress and maintain motivation throughout the education process. Thus, the vocational teacher education program should encourage students to identify their career goals and make connections between the learning process and goals.

5.4 Autonomy, Self-Acceptance, and Personal Growth

Autonomy ($\beta = .207$) is another vital element in that students' capacity to make independent decisions is associated with positive mental health (Bucher et al., 2025). It is consistent with Rogers's theory of humanism, which argues that autonomous decisions promote self-respect and individual growth (Dashti et al., 2026), and with the self-determination theory of Ryan and Deci (2000), in which self-determined choices play a vital role in the process of becoming healthy. The process includes experiencing agency and self-determination (Srijundaree et al., 2024). Furthermore, self-acceptance ($\beta = .198$) affects respondents' mental well-being: students who can accept their strengths and weaknesses, especially in academic performance and teaching practice, can better cope with criticism. This was also noted in the studies by Upsher et al. (2023), who point out that an open attitude towards feedback facilitates an individual's personal development through reflective practices.

On the other hand, personal growth ($\beta = .168$) had the least effect on the well-being of the surveyed people. The reason may be that undergraduates are usually more concerned with short-term benefits, such as graduation and preparation for work. In addition, the system of vocational education teacher training in Thailand is influenced by environmental factors, including family expectations for their graduates' future employment and participation in civil service examinations. It is also consistent with research by Ryff (1989), which found that people in this age group pay more attention to social relationships than to their personal growth.

5.5 The Strong Model Fit: $R^2 = .998$

Since the coefficient of determination is very high ($R^2 = .998$), the six psychological dimensions explain mental well-being in the sample almost entirely. This explains how the theoretical interpretation of Ryff's (1989) theory aligns with the regression

results, since this model treats all six psychological dimensions as central aspects of psychological well-being.

5.5.1 Theoretical interpretation

In light of the high R^2 , the results align with Ryff's (1989) original idea of psychological well-being as a multidimensional construct comprising six dimensions. Together, the six dimensions give an overall description of one's psychological functioning. As a result, the mental well-being of vocational teacher students is explained mainly by all six psychological dimensions, not by a single one.

5.5.2 Addressing concerns about conceptual overlap

The initial agreement checks (tolerance: .406-.633; VIF: 1.579-2.464) indicate that multicollinearity is not an issue, suggesting that the high level of explanatory power can be attributed to the combined effect of unique yet similar dimensions. A good model fit is supposed to be a sign of the soundness of the theory put forward by Ryff, rather than as a signal of conceptual similarity.

5.6 Practical Implications for Vocational Teacher Education

There are many practical implications of this study's results for vocational teacher education programs, especially in the Thai context.

5.6.1 Implications for teachers/educators

Firstly, it should be understood that there are a number of psychological factors which have an impact on the well-being of one's students. Teaching methods that incorporate interaction between both parties are much more effective in teaching because not only do they help learn but also assist in socialization (Upsher et al., 2023). It is vital to foster an interactive environment for students to improve their social skills. Secondly, positive feedback should be given for development purposes.

5.6.2 Implications for schools/programs

It is necessary to ensure that vocational teacher education programs include comprehensive systems to promote students' mental health, comprising mental health screening, counselling, and evaluation of intervention effectiveness. It is possible to organize experience-sharing sessions in which mentors share their experiences with prospective teachers. Finally, it is necessary to establish mechanisms to help students improve their skills in mastering the environment.

5.6.3 Implications for policymakers

It is imperative that policymakers understand the significance of mental wellness in the education of vocational teachers and support efforts geared towards ensuring the mental well-being of the students. Funding can facilitate counselling, mental health tests, and the professional development of staff to ensure the mental well-being of the students. Additionally, it is important to take note of the unique needs of vocational teacher students.

5.6.4 Cultural aspects

In the case of Thailand, given the collectivistic cultural orientation, mental well-being programs can be designed to leverage the social networks and support systems available to vocational teacher students. The formation of good relations and social integration can be an effective means for enhancing the mental well-being of vocational teacher students. Moreover, given the importance of having a purpose in life, students can define their career goals.

5.7 Summary of Discussion

To sum up, the results reveal that the mental well-being of vocational teacher students at a Thai public university is related to six psychological facets. These include a sense of purpose in life, positive relationships with others, environmental mastery, autonomy, self-acceptance, and personal growth. A purpose in life is the aspect of psychology which is most closely associated with well-being (Chmiel & Kroplewski, 2025), as it is defined by the profession-oriented training of vocational teachers. Environmental mastery has the lowest mean, which indicates that the students could experience problems with coping with complex situations. Good fitness of the proposed model ($R^2 = .998$) indicates that the conceptualization of Ryff's (1989) theory fits reality well and underscores the need to consider several psychological facets together.

