IMPACT OF GENERAL WELL-BEING ACADEMIC ACHIEVEMENT IN EDUCATION AMONG THE B. ED. TRAINEES IN THE 21ST CENTURY

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ABSTRACT

In the contemporary era, the significance of overall well-being on the academic performance and success of individuals pursuing a Bachelor of Education (B.Ed.) degree has gained widespread recognition among educators and researchers. The challenges posed by rapid technological advancements, increased reliance on information technology, and the evolving landscape towards a knowledge-based society underscore the need for a holistic approach to education. The purpose of this study was to investigate the academic achievement of B.Ed. trainees and the impact on general well-being. The research involved a sample of 645 B.Ed. trainees selected through stratified random sampling, ensuring a proportionate representation. Notably, meta-analysis studies are scarce on this subject, with available research mainly focusing on individual aspects of well-being. Therefore, a meta-analysis study was conducted to examine the association between students' general well-being and academic achievement, drawing data from correlational studies with 645 participants in independent samples. The relationship between academic achievement and the subjective well-being of B.Ed. trainees received considerable attention in this investigation. The data collected were analyzed using the SPSS software, employing mean, standard deviation, and t-tests for data interpretation. The hypotheses were tested using statistical methods, revealing that the majority of B.Ed. trainees experience an average level of academic anxiety but exhibit good physical, mental, and emotional health. No significant difference was observed between male and female trainees in both areas. Furthermore, the study highlighted a notable connection between academic anxiety and health concerning the academic achievement of B.Ed. trainees. These findings hold significant implications for educators, policymakers, and institutions involved in teacher education. The study strongly advocates for the integration of well-being interventions and support systems within educational institutions to enhance the overall educational experience and promote better outcomes for B.Ed. trainees in the 21st century.

Keywords: General Well-Being, Academic Achievement, B.Ed. Trainees, Emotional Well-Being, Mental Health, Meta-analysis, and Academic Anxiety.

1. INTRODUCTION

The well-being of individuals has emerged as a critical factor influencing academic achievement in the fast-paced and competitive educational landscape of the twenty-first century [1]. In the field of education, there has been a growing recognition of the importance of nurturing people's overall well-being in recent years [2]. This paradigm shift underscores that learning cannot be fully realized without considering students' physical, emotional, and social well-being. The same principle applies to B.Ed. candidates, as they not only serve as future educators but also as role models for their students [3]. A comprehensive approach to education is essential in light of the unique challenges presented by the twenty-first century. The world is becoming more interconnected and diverse, and B.Ed. students must navigate an environment where they encounter students with diverse backgrounds, learning preferences, and social experiences [4]. It is imperative for B.Ed. candidates to establish a strong foundation of well-being that enables them to actively engage with their students and create inclusive learning environments to effectively address these challenges. The correlation between overall well-being and academic achievement has garnered significant attention among individuals pursuing a Bachelor of Education (B.Ed.) [5]. These individuals must acquire pedagogical knowledge and teaching techniques while navigating the ever-evolving educational landscape. Meeting academic standards, interacting with diverse student groups, implementing innovative teaching methods, and addressing socio-emotional needs can potentially impact their overall well-being [6]. As a result of the growing realization that education encompasses more than just the acquisition of knowledge, researchers and educators have placed greater emphasis on the holistic development of individuals [7].

In this holistic approach, general well-being, encompassing physical, mental, and emotional facets, plays a crucial role [8]. It encompasses elements such as self-worth, emotional resilience, physical health, and overall life satisfaction [9]. Educational institutions and policymakers need to recognize that these factors have an impact on the academic performance of B.Ed. trainees. By examining how various aspects of general well-being influence different aspects of educational development, we can better understand the intricate interplay between general well-being and academic achievement [10]. The outcomes of this research project may also influence educational practices, policies, and interventions aimed at enhancing the well-being and academic success of future educators [11]. This study aims to elucidate the complex relationships between general well-being and academic achievement among B.Ed. trainees through a comprehensive investigation involving relevant literature, questionnaires, and statistical methodologies [12]. By identifying potential barriers and facilitators to academic success, this research will contribute to the ongoing discourse on creating a supportive learning environment that fosters both well-being and academic progress [13]. The results of this study hold significance not only for B.Ed. candidates but also for educational stakeholders and policymakers [14]. Recognizing the

interdependence of educators' well-being and the well-being and success of their students underscores the importance of nurturing a healthy and supportive learning environment [15]. It encourages the adoption of a more holistic and balanced approach that equips aspiring teachers with the tools they need to excel in the 21st century, both personally and academically, by acknowledging the significance of general well-being in education. The rest of the paper is organized as follows: section 2 presents the literature review, section 3 outlines the problem definition and motivation, and section 4 details the proposed research methodology. Section 5 provides the results and discussion, while section 6 offers the research's conclusion.

2. LITERATURE SURVEY

Alam *et al* [16] investigated school-based interventions developed to support children's happiness, well-being, and academic success using a positive psychology approach that emphasizes the cultivation of positive emotions, resilience, and positive character traits. The results of this study demonstrate the connection between positive psychology programs and students' performance in school, relationships, and overall satisfaction. Bergold *et al* [17], by comparing substantially unselected groups of gifted (n = 50) and average-ability (n = 50) adolescent participants matched through propensity score matching, replicated and expanded upon some of Terman's findings regarding the characteristics of gifted individuals in childhood. The results challenge negative perceptions about gifted students and confirm Terman's conclusions regarding their psychological functioning. According to Kjaergaard *et al* [18], performance grading may play a role in the increasing number of students reporting mental health problems, such as stress. The results suggest that gradeless learning can enhance motivation and reduce surface-level learning but has no significant impact on students' subsequent academic success. El Abiddine *et al* [19] examined the relationship between problematic social media use, individual well-being, and the potential role of insomnia as a mediator. Based on the findings, it can be concluded that sleeplessness appears to be a significant mediator in the connection between problematic social media usage and subjective well-being. Willis *et al* [20] suggested that the mental health of Australia's youth is a cause for concern, with 25% of young people reporting mental health issues within 12 months. These results raise questions about the need for further research on the balance between objectives aimed at improving school performance and concerns for students' well-being among government officials, school administrators, and teacher education providers.

