

THE RESILIENCE OF TEACHER EDUCATION INSTITUTIONS IN A POST-PANDEMIC TIME: A COMPREHENSIVE TEACHER EDUCATION MODEL IN CALABARZON

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Abstract: In the wake of the Covid-19 pandemic, the pandemic has disrupted the traditional education system and has necessitated new methods of teaching and learning in Hybrid-flexible learning. The paper focused on the five areas recommended for consideration by the study of NICEF Europe and Central Asia (2022) in educational development in post-COVID times. First is by determining the extent of implementation in five areas namely access, learning, well-being, safe school, and, nutrition and school feeding, and by testing if these five areas are equally implemented across provinces in the entire region IVA CALABARZON (Cavite, Laguna, Batangas, Rizal, and Quezon). The 1378 respondents were from the different Teacher Education Institutions (TEIs) in the entire Region. Students, faculty, and administrators were the delegation in the Annual TEI convention that assessed the high implementation of resilience evaluation. However, the data was not normality distributed and hence used a Kruskal Wallis H-Test. Statistical differences were established when grouped according to age bracket (p≤0.000) from areas 3, 4, and 5 of resilience, area 4 was tested significantly differently by males and females (p=0.003). Also, all areas of resilience were tested significantly by students, faculty, and administration (p≤0.000). Lastly, all areas were implemented differently across five provinces in the entire region ($p\leq 0.000$). Although assessments were in high regard, TEIs may have uncommon implementation. They may share best practices to attain equal ways and achieve a single outcome in all areas of resilience. The study underscored highlights of resiliency especially the inclusion of safe schools that enable operations in line with national guidance, and also learning that broadly and encompasses all aspects of teaching and learning, assessment and support to socio-emotional learning. Together with the state of wellbeing, access to education and nutrition especially monitoring health protocols since the COVID-19 virus is lurking around the corner and complacency should be discarded.

Keywords: resilience, access, well-being, learning, safe school, nutrition and school feeding, teacher education institution

The resilience of teacher education institutions in the post-pandemic period, especially during the recovery phase after strict COVID-19 quarantine protocols, is important. Teacher education institutions face numerous challenges in ensuring the continuity of education amid crisis and disruption. This includes building resilience in five key areas: Access. Ensuring access to education through alternative learning modalities like online and blended learning (UNESCO, 2020). Teacher education institutions need to strengthen their technological and pedagogical capacity to provide

© 2023 The Author(s) Published under Creative Commons license 4.0 remote learning options (Mundy et al. 2020). Well-being. Addressing the mental health and psychosocial needs of students and teachers who may be experiencing stress, anxiety, and other impacts of the pandemic (Klapproth et al. 2020). Support systems and counseling services are crucial. Safe school. Reopening campuses safely through the implementation of proper health protocols and risk mitigation strategies (Gurria, 2020). This requires coordination, planning, and resources. Learning. Recovering lost learning through remedial programs, curriculum adjustments, and professional development for teachers (Morgan, 2020). Structured interventions are needed to help students catch up. Food and nutrition. Providing nutritious meals and food assistance to students, especially those from disadvantaged backgrounds, who may experience food insecurity during and after the crisis (FAO, 2020). These were the priority areas proposed by the NICEF (2022) in the opening of a next normal classroom ensuring recovery and continuity in teacher education institutions. These shall be strengthened through monitoring and evaluation and the study utilized the association's annual convention to make sure that every TEIs is represented.

Objectives of the Study

The objective of the study is to create a proposed plan for Sustaining the Resilience of Teacher Education Institutions in the region by evaluating the level of its implementation. Specifically, it described the profile of the TEIs respondents in terms of sex, age, classification, and province to determine what lenses the output came from, and to create various levels of receivers when the improved plan is about to implement. Also, to describe the level of resilience implementation in the post-pandemic time midyear of 2022 to present. The last is to test the difference in implementation when grouped according to profile so identify if the plan of contextualization is necessary.