6. Conclusion

The findings indicate that undergraduate vocational teacher students experience a very high level of mental well-being ($\bar{x} = 3.62$, $S = 0.30$). It was also established that all the six psychological dimensions – purpose in life, positive relationships with others, environmental mastery, autonomy, self-acceptance and personal growth – showed statistically significant and positive relationship with mental well-being ($\alpha = .05$). Among these, purpose in life had the highest impact ($\beta = .251$), followed by positive relationships with others ($\beta = .241$), environmental mastery ($\beta = .239$), autonomy ($\beta = .207$), self-acceptance ($\beta = .198$) and personal growth ($\beta = .168$). The model exhibited a very high correlation, with the six factors accounting for 99.8% of the variability in mental well-being ($R^2 = .998$). This indicates a very good model fit.

There are many practical implications of these findings regarding the development of vocational teacher education programs. First, universities need to adopt mental well-being screening measures to detect problems and provide appropriate assistance. Second, counseling programs need to consider the individual characteristics of vocational teachers to address the specific stressors related to teaching practices, the development of technical skills, and preparation for work. Third, forums for sharing experiences with mentor teachers and peers could help students develop supportive social relationships. Finally, institutions need to develop a monitoring and assessment procedure to evaluate the success of well-being interventions and make necessary adjustments based on the data collected.

7. Limitations and Future Research

Several limitations of this study should be noted here. To begin with, the data for this study were gathered from undergraduate vocational teacher students in the Faculty of Technical Education at a Thai public university, which may limit the generalizability of the results to other groups or contexts. Secondly, a cross-sectional design was used in this study, which does not allow for establishing causality between psychological factors and mental health. Thirdly, all the data for this study were gathered using self-report measures, which may introduce social desirability and common method biases, as all variables were measured at a single time point. Finally, the six psychological factors under analysis in this paper are theoretically related.

Future research on the topic would need to address the following limitations: First, future research needs to broaden its scope to compare results and validate them across various professional specializations and universities. Second, longitudinal research is necessary to explore how psychological variables and mental well-being change over time and to identify any temporal relationships. Third, future research needs to involve more than one type of measurement technique, such as qualitative interviews or observations, in addition to the self-report techniques widely used in empirical studies. Fourth, advanced methods of data analysis, such as structural equation modelling (SEM), are to be used to test relationships among deeper structures of the variables involved and potential mediating and moderating effects. Fifth, intervention research should be conducted to assess the effectiveness of programs focused on developing specific psychological dimensions and overall well-being.

8. Conflict of Interest

The authors declare no competing interests. The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendix 1

Topic: Factors Affecting Mental Well-Being of Undergraduate Students, Faculty of Technical Education

Instructions: This questionnaire aims to study the factors affecting the mental well-being of undergraduate students at the Faculty of Technical Education, King Mongkut's University of Technology North Bangkok. This research project is supported by a research grant from the Faculty of Technical Education, King Mongkut's University of Technology North Bangkok. This questionnaire is divided into two parts:

- **Part 1:** General information of respondents
- **Part 2:** Questionnaire on factors affecting mental well-being of undergraduate students

Part 1: General Information of Respondents

Instructions: Please mark ✓ in the box that corresponds to your actual status.

1. Gender

- ☐ 1) Male
- ☐ 2) Female

2. Age

- ☐ 1) 18-21 years
- ☐ 2) 22-24 years
- ☐ 3) 26-29 years
- ☐ 4) 30 years and above

3. Department

- ☐ 1) Mechanical Engineering Education
- ☐ 2) Electrical Engineering Education
- ☐ 3) Civil Engineering Education
- ☐ 4) Computer Education

4. Major/Program

- ☐ 1) Mechanical Engineering (4-year program)
- ☐ 2) Mechatronics and Robotics Engineering (4-year program)
- ☐ 3) Manufacturing and Industrial Engineering (4-year program)
- ☐ 4) Electrical Engineering and Education (5-year program)
- ☐ 5) Electrical Engineering (4-year program)
- ☐ 6) Civil Engineering and Education (5-year program)
- ☐ 7) Computer Technology (4-year program)

Part 2: Questionnaire on Factors Affecting Mental Well-Being of Undergraduate Students

Instructions: Please mark ✓ in the box that corresponds to your opinion. The rating scale is as follows:

Rating	Meaning
5	Strongly agree
4	Slightly agree
3	Neutral/Neither agree nor disagree
2	Disagree
1	Strongly disagree

DIMENSION 1: Self-Acceptance

Item	Statement	5	4	3	2	1
1.1	I feel satisfied with what has happened in my past life.	☐	☐	☐	☐	☐
1.2	I feel confident and accept both my strengths and limitations.	☐	☐	☐	☐	☐
1.3	I feel that many people I know have received better things in life than I have.	☐	☐	☐	☐	☐
1.4	I like and am satisfied with my own personality.	☐	☐	☐	☐	☐
1.5	I feel disappointed with many aspects of what I have to do in my life.	☐	☐	☐	☐	☐
1.6	The attitude I have toward myself may not be as positive as others have toward me.	☐	☐	☐	☐	☐
1.7	When I compare myself to friends or people I know, I feel good about being myself.	☐	☐	☐	☐	☐

