

Stress Levels of Pre-Service Teachers: Basis for a Proposed Virtual Dialogue Program (VDP)

Joshua C. Marimuthu
InTouch CX
jcmarimuthu@gmail.com

Banjie G. Sarmiento
Mapua Malayan Colleges Laguna
bgsarmiento@mcl.edu.ph

Mica C. Abad
Morning Star Montessori School Incorporated
martinalanchapie@gmail.com

Neil M. Faustino
InTouch CX
matienzoneil939@gmail.com

Joshua H. Gregorio
InTouch CX
gregoriojoshua920@gmail.com

Marela Marie S. Edillor
Archangel Christian School Incorporated
edillormarelaedillor@gmail.com

Jan Derec T. Punzalan
janderecp@gmail.com

Apolinar G. Callo, Jr.
callohdhon9@gmail.com

Liz Nicole L. Endiza
St. Therese Colege of Arts and Science Inc.
llucena.bos@gmail.com

Dave C. Fajardo
fajjtrick05@gmail.com

Abstract

In response to the increasing COVID-19 cases in the Philippines, the Department of