The Framework of the Study

The framework flow of the study is considered a funnel of evaluation as shown in figure 1- the research paradigm.

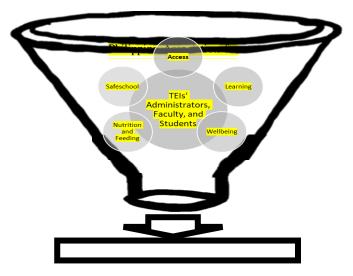


Figure 1. Research Paradigm

Figure 1 depicts the research paradigm about the evaluation of the resilience implementation and recovery period since 2022 when TEIs are being relaxed from their stringent quarantine

implementation and the gradual openness of face-to-face classes is happening, serving as the study's conceptual foundation. The authors used the PAFTE Annual Convention to assemble different TEI stakeholders and evaluate the resilience implementation in partnership with the Philippine Association for Teachers and Educators (PAFTE). As a result, the organization served as the funnel where the TEI administrators, faculty, and students from different provinces in Region IV evaluated the NICEF priority areas. The organization also served as the filtering organization where analysis was done to develop a comprehensive resilience model for TEIs taking into account the assessed values collected from the stakeholders.

Materials and Methods

Research Design

A descriptive comparative research design was used to analyze the implementation of resilience programs in teacher education institutions post-pandemic. The study will compare the level of resilience program implementation among institutions in the region. A descriptive comparative research design is used to compare two or more groups or variables in terms of a characteristic of interest (McMillan & Schumacher, 2014). It aims to describe the current situation or phenomenon as it exists.

The study will involve selecting teacher education institutions that have implemented resilience programs post-pandemic. The institutions included considered were the TEIs participated in the Annual convention within the region. Data will be collected using surveys administered to faculty, administrators, and students at each institution. The surveys will measure the level of implementation of key resilience program elements such as access, learning, well-being, safe school, and nutrition and feeding.

The collected data will be analyzed using descriptive statistics to determine the mean scores for each group on the level of resilience program implementation. The mean scores of all groups were then compared to determine if there are any significant differences between the level of implementation of resilience programs between institutions in different locations within the region and considering some profile variables.

Population and Sampling

The study evaluated participants of the Philippine Association for Teachers and Educators (PAFTE) annual conventional collected in hybrid form. The population considered in the study are the students, faculty, and administrators of teacher education institutions in Region IVA CALABARZON. Hard copies of the survey were provided to the attendees—students, professors, and administrators—while Zoom platform users received a link to the survey's Google form instead. All comments received were handled in the strictest of confidence, and voluntary evaluation was taken into account.

Instruments of the Study

The study acknowledged the Resilience Implementation in a Post-Pandemic Time based on NICEF (2022) priority areas namely, access, learning, wellbeing, safe school, nutrition, and feeding. Each area has at least 10 measuring indicators identifying the extent of implementation of resilience and

recovery period in the post-pandemic time. The instrument is adopted with the acknowledgments of authors and organization throughout the paper since it is readily available online and direct communication with authors is not open even if the present authors of this paper tried to contact them. The expert validation stage was omitted and only Pilot testing was considered with a Cronbach's alpha value of 0.97 which is highly acceptable even if in the Philippine setting.

Data Analysis

Descriptive and non-parametric inferential analyses were used. To describe the profile of the respondents, frequency count, and percent formula were used. To describe the extent of implementation, mean and standard deviation were used since data were treated not in an ordinal scale but in an interval scale with the range of interpretation: 1.0-1.80: Not yet Implementing (NYI); 1.81-2.60: Less Implementing (LI); 2.61-3.40: Moderately Implementing (MI); 3.41-4.2: Implementing(I); 4.21-5.0: Highly Implementing (HI). For description purposes mean was preferred to be used more to be understood by the general audience, but with the normality value of failing its assumption, the median score was utilized to analyze the Kruskal Wallis H-Test. One limitation of a nonparametric test is that the conclusion cannot be generalized and hence the conclusion is only true to that of the specific case. However, literature reviews supported each claim to craft a comprehensive model for TEIs reference in its continuous implementation.