Ahmed *et al* [21] conducted research among Pakistani management students to explore the relationships between emotional intelligence (EI), academic success, and gender disparities. The study's findings demonstrated that EI can serve as a predictor of academic success. Schneider *et al* [22], in their investigation focusing on adults and disregarding reference effects, revealed that the intricate interplay between self-concept and competence, with competence being the stronger predictor, best explained educational achievement. According to Dekker *et al* [23], students experiencing a lack of control and purpose during their transition to postsecondary education may

be prone to both mental health issues and academic underperformance. In the early stages of chatbot development, reliance on predetermined responses from a rule-based approach made them appear less intelligent. Tang *et al* [24] delved into the relationship between character strengths (measured by caring, inquisitiveness, and self-control) and students' end-of-year academic success and eudaimonic well-being. Their findings provided both theoretical and empirical support for interventions aimed at improving students' academic achievements and positive development through character-based approaches. Additionally, the study shed light on how character strengths can influence students' academic success and eudaimonic well-being. Schonert-Reichl *et al* [25] examined the composition and correlation of work satisfaction among teachers (N = 142,280) and principals (N = 8,869). Structural equation modelling using multilevel bifactor models provided strong support for a model that encompasses both specific aspects (e.g., happiness with the profession) and broader work satisfaction indicators.

3. RESEARCH PROBLEM DEFINITION AND MOTIVATION

There is a growing awareness of international, technological, and scientific breakthroughs in the twenty-first century, necessitating strong performance in the education of B.Ed. trainees at all levels of schooling. This study aims to investigate the potential impact of general well-being on the academic achievement of B.Ed. trainees in the twenty-first century. The preparation of future teachers, who will significantly influence the educational experiences of numerous students, commences with teacher education. However, the rigorous and demanding nature of this profession can lead to burnout and reduced effectiveness in the classroom. To create a supportive and successful learning environment that promotes both personal and professional growth, it is crucial to understand the relationship between general well-being and academic achievement among B.Ed. trainees. Students pursuing a B.Ed. must meet rigorous academic standards, gain practical teaching experience, and cope with the pressures associated with entering the teaching profession. The potential adverse effects of stress and burnout on trainees' future teaching effectiveness and professional retention rates cannot be detrimental.

In recent years, there has been a growing recognition of the significance of well-being in educational contexts. Researchers and educators are increasingly aware of the substantial impact that the emotional, physical, and social health of children can have on their overall academic performance and engagement. Recognizing these factors, understanding the variables influencing the academic performance of B.Ed. trainees become essential, as it can lead to the development of methods and interventions that enhance their well-being, thereby benefiting the students they will eventually teach. This research seeks to promote a holistic approach to teacher education that places equal emphasis on the personal growth and academic performance of trainees. It achieves this by examining various dimensions of well-being, including emotional, physical, and psychological aspects. It is crucial to acknowledge how factors such as technological integration, evolving social dynamics, and increasing diversity impact the academic success and well-being of B.Ed. trainees within the rapidly changing landscape of 21st-century education. The primary aim

of this research is to contribute to the broader goal of enhancing teacher education practices and, consequently, the overall quality of education in the 21st century. By addressing these motivations and exploring the relationship between general well-being and academic achievement among B.Ed. trainees, this study seeks to advance our understanding and inform educational strategies for the benefit of both future educators and their students.

4. PROPOSED RESEARCH METHODOLOGY

The suggested research technique employs a mixed-method approach to gain comprehensive insights into how general well-being influences academic achievement among B.Ed. trainees in the twenty-first century. This approach combines quantitative surveys and qualitative interviews to provide a deeper understanding of the relationship between well-being and academic outcomes in the context of teacher education. The primary objective of the research on the general well-being of academic achievement in education among B.Ed. trainees are to examine and comprehend this relationship, aiming to determine whether higher levels of well-being are associated with improved academic performance.
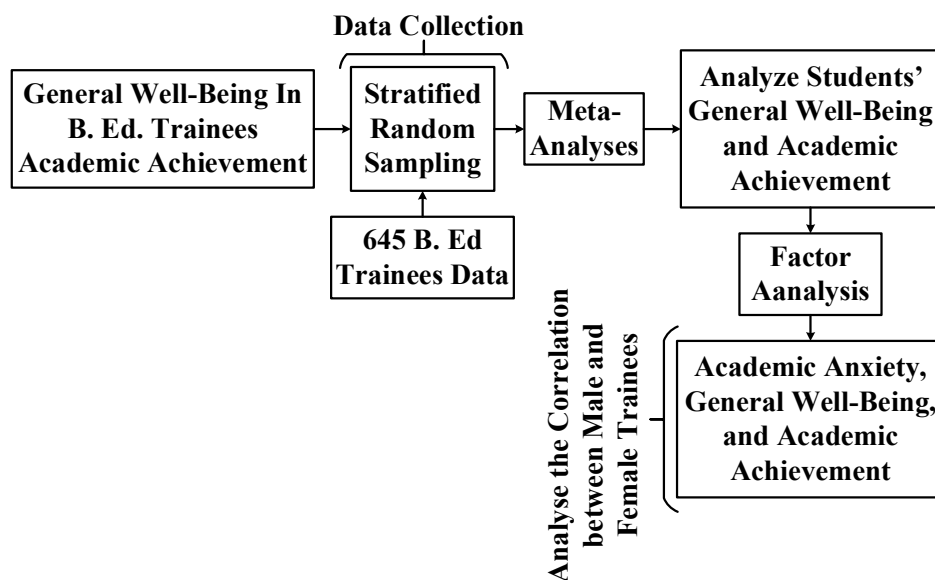

Figure 1: Block Diagram of the Research Work

Figure 1 illustrates the flow diagram of the proposed work. The study's primary objective is to identify and comprehend the variables that influence the well-being of B.Ed. students. This entails an examination of how their well-being is affected by factors such as the learning environment, social relationships, work-life balance, and mental health. The research aims to obtain insight into B.Ed. trainees' perceptions and experiences related to their well-being and its potential impact on their academic journey through qualitative analysis. It aims to deepen our understanding of how the well-being of future educators in the twenty-first century is linked to their preparedness and effectiveness. By accomplishing these objectives, the research aims to

underscore the significance of overall well-being in shaping the academic success and overall growth of B.Ed. trainees. The findings could serve as a foundation for developing more comprehensive and effective teacher preparation programs that prioritize trainees' well-being over their academic development, thereby contributing to the enhancement of the entire educational system.