DIMENSION 2: Positive Relations with Others

Item	Statement	5	4	3	2	1
2.1	Most friends or people around me view me as a warm and caring person.	☐	☐	☐	☐	☐
2.2	Maintaining relationships with others is difficult and frustrating for me.	☐	☐	☐	☐	☐
2.3	I often feel lonely because I have only a few friends I can confide in in my worries.	☐	☐	☐	☐	☐
2.4	I enjoy conversations and exchanging viewpoints with friends around me.	☐	☐	☐	☐	☐
2.5	Friends often view me as someone who is ready to help others.	☐	☐	☐	☐	☐
2.6	I do not often receive trust from others.	☐	☐	☐	☐	☐
2.7	I can trust my friends, and they can trust me as well.	☐	☐	☐	☐	☐

DIMENSION 3: Autonomy

Item	Statement	5	4	3	2	1
3.1	I am not afraid to express my opinions, even if they contradict the majority view.	☐	☐	☐	☐	☐
3.2	I make decisions about various matters in my life by myself, without being influenced by what others do.	☐	☐	☐	☐	☐
3.3	I am often swayed by people with strong opinions.	☐	☐	☐	☐	☐
3.4	I am confident in my own opinions, even when they go against the majority.	☐	☐	☐	☐	☐
3.5	I feel hesitant to express my opinions on controversial issues.	☐	☐	☐	☐	☐
3.6	I often worry about what others think of me.	☐	☐	☐	☐	☐
3.7	I judge things based on what I consider important, not according to others' values.	☐	☐	☐	☐	☐

DIMENSION 4: Environmental Mastery

Item	Statement	5	4	3	2	1
4.1	I am able to control the situations around me.	☐	☐	☐	☐	☐
4.2	Daily responsibilities often make me feel discouraged.	☐	☐	☐	☐	☐
4.3	I do not enjoy socializing and talking with friends very much.	☐	☐	☐	☐	☐
4.4	I can manage my daily responsibilities quite well.	☐	☐	☐	☐	☐
4.5	I often feel that I have too many responsibilities in life.	☐	☐	☐	☐	☐
4.6	I find it difficult to manage my life in a satisfying way.	☐	☐	☐	☐	☐
4.7	I can create a living environment that suits my preferences.	☐	☐	☐	☐	☐

DIMENSION 5: Personal Growth

Item	Statement	5	4	3	2	1
5.1	I am not interested in organized activities, even if they might give me new perspectives.	☐	☐	☐	☐	☐
5.2	I believe that it is important to have new experiences that challenge my way of thinking.	☐	☐	☐	☐	☐
5.3	I feel that over the past 2-3 years, I have not developed much.	☐	☐	☐	☐	☐
5.4	I feel that I have been developing myself continuously since studying at the Faculty of Technical Education, KMUTNB.	☐	☐	☐	☐	☐
5.5	For me, life is continuous learning, changing, and development.	☐	☐	☐	☐	☐
5.6	I stopped trying to change or develop myself a long time ago.	☐	☐	☐	☐	☐
5.7	I do not enjoy being in new situations that require me to change my usual ways.	☐	☐	☐	☐	☐

DIMENSION 6: Purpose in Life

Item	Statement	5	4	3	2	1
6.1	I live day by day without thinking much about my future.	☐	☐	☐	☐	☐
6.2	I feel that my life has a clear direction and purpose.	☐	☐	☐	☐	☐
6.3	I am not very clear about what I am trying to achieve in life.	☐	☐	☐	☐	☐
6.4	My daily activities seem unimportant and without value.	☐	☐	☐	☐	☐
6.5	I enjoy planning for the future and trying to make those plans a reality.	☐	☐	☐	☐	☐
6.6	Some people live without purpose, but that is not me.	☐	☐	☐	☐	☐
6.7	Sometimes I feel that I have already accomplished all my life goals.	☐	☐	☐	☐	☐

Table A1: Summary of items by dimension

Dimension	Positive Items	Reverse Items	Total
1. Self-acceptance	1.1, 1.2, 1.4, 1.7	1.3, 1.5, 1.6	7
2. Positive relations with others	2.1, 2.4, 2.5, 2.7	2.2, 2.3, 2.6	7
3. Autonomy	3.1, 3.2, 3.4, 3.7	3.3, 3.5, 3.6	7
4. Environmental mastery	4.1, 4.4, 4.7	4.2, 4.3, 4.5, 4.6	7
5. Personal growth	5.2, 5.4, 5.5	5.1, 5.3, 5.6, 5.7	7
6. Purpose in life	6.2, 6.5, 6.6	6.1, 6.3, 6.4, 6.7	7
TOTAL	22 items	20 items	42 items