Ethical Considerations

The Philippine Association for Teachers and Educators (PAFTE) organized an Annual Convention that brings together stakeholders in education including students, faculty, administrators, and policymakers. Last 2022, the authors collaborated with PAFTE in which authors conducted a survey questionnaire during the Convention to collect feedback and data from the participants. The authors collected data through survey questionnaires and uphold ethical practices and considerations. This ensured that participants provided information voluntarily and without coercion. The following ethical aspects were considered: Informed consent: Participants were informed about the purpose of the survey and how the data will be used before they agree to take part. They provided voluntary consent and have the right to opt-out at any time. Anonymity and confidentiality: Participants' identities and responses remained anonymous and confidential. Personal information was only collected with consent. Avoid bias: The survey questions should be designed to avoid bias and lead participants towards any particular response. Security of data: Appropriate security measures were in place to protect participants' data and responses. Only authorized authors have access on a need-toknow basis. Option to review results: Participants have the option to receive a summary of the survey results if they wish. This ensures transparency in how the data is used. By following these ethical considerations, PAFTE can conduct its survey questionnaire during the Annual Convention with integrity, gaining the trust of participants and reliable data to inform future efforts. Upholding ethics in data collection is crucial for responsible research practices.

Results and Discussion

Results

The Profile of the Respondents in the Region who assessed the TEI Resilience Implementation in a Post-Pandemic Time.

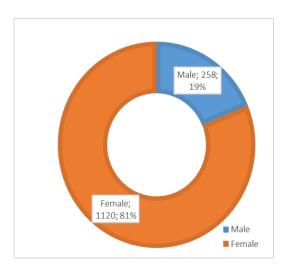


Figure 1. The Distribution of the Respondents in terms of Sex

The study's lenses were based primarily on the views of women since women dominated the men by 62% because women are 81% (n=1120) while men are 19% (n=258). Lanuza et al., (2020) studied the resilience of a local college student using vignettes, from the results, teacher education students were also dominated by females since most women wanted to become teachers more than men.

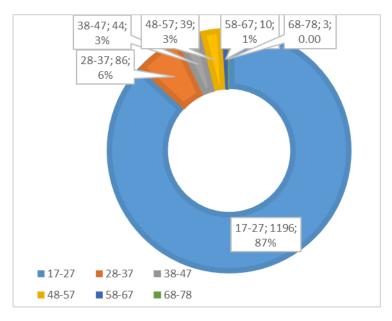


Figure 2. The Distribution of the Respondents in terms of Age Range

Age range was considered as well to determine if the resilience level applies to all ages since in TEIs there are varied age levels, schools are not only for youths but also for those students or persons who made teaching a fallback profession, aside from the teachers and administrator with varied ages, sometimes student's ages vary as well, In figure 2, it is evident that age range of 17-27 were the majority with 87% and the remaining 13% were distributed to age range from 38-78 extreme ages.

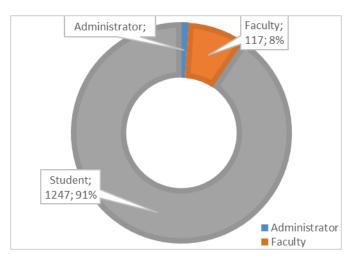


Figure 3. The Distribution of the Respondents in terms of Classification

The very clientele of the TEIs and all educational institutions were the students, in the study, students' assessments were the main focus since they were the primary receiver of resilience implementation. It was participated by 91% (n=1247), 8% (n=117) from the faculty, and 1%(n=14) from the administrators.