(a) Research Objective

The main goal of the research is to investigate the impact of trainees' well-being, which includes emotional, physical, social, and psychological dimensions, on their academic performance during their teacher training programs. The research is designed to accomplish the following specific objectives:

- The study seeks to assess the levels of general well-being among B.Ed. trainees, considering various dimensions such as emotional well-being, physical health, mental, and emotional health connections, and academic achievement factors.
- This study finds out the students' academic anxiety level in academic records, and overall performance in teacher training programs.
- To identify correlations between Well-Being and Academic Achievement for male and female students.

(i) Hypothesis of the Study

The hypothesis of general well-being on academic achievement in education among B.Ed. trainees are given as follows.

- There is a positive correlation between male and female students' physical, mental, and emotional health with their academic achievement.
- There is no significant difference between male and female trainees in terms of the level of academic anxiety and their academic achievement.
- There is a significant relationship between academic anxiety and health among B. Ed trainees in terms of academic achievement.

(b) Model of Research

The study employed a combination of descriptive-comparative research and experimental designs to investigate the relationship between well-being and academic achievement among B.Ed. trainees. In the descriptive phase, student profiles were analyzed to assess their problem-solving skills. The comparative aspect involved the comparison of pre-and post-test levels of problem-solving skills. The experimental part evaluated students' performance in chemistry after exposure to a problem-based learning approach. Both qualitative and quantitative approaches were utilized to assess problem-solving skills. To address the multifaceted nature of well-being and minimize

confusion, the study employed meta-analysis, which offers a comprehensive approach. The research primarily focused on examining the relationship between well-being and academic achievement. While well-being encompasses various domains and components, the study concentrated on the most frequently studied domains: subjective, psychological, social, cognitive, and physical well-being. It's important to note that well-being extends beyond these domains; however, the aim was to establish a holistic understanding of the relationship between well-being and academic achievement within this meta-analysis. The meta-analysis explored the connections between students' subjective, psychological, social, cognitive, and physical well-being and their academic achievement. The ultimate objective of this study was to synthesize findings across these domains of well-being and uncover their collective impact on academic achievement. Additionally, the research delved into the roles of moderator variables, such as age, academic areas, scale types, school levels, country levels, and publication years and types, to gain deeper insights into the relationship between well-being and academic achievement.

(i) Research Design

This study focused on exploring the correlation between students' general well-being and their academic achievement, utilizing a meta-analysis approach. Meta-analysis involves synthesizing findings from independent research studies and analysing the results statistically. The research adopted a cross-sectional questionnaire survey design and included two distinct groups of participants: first-year B.Ed. trainees and second-year B.Ed. trainees. These participants were enrolled in science classes, encompassing subjects like biology, chemistry, physics, environmental science, and sustainability, with their respective teachers participating in the study. To ensure ethical compliance, the questionnaire research received approval from the relevant ethics committee, and participants were provided with full information regarding the study's purpose and procedures before completing the questionnaire. Voluntary participation was ensured, and strict data confidentiality measures were followed. The completed questionnaires were collected directly from the participants. A total of 645 participants returned to the survey, constituting a substantial sample size. However, it is essential to note that while significant, this sample may not be fully representative of all teachers in the state or other states. A primary objective of this research was to provide government authorities and education systems with a basis for conducting large-scale, well-funded studies to investigate the potential relationship between school performance objectives and addressing student well-being.

(c) Data Collection

For this study, data were collected using a questionnaire, employing convenience stratified random sampling to ensure a representative sample. The questionnaire served as the foundation for both the quantitative and qualitative components of the mixed methods survey. The quantitative portion aimed to investigate teachers' perspectives on the relationships between student well-being and academic performance, while the qualitative aspect sought to gain an understanding of

teachers' personal experiences. To ensure comprehensive coverage, the survey items were designed to assess respondents' perceptions of well-being programs and performance agendas, addressing specific gaps identified in the existing literature. The use of mixed methods allowed for triangulation, enhancing confidence in the data interpretations. The study adopted a phenomenological theoretical perspective, concentrating on teachers' perceptions and experiences. While existing research frequently reports on performance outcomes and well-being statistics, what remains less understood is the viewpoint and experience of teachers concerning students' academic anxiety levels. This study aimed to illuminate this aspect and provide valuable insights into the subject matter.

(i) Sampling Procedure and Sample

The survey involved 645 trainee teachers, comprising 470 students from private colleges and 175 students from government colleges. It was observed that some participants provided multiple responses to single items, leading us to treat those responses as unanswered and subsequently exclude them to maintain data integrity for further analysis. Consequently, a total of 645 usable questionnaires were considered for the study. These students were randomly selected from various colleges, and their ages ranged from 22 to 28 years, with a mean age of 25.5 years. Among the participants, there were 199 male students and 446 female students. The teachers, on average, had a mean age of 35.93 years (SD= 5.65), and their average years of teaching experience was 24 years.

(ii) Procedure

Before the study, informed consent was secured from the participants' parents, and assent was obtained from the participants themselves. Approximately 80% of families consented to participate in the study. Subsequently, a packet of self-report measures was administered to each student by a proficient graduate assistant in a conventional classroom setting, where students were assembled as a group. Clear and consistent verbal and written instructions were given to all participants across the three assessments. Participants were provided with the flexibility to complete the measures at their own pace and were assured of their option to withdraw from the study whenever they deemed it appropriate.

(iii) Academic Achievement Scale Type

In this study, various measurement methods were employed to assess academic achievement. When students' self-reports were utilized to evaluate academic achievement, the scores were categorized as 'subjective grade points'. In instances where the school supplied the academic achievement data, it was categorized as an 'objective grade point'. If a Likert-type scale was employed to measure academic achievement, it was categorized as a 'Likert-type scale'. Additionally, when national, international, or study-specific standardized achievement tests were utilized for assessment, they were categorized as 'standard tests'.