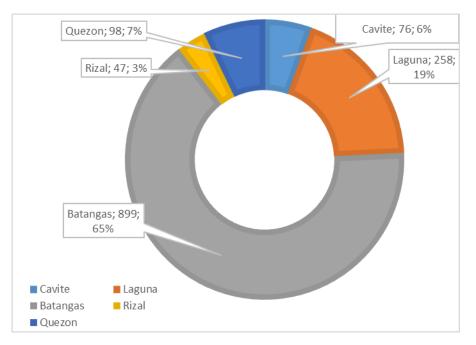


Figure 4. The Distribution of the Respondents in terms of Province

Region IVA is composed of five provinces, although the convention of the Philippine Association for Teachers and Educators was conducted in Laguna, the majority participation came from Batangas at 65% followed by Laguna at 19% while the remaining distributions came from Quezon at 7%, Cavite at 6% and Rizal at 3%. The proposed model of resilience came from the practices of the Batangas province shared with other provinces in the region.

The Level of TEIs Resilience Implementation in a Post-Pandemic Time based on NICEF (2022) priority areas

Table 1 The Me

ean and Median Distribution of the Resilience Implementation							
Areas	Mean	S.D	Median	VI			
Access	4.36	0.71	4.60	HI			
Learning	4.44	0.62	4.67	HI			
Wellbeing	4.44	0.69	4.73	HI			
Safe School	4.47	0.67	4.79	HI			
Nutrition and School Feeding	4.44	0.71	4.75	HI			
Overall Resilience	4.43	0.59	4.59	HI			

Legend: 1.0-1.80: Not yet Implementing (NYI); 1.81-2.60: Less Implementing (LI); 2.61-3.40: Moderately Implementing (MI); 3.41-4.2: Implementing(I); 4.21-5.0: Highly Implementing (HI)

In this section, "access" is used widely to refer to enrollment, preventing non-enrollment, failing to re-enroll, dropping out of school, and supporting efforts to get learners back in school and involved in learning, the assessment is in high regard. There are eighteen indicators measuring the assessment area of resilience, two highest implementing indicators were having the capacity to improve education management information system (EMIS) to identify out-of-school and dropout students, student tracking systems during school transfers, educational cycles, or formal and informal systems, and to enable meaningful data disaggregation, especially by gender (including for migrant and refugee children and children with disabilities) with a computed mean value of 4.40 and building up families knowledge of the importance education and enrollment in school at highest mean of 4.42. While the lowest measure was found in enhancing the identification of students who are absent from class and in danger of dropping out with a 4.30 computed mean. Access mean was 4.36 (n=1378, s.d.=0.71) indicating that enrollment, preventing non-enrollment, failing to re-enroll, leaving school, and supporting initiatives to bring students back in school and actively engaged in learning is in high regard although in the pandemic time.

Table 1 shows the mean of area 2 of Resilience i.e., the "Learning area". This area is used generally to refer to all facets of teaching and learning, assessment, and assistance with socioemotional learning with a mean weight of 4.44 which is also in high regard. Twelve measures were included where creating gender-responsive learning methodologies and other creative teaching methods was highlighted at the highest mean of 4.38, while two measures such as indicator 1 talk about updating curricula and evaluation procedures to take into account contemporary approaches and personalized learning pathways, and indicator 6 talks about bridging the digital divide (based on location, wealth, and gender) were least evaluated but still falls under highly implementing measures with equal means of 4.32.

Continuously in Table 1, area 3 involved well-being with a mean of 4.44 (n=1378, s.d.=0.69). Two strong points were underscored with 4.48 equal means involving a more defined role for schools in

the community's social services network, including information sharing, recognizing families in need, identifying people in danger, and enhancing coordination and cooperation across different student program kinds and providers.

Area 4 regarding safe school in which refers to actions that enable secure school operations following national recommendations. The factors also apply to non-formal learning environments including schools run by the community. This area 4 was the high implementing area of resilience with a mean of 4.48 (s.d.=0.67), Measures number 8 and 10 had 4.53 highest mean of school planning, protocols, and guidance as well as monitoring school preparedness since these measures are already doing even before the pandemic. However, enhancing parental involvement in planning procedures for schools was the least implemented feature of a safe school area with a 4.39 mean.