(d) Instrument

The statements in this study were formulated to investigate teachers' viewpoints concerning constructs related to student well-being programs and performance agendas in schools. These items were developed in response to identified gaps in the existing literature, as discussed earlier. Respondents were provided with Likert-type rating scales, allowing them to indicate their level of agreement with each statement. These quantitative items were specifically crafted to address the research question. Within this set, two items were positively framed, while the other two were presented with negative wording. Furthermore, participants were asked to express their opinions on whether a school could effectively combine high performance and a caring environment through an additional Likert-style item. The final seven items in the survey comprised open-ended responses, aiming to collect teachers' perspectives, experiences, and strategies for effectively balancing performance agendas with student well-being concerns. These questions were designed to elicit teachers' viewpoints from a phenomenological theoretical standpoint, delving into their personal experiences rather than focusing on theoretical concepts. These qualitative items were developed to uncover nuanced meanings from the participants' experiences.

(e) Data Analysis

In meta-analysis studies, each research study serves as the unit of analysis and is represented by an effect size. For this specific meta-analysis, the dataset comprised 645 studies. In cases where a study within the dataset contained multiple samples, each group was treated as an independent study for analysis. Subsequently, moderator analysis was conducted to assess variations in mean effect sizes among different groups. The moderator variables considered included the well-being domain, academic achievement scale type, college level, country level, publication year, and average age. Heterogeneity in statistical processes within meta-analyses can be attributed to both sampling error and the distinct characteristics of the individual studies. When analysing the Likert-scaled survey data, SPSS was utilized, with Cronbach's alpha calculated to determine internal consistency and reliability. Analysis of variance (ANOVA) was employed to explore planned and unplanned effects, encompassing interitem and cross-tabulated comparisons, as well as overall effects. To ensure consistency in data analysis, scores for items with negative directions (e.g., 'Well-being initiatives in schools interfere with students' academic performance') were inverted. Planned comparisons were conducted between primary and secondary school teachers, as well as government and nongovernment teachers. The researchers presented quantitative data alongside a narrative interpretation to facilitate comparisons with qualitative data, resulting in consolidated findings. The incorporation of this mixed methods approach enhanced the trustworthiness of the study, with quantitative results corroborating qualitative findings, and qualitative insights expanding the understanding of the quantitative results.

(i) Implementation

The study was conducted with a sample of B.Ed. trainees randomly selected from integrated government and private colleges for the academic year 2022 to 2023. The non-problem-based learning (PBL) group consisted of two classes, totaling 50 students, including 24 males and 26 females. These sections were diverse and taught by different teachers. Conversely, the PBL group also comprised two classes, with a total of 645 students, including 199 males and 446 females. These students attended classes for 240 minutes per week, equivalent to four sessions, and each session lasted for 60 minutes.

5. RESULTS AND DISCUSSION

This study employed inferential statistics to analyse the collected data, including correlation analysis, ANOVA analysis, and chi-square tests. The statistical analysis yielded insights into the first two research hypotheses. Additionally, two null hypotheses were tested, with a significance level set at a margin of error of 0.05. The study's findings are presented in tables, and their interpretations are discussed in detail below.

Table 1: Simulation System Configuration

SPSS Statistical Tool	Version 23.0
Operation System	Windows 10 Home
Memory Capacity	6GB DDR3
Processor	Intel Core i5 @ 3.5GHz

The data treatment and analysis were performed using SPSS version 23, and the results are presented in table 1. Descriptive statistics, including frequency and percent, were employed to profile the respondents. To examine the relationships among the study variables, a Pearson product-moment correlation coefficient was computed, which allowed for the identification of the direction and strength of the linear relationship between academic anxiety, physical, mental, and emotional health, and academic achievement. The findings were then used to interpret the strength of the relationships among the variables. Additionally, based on the reliability analysis, all scales demonstrated acceptable internal consistency, with Cronbach's alphas of 0.759.

(a) Pearson Correlation

The preferred method for assessing a linear relationship between variables is the Pearson correlation coefficient (r). This coefficient quantifies the strength and direction of the connection between two variables and is represented by a numerical value ranging from -1 to 1. The type of correlation utilized in this study is the Pearson correlation coefficient (r).

Table 2: Pearson Correlation Analysis

		BLAA	GLAA	BPB	GPB	BC	GC	BAR	GAR	BSH	GSH	BEB	GEB	BAA	GAA
								Correlations							
BLAA	Pearson Correlation	1	.145**	-.010	.002	-.040	.042	-.008	.011	.066	.027	.008	-.033	.040	.059
	Sig. (2-tailed)		.000	.808	.959	.312	.285	.836	.774	.095	.495	.831	.398	.316	.135

	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
GLAA	Pearson Correlation	.145**	1	.067	.013	.008	-.010	-.035	-.044	.031	.092*	-.031	.098*	.001	.092*
	Sig. (2-tailed)	.000		.087	.738	.840	.798	.376	.269	.425	.019	.426	.012	.982	.019
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
BPB	Pearson Correlation	-.010	.067	1	.154**	-.042	-.028	-.094*	.105**	.018	.008	.010	-.083*	.024	.040
	Sig. (2-tailed)	.808	.087		.000	.284	.479	.017	.008	.640	.833	.795	.035	.548	.312
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
GPB	Pearson Correlation	.002	.013	.154**	1	.098*	-.023	-.088*	-.014	-.042	-.003	.003	.008	.032	.015
	Sig. (2-tailed)	.959	.738	.000		.012	.561	.025	.728	.285	.944	.943	.841	.413	.708
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
BC	Pearson Correlation	-.040	.008	-.042	.098*	1	.119**	-.011	-.050	-.089*	.007	-.052	-.016	.040	.013
	Sig. (2-tailed)	.312	.840	.284	.012		.002	.772	.208	.023	.851	.191	.681	.315	.734
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
GC	Pearson Correlation	.042	-.010	-.028	-.023	.119**	1	.104**	-.031	.089*	.003	-.003	-.013	.028	.020
	Sig. (2-tailed)	.285	.798	.479	.561	.002		.008	.425	.024	.943	.944	.744	.480	.612
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
BAR	Pearson Correlation	-.008	-.035	-.094*	-.088*	-.011	.104**	1	.106**	.008	.007	-.096*	.048	-.017	.021
	Sig. (2-tailed)	.836	.376	.017	.025	.772	.008		.007	.839	.854	.015	.226	.675	.603
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
GAR	Pearson Correlation	.011	-.044	.105**	-.014	-.050	-.031	.106**	1	.149**	.043	-.029	-.005	-.071	.034
	Sig. (2-tailed)	.774	.269	.008	.728	.208	.425	.007		.000	.274	.457	.899	.073	.392
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
BSH	Pearson Correlation	.066	.031	.018	-.042	-.089*	.089*	.008	.149**	1	.060	.050	.027	.066	.000
	Sig. (2-tailed)	.095	.425	.640	.285	.023	.024	.839	.000		.129	.200	.493	.094	.991
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
GSH	Pearson Correlation	.027	.092*	.008	-.003	.007	.003	.007	.043	.060	1	.143**	.042	-.037	.061
	Sig. (2-tailed)	.495	.019	.833	.944	.851	.943	.854	.274	.129		.000	.285	.352	.120
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
BEB	Pearson Correlation	.008	-.031	.010	.003	-.052	-.003	-.096*	-.029	.050	.143**	1	.149**	.005	.047
	Sig. (2-tailed)	.831	.426	.795	.943	.191	.944	.015	.457	.200	.000		.000	.895	.237
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
GEB	Pearson Correlation	-.033	.098*	-.083*	.008	-.016	-.013	.048	-.005	.027	.042	.149**	1	.118**	.012
	Sig. (2-tailed)	.398	.012	.035	.841	.681	.744	.226	.899	.493	.285	.000		.003	.763
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
BAA	Pearson Correlation	.040	.001	.024	.032	.040	.028	-.017	-.071	.066	-.037	.005	.118**	1	.112**
	Sig. (2-tailed)	.316	.982	.548	.413	.315	.480	.675	.073	.094	.352	.895	.003		.004
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646
GAA	Pearson Correlation	.059	.092*	.040	.015	.013	.020	.021	.034	.000	.061	.047	.012	.112**	1
	Sig. (2-tailed)	.135	.019	.312	.708	.734	.612	.603	.392	.991	.120	.237	.763	.004	
	N	646	646	646	646	646	646	646	646	646	646	646	646	646	646

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2 presents the findings of the Pearson Correlation Analysis, which was used to compare the influencing factors and visual preference scores of the landscape. The analysis revealed that the P-values for the six influencing factors, namely BLAA, GLAA, BPB, GPB, BC, and GC, as well as BAR, GAR, BSH, GSH, BEB, GEB, BAA, and GAA, showed positive correlations. These results indicate a strong linear relationship between the individual variables and the scoring outcomes. It's worth noting that the results of the OLS (Ordinary Least Squares) model and the Pearson correlation analysis did not align. In constructing the OLS model, all influencing factors were considered to enhance the adjusted R2 and lower the P-value threshold for each variable by 0.3. Consequently, the final OLS regression model comprised seven components. The study's findings demonstrate a positive correlation between student's anxiety levels and their health with their academic achievement. This suggests that mental, physical, and emotional well-being are positively associated with academic achievement.

(b) Chi-Square Tests Analysis

The chi-squared test is used when two categorical variables are measured for all observations in a dataset, and its purpose is to evaluate whether there is a relationship or independence between these variables.

Table 3: Chi-Square Tests Results

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	613.834[a]	572	.110
Likelihood Ratio	497.449	572	.989
Linear-by-Linear Association	.635	1	.425
N of Valid Cases	646		
a. 615 cells (99.0%) have an expected count of less than 5. The minimum expected count is .00.			

Table 3 presents the results of the chi-square test, with the chi-square statistic recorded as 613.834 in the "Value" column, adjacent to "Pearson Chi-Square." The p-value (.110) is located in the same row under the "Asymptotic Significance (2-sided)" column. To conduct a significance test, we compare the p-value to the pre-defined alpha level, which is typically set at .05. In this case, the p-value is greater than the standard alpha value, indicating a non-significant result. Therefore, the null hypothesis, which proposes that the two variables are independent, is rejected. In simpler terms, the non-significant result suggests that there is no statistically significant association between the two variables in the data.

Table 4: Symmetric Measures of the Research

		Value	Approximate Significance
Nominal by Nominal	Phi	.975	.110
	Cramer's V	.208	.110
N of Valid Cases		646	

The strength of the association between the two variables, referred to as the effect size, is displayed in Symmetric Measures table 4. The Phi coefficient, a widely employed statistic, quantifies this relationship and exhibits a value of 0.975 in this study. A higher Phi coefficient signifies a stronger correlation between the variables. Furthermore, the calculated Cramer's V value is 0.208, with an approximate significance of 0.110, providing additional insights into the relationship between the variables.

Table 5: One-Sample Statistics Test

	N	Mean	Std. Deviation	Std. Error Mean
BLAA	646	19.15	5.967	.235
GLAA	646	19.38	6.358	.250
BPB	646	19.56	5.811	.229
GPB	646	19.49	6.125	.241
BC	646	19.07	5.882	.231
GC	646	18.51	5.848	.230
BAR	646	18.93	5.882	.231
GAR	646	18.71	5.720	.225
BSH	646	19.08	7.509	.295
GSH	646	18.86	5.999	.236
BEB	646	19.03	5.814	.229
GEB	646	18.50	5.931	.233
BAA	646	18.62	6.024	.237
GAA	646	19.14	5.956	.234

Table 5 presents the results of the t-test conducted to assess potential differences between academic anxiety levels, trainees' health, and their achievement. For BPB and GEB, the mean values are 19.56 and 18.50, respectively, with corresponding standard deviations of 5.811 and 5.931. The standard errors for BPB and GEB are calculated to be 0.229 and 0.233, respectively. Moreover, the mean and standard deviation for BAA and GAA are reported as 6.024 and 5.956, respectively, and the standard error mean values are 0.237 and 0.234.