The last area presented in Table 1 is Area 5 about nutrition and school feeding, by national recommendations, "School Nutrition Programs" refers to all types of school meals or nutrition and feeding programs. Donors like the World Food Program (WFP) will finance or co-finance some of these programs. Some will only use domestic financing in its entirety. The factors should be taken into account in non-formal education settings as well with a grand mean of 4.44 (s.d=0.71). The seventh indicators were highly adopted considering updating national recommendations for school nutrition programs to incorporate COVID-19 safety precautions with 4.47 while the least indicator was resuming school feeding and nutrition programming at 4.36 mean.

When the results from the five resilience domains were merged, a general mean of 4.43 (s.d. = 0.59) was produced along with several implementation-heavy comments. It is encouraging to note that, following assessments made by students, staff, and administrators during the post-pandemic period in the region, the TEI resilience level was highly respectable.

The Comparison of Resilience Levels when grouped according to the Profile

Table 2

The p-value distributions on the Comparison of Resilience Assessment when grouped according to profile.

Areas	Sex	Age Bracket	Classification	Province
Access	0.22	0.104	0.087	0.000**
Learning	0.074	0.216	0.001**	0.000**
Wellbeing	0.061	0.000**	0.000**	0.000**
Safe School	0.003**	0.000**	0.000**	0.000**
Nutrition and School Feeding	0.069	0.000**	0.000**	0.000**
Overall Resilience	0.015*	0.000**	0.000**	0.000**

Legend: *significant at 5%; **significant at 1%

Access, learning, well-being, nutrition, and school feeding as evaluated by males and females may be observed in Table 3 as implementation areas with the same level, with p-values of 0.22, 0.0.74, 0.061,

and 0.069. In these respects, they received equal treatment. However, male and female perceptions of a safe school environment varied, with a p-value of 0.003 indicating this. When the data were categorized by age bracket, only two categories—access and learning—were seen as equally important. Concerning the age distribution of 17 to 78 years, TEIs were able to accommodate educational access and learning with p=values of 0.104 and 0.216, respectively. Area 1 access, whether faculty, students, or administrators of any TEIs in the area, is the final equally implemented area and has a p=value of 0.087. However, resilience strategies were applied in various ways across all regions. Given that students, faculty, and administrators all have distinct perspectives on the other four areas, they must all be contextualized as well. Additionally, age bracket dispersion may be the reason for indifference, but three areas must be taken into account when creating implementation plans for improvement.

Discussion

Of the 1378 teacher education respondents from Region IVA who attended the Philippine Association for Teachers and Educators Annual Convention 2022 to evaluate the implementation of resilience in a post-pandemic time, the results show that the majority of attendees were young female students. The demographic profiles provide valuable insights into drafting an effective teacher education institutional resilience implementation model.

The literature suggests that understanding the profiles of teachers and educators is crucial in developing resilience-building strategies tailored to their needs (García-Ros et al. 2019; Mansfield et al. 2016). The high proportion of female student respondents indicates that interventions should consider the specific challenges faced by young women in the teaching profession (Day & Hong, 2016; O'Connor et al. 2019). The dominance of students also points to the importance of resilience training early in teachers' careers to build capacity for the demands of the job (Johnson et al. 2014; Pietarinen et al. 2013).

The mostly virtual participation highlights the relevance of resilience in the digital era, with the ability to adapt to rapid technological changes becoming increasingly vital for educators (García-Ros et al. 2019; Serrano & Anderson, 2019). The regional distribution shows the need for a whole-of-institution approach encompassing all levels and units within teacher education institutions across locations (Day & Qing, 2009; Pietarinen et al. 2013).

In summary, the demographic profiles gathered provide valuable insights that can inform the development of a more targeted and effective institutional resilience implementation model for teacher education, focusing on the specific needs of young female student teachers, the value of early-career resilience building, strategies for developing digital resilience, and a systemic approach involving all stakeholders.