Table 6: T-Test Analysis Results

One-Sample Test

					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
BLAA	-110.117	645	.000	-25.853	-26.31	-25.39
GLAA	-102.396	645	.000	-25.616	-26.11	-25.12
BPB	-111.271	645	.000	-25.438	-25.89	-24.99
GPB	-105.857	645	.000	-25.511	-25.98	-25.04
BC	-112.041	645	.000	-25.930	-26.38	-25.48
GC	-115.119	645	.000	-26.489	-26.94	-26.04
BAR	-112.663	645	.000	-26.071	-26.53	-25.62
GAR	-116.829	645	.000	-26.291	-26.73	-25.85
BSH	-87.727	645	.000	-25.918	-26.50	-25.34
GSH	-110.744	645	.000	-26.139	-26.60	-25.68
BEB	-113.506	645	.000	-25.966	-26.42	-25.52
GEB	-113.558	645	.000	-26.497	-26.96	-26.04
BAA	-111.300	645	.000	-26.379	-26.84	-25.91
GAA	-110.364	645	.000	-25.862	-26.32	-25.40

Table 6 presents the results of the one-sample test. Notably, there exists a significant discrepancy between the lower and higher values of BAA and GAA, with differences ranging from -26.84 to -25.91 and -26.32 to -25.40, respectively. The t-values for BAA and GAA are -98.497 and -92.467, while ME's is -100.122, AI's is -98.566, AJ's is -106.462, and TE's is -111.300 and -110.364, respectively. The particular interest is the highest mean difference observed in GC, which amounts to -25.438. The lower and upper values for GC's mean difference are recorded as -26.94 and -26.04, respectively, with an associated significance value of 0.000.

(c) Reliability Statistics

In addition to providing data on the correlations among the scale's items, the reliability analysis technique generates various commonly used scale reliability measures.

Table 7: Reliability Statistics Results

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.759	.151	14

The reliability statistics results presented in table 7 indicate a moderate, significant, and positive correlation between each dimension of trainees' anxiety levels and their academic achievement. The study emphasizes that both the physical, mental, and emotional health of trainees are likely to have a positive influence on students' academic achievement. The Cronbach's alpha value of 0.759 demonstrates the internal consistency and reliability of the measures used in the study.

Table 8: ANOVA with Friedman's Test

		Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People		27924.859	645	43.294		
Within People	Between Items	965.682[a]	13	74.283	26.484	.015
	Residual	305248.390	8385	36.404		
	Total	306214.071	8398	36.463		
Total		334138.931	9043	36.950		
Grand Mean = 19.00						
a. Kendall's coefficient of concordance W = .003.						

Table 8 displays the results of the ANOVA with Friedman's test. It is customary to present all the components of the F statistic in table 9, as calculating the F statistic involves more extensive computations compared to the statistics of paired or independent samples t-tests. In this instance, the significance value is 0.015, Friedman's Chi-Square value is 26.484, and the grand mean value is 19.00. Consequently, Kendall's coefficient of concordance is calculated as 0.003.
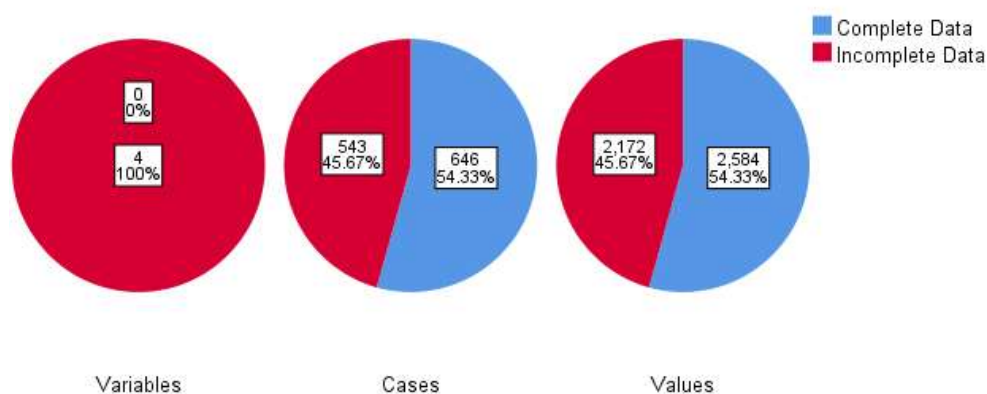

Figure 2: Overall Summary of Missing Value Graph

Figure 2 presents a comprehensive summary of missing values, illustrating both completed and incomplete data for variables, cases, and values. To identify cases with numerous missing

values, a new variable was generated to capture the number of missing values across a group of variables intended for analysis together. In this context, the values for complete and incomplete data are reported as 2.584 and 2.172, representing 54.33% complete data and 45.67% incomplete data.

(d) Hotelling T-Square

The Hotelling T-squared statistic is a commonly used method for testing differences in means in multivariate data. It is especially appropriate when the observations in the multivariate data are well-defined, precise, and exact, following the principles of classical statistics.

Table 9: Hotelling's T-Squared Test

Hotelling's T-Squared	F	df1	df2	Sig
27.336	2.064	13	633	.015

Table 9 contains the results of Hotelling's T-squared test. This test considers the relationship between multiple variables and provides an overall conclusion, even if multiple (single) t-tests yield inconsistent results. Unlike a regular t-test that only reveals which variables differ between groups, Hotelling's T-squared test summarizes the overall between-group differences. In this study, Hotelling's T-squared value is computed as 27.336, and its significance value is 0.015.

(e) Descriptive Statistics

Descriptive statistics offer insights into a variable's central tendency (expected value) and dispersion (distribution of responses). However, it's essential to recognize that SPSS may calculate statistics even if the measure of central tendency and dispersion isn't appropriate for a specific variable.

Table 10: Descriptive Statistics Results

	N	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
BLAA	646	7	31	19.15	.235	5.967	35.608
GLAA	646	5	58	19.38	.250	6.358	40.429
BPB	646	7	31	19.56	.229	5.811	33.763
GPB	646	8	36	19.49	.241	6.125	37.518
BC	646	7	32	19.07	.231	5.882	34.601
GC	646	7	54	18.51	.230	5.848	34.204
BAR	646	7	32	18.93	.231	5.882	34.593

GAR	646	4	31	18.71	.225	5.720	32.715
BSH	646	8	129	19.08	.295	7.509	56.386
GSH	646	7	36	18.86	.236	5.999	35.990
BEB	646	9	32	19.03	.229	5.814	33.807
GEB	646	5	32	18.50	.233	5.931	35.171
BAA	646	9	54	18.62	.237	6.024	36.288
GAA	646	9	32	19.14	.234	5.956	35.474
Valid N (listwise)	646						

Table 10 displays the descriptive statistics, including means and standard deviations, as well as the inter-correlations among trainees' academic anxiety, physical, mental, and emotional health, and academic achievement. The analysis reveals moderate, significant, positive, and linear relationships among the variables. The standard deviation values fall within the range of 5.720 to 7.509, respectively.

(f) Bayesian Factor Analysis

In Bayesian estimation, prior data is utilized to estimate the value of an unknown parameter, resulting in a reduction in the disparity between the estimator and the true value of that parameter.

Table 11: ANOVA[a,b] Test Results

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	1600.322	45	35.563	.999	.477
Residual	21366.707	600	35.611		
Total	22967.029	645			
a. Dependent Variable: BLAA					
b. Model: (Intercept), BEB, GAA, GLAA					

Table 11 displays the outcomes of the ANOVA test. ANOVAs were conducted on academic achievement, academic anxiety, and trainees' health to explore potential differences between the groups, accounting for any missing data on the study variables. The F value obtained for this analysis is 0.999, and the corresponding significance value is 0.477.

Table 12: ANOVA Test of Regression Analysis

BLAA	Sum of Squares	df	Mean Square	F	Sig.	Bayes Factor[a]
Between Groups	17193.548	22	781.525	1.139	.299	.000

Within Groups	427521.888	623	686.231			
Total	444715.436	645				
a. Bayes factor: JZS						

The results of the regression analysis are presented in table 12, which displays an F value of 1.139. The F test is employed to evaluate the adequacy and practicality of the regression model used in the study. With a significance value of 0.299 and a calculated F value of 1.139, it is evident that the calculated F value surpasses the significance value. Consequently, this model exhibits a good goodness of fit. Furthermore, the p-value indicates that musical experience has a significant influence on aesthetic judgment. The Bayes Factor's test produces a result of 0.000, and the mean square results between groups are reported as 781.525, respectively.

Table 13: Bayesian Estimates of Error Variance[a]

	Posterior			95% Credible Interval	
Parameter	**Mode**	**Mean**	**Variance**	**Lower Bound**	**Upper Bound**
Error variance	35.493	35.730	4.284	31.902	40.011
a. Assume standard reference priors.					

In table 13, the reference priors for the regression parameters are presented. The estimated posterior mean of the regression parameter for students' achievement is determined to be 35.730. Based on the observed data, the credible intervals (31.902, 40.011) indicate the area with a 95% Bayesian coverage for the parameters.
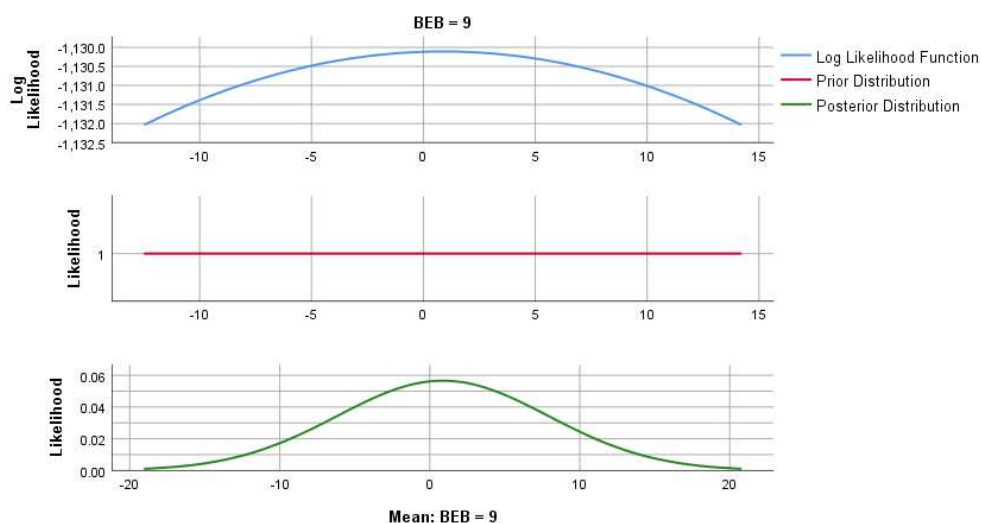

Figure 3: Posterior Distribution Plots of BEB Variable

Figure 3 depicts the posterior distribution plots for BEB. These plots offer valuable insights into the parameters of interest derived from the observed data. Additionally, the output computes the posterior statistics for the variance of the regression error terms.

(g) Hypothesis Test Summary

Hypothesis testing is a fundamental aspect of statistical inference that involves using sample data to make inferences about a population parameter or probability distribution. It begins with formulating a tentative assumption about the parameter or distribution based on the available data.

Table 14: Hypothesis Test Summary Results

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of BLAA is the same across categories of BEB.	Independent-Samples Kruskal-Wallis Test	.489	Retain the null hypothesis.
2	The distribution of GLAA is the same across categories of BEB.	Independent-Samples Kruskal-Wallis Test	.369	Retain the null hypothesis.
3	The distribution of BPB is the same across categories of BEB.	Independent-Samples Kruskal-Wallis Test	.268	Retain the null hypothesis.
4	The distribution of GPB is the same across categories of BEB.	Independent-Samples Kruskal-Wallis Test	.327	Retain the null hypothesis.
5	The distribution of BC is the same across categories of BEB.	Independent-Samples Kruskal-Wallis Test	.874	Retain the null hypothesis.
6	The distribution of GC is the same across categories of BEB.	Independent-Samples Kruskal-Wallis Test	.204	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .050.				

Hypothesis testing entails assessing the validity of a hypothesis through the analysis of sample data, as presented in table 14. This test provides valuable insights into the credibility of the hypothesis. Statistical analysts evaluate a random sample from the population of interest to evaluate the hypothesis.