Moreover, teacher education institutions have an important role to play in developing resilience among students in the post-pandemic era. Access to education, learning well-being, a safe school environment, and proper nutrition are crucial areas where resilience needs to be built. Education provides opportunities for learning and development that help build resilience in students (Howard et al. 1999). Teacher education institutions should prepare teachers to provide flexible and accessible learning opportunities using both in-person and online modalities. This will help ensure students have continued access to education despite disruptions (OECD, 2020).

Teaching strategies that promote social and emotional learning can improve students' well-being and resilience (CASEL, 2020). Pre-service teachers should be trained in developing social-emotional competencies in students through activities that promote self-awareness, relationship skills, and responsible decision-making. A safe and supportive school environment also contributes to students' resilience (Werner, 2000). Future teachers need preparation in identifying and addressing threats to students' physical and psychological safety.

Proper nutrition is essential for children's cognitive and social development (Winicki & Jemison, 2003). Teacher education must include training on identifying students at risk of malnutrition and connecting them to school feeding programs and community resources. This will help address nutritional barriers that impact learning and resilience (Florence et al. 2008).

In summary, teacher education institutions have an important role in equipping future educators with the knowledge and skills needed to build resilience among students in key areas like access to education, social-emotional learning, school environment, and nutrition (reference list below). A focus on these aspects in teacher preparation programs can make a meaningful difference for students in the post-pandemic era.

Conclusion

The events of the past two years have highlighted the need for resilience in education systems. As we move into a post-pandemic era, there are opportunities to build models that strengthen resilience in key areas.

Access to education will remain critical, with a focus on ensuring all students can continue learning regardless of circumstances. Technology will play an important supporting role, especially for remote and hybrid learning options. Educational institutions must evaluate their digital infrastructure and identify gaps to address.

Student well-being must also be prioritized. Programs that promote social-emotional learning, mental health support, and a sense of community can help students build resilience skills. Educators need resources to identify at-risk students and provide targeted interventions.

School safety measures will need to adapt to new health and hygiene protocols. Institutions must evaluate their facilities, procedures, and crisis management plans to protect students in a post-pandemic environment.

Nutrition and feeding programs for underserved students can help mitigate learning loss due to food insecurity. Schools may consider expanding these services and identifying additional sources of funding to sustain them.

A model that engages female students, ages 17 to 28 across multiple provinces, could help drive progress in these areas. With a focus on implementation, sustainability, and continuous improvement, such a collaborative effort could create a framework for building resilience at both the student and system levels. While challenges will remain, a multi-pronged approach that strengthens access, well-being, safety, and basic needs can help education systems recover and adapt for the years ahead.

Recommendations

The five priority areas of resilience identified by NICEF—access, learning, well-being, safe schools, and food and nutrition—provide a comprehensive model for building resilience in Teacher Education Institutions. Given that TEIs in Region IVA already have high levels of implementation in these areas, sustainability plans should now be the focus. The provincial TEIs in Region IVA adopted different approaches to resilience based on their unique contexts, yet they also share many similarities as members of the same region. The PAFTE association is well-positioned to facilitate the sharing of best practices among these institutions. Strengthening weak areas within the five priority areas should remain a central goal. Access can be improved by expanding remote learning options. Learning outcomes may be bolstered by teacher training on trauma-informed pedagogy. Well-being initiatives like mental health services and staff self-care programs deserve reinforcement. School safety measures and nutrition programs for students and personnel can be expanded where needed. By continuing to implement and refine resilience-building strategies based on the comprehensive NICEF model, with an emphasis on sustainability and sharing best practices, the TEIs of Region IVA can further entrench resilience as a core part of their institutional cultures for years to come. The PAFTE association can play an active role in supporting and coordinating these efforts among its members. With a structured, region-wide approach, these institutions are well-positioned to become models of resilience for other TEIs across the nation.

Acknowledgment

The study acknowledges the Philippine Association for Teacher Education IVA for allowing the researchers to evaluate the resilience level in its Annual Convention 2022.

Declaration of Interest Statement

The authors declare that they have no conflict of interest.

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