(h) Independent-Samples Kruskal-Wallis Test

The Kruskal-Wallis test is employed when comparing two or more groups of individuals or items on the same ordinal-level dependent variable. As the comparison involves groups or categories, the independent variable is considered a nominal-level variable.

Table 15: Independent-Samples Kruskal-Wallis Test Summary

Total N	646
Test Statistic	21.516[a,b]
Degree Of Freedom	22
Asymptotic Sig.(2-sided test)	.489
a. The test statistic is adjusted for ties.	
b. Multiple comparisons are not performed because the overall test does not show significant differences across samples.	

Table 15 presents a summary of the independent samples Kruskal-Wallis test. The Kruskal-Wallis test, often referred to as the Kruskal-Wallis H test (named after William Kruskal and W. Allen Wallis), is a non-parametric method used to assess whether samples originate from the same distribution. This test is particularly valuable for comparing two or more independent samples, irrespective of whether their sample sizes are equal or different. In this study, the test statistic is computed as 21.516, with an associated significance value of 0.489.
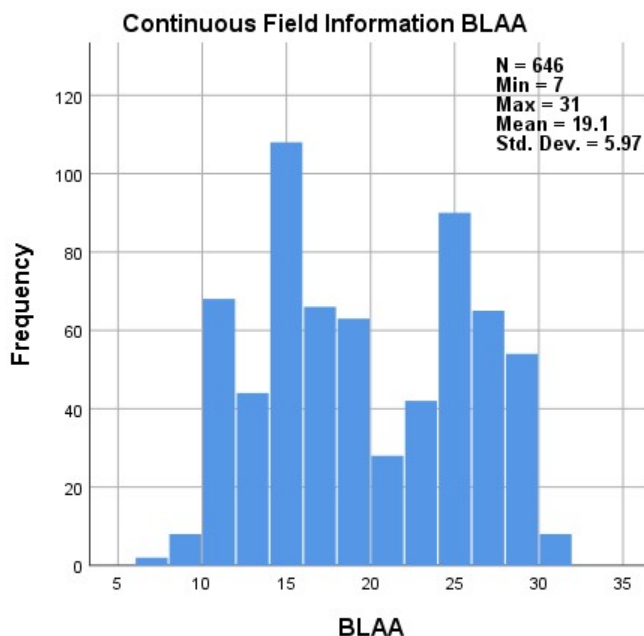

Figure 4: Continuous Field Information for BLAA

Figure 4 illustrates the continuous field information of BLAA, where z-scores from individual studies are represented as standardized residuals. The expectation is that a normal distribution will surround the overall effect size. To identify potential outliers in the effect sizes, the residuals can be binned and compared to a typical normal distribution. The height of each bar in the nine bins, comprising standardized residuals, indicates the proportion of residuals in that specific range.
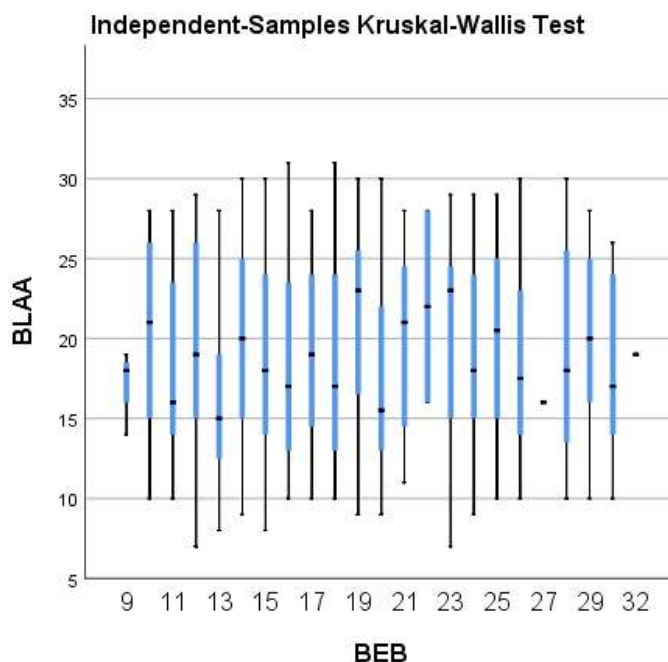

Figure 5: Independent-Samples Kruskal-Wallis Test Graph

Figure 5 depicts the fundamental assumptions that underlie the Kruskal-Wallis test. This test operates under the assumption that the observations within the dataset are independent of one another. Furthermore, it does not necessitate the population distribution to be normally distributed, nor does it demand equal variances among the groups under comparison.

6. RESEARCH CONCLUSION

Academic anxiety, mental health concerns, and various challenges impact the teaching and learning processes. This study explores the correlation between general well-being and academic performance among B.Ed trainees. Using a stratified random sampling approach and a combination of quantitative surveys and qualitative analysis, the research illuminates the importance of well-being in the dynamic realm of teacher education in this era. Data from 645 B.Ed trainees were collected and subjected to a meta-analysis to investigate the relationship between general well-being and academic achievement in these students. The proposed work utilizes the SPSS software to analyse the data. The findings indicate a significant positive correlation between general well-being and academic achievement among B.Ed. trainees. Trainees

with higher levels of well-being, including emotional, physical, and emotional aspects, tend to demonstrate improved academic performance in their teacher training programs. The symmetric Phi value produces 0.975, Cronbach's alpha of 0.759, and Hotelling's T-squared value of 27.336, respectively. The study reveals that there is a positive correlation between male and female trainees in their physical, mental, and emotional health, and their academic achievement. The research also highlights that a supportive and nurturing learning environment plays a crucial role in shaping the well-being of B.Ed. trainees. Institutions that prioritize the well-being of their trainees and provide resources for mental health support and work-life balance are more likely to foster positive academic outcomes. Consequently, the research emphasizes the significance of achieving a healthy work-life balance during teacher training. Trainees who can effectively manage their academic responsibilities alongside personal commitments tend to experience higher well-being levels and better academic outcomes. This study provides valuable insights for educational institutions, policymakers, and educators to create a conducive learning environment that promotes both well-being and academic success among future educators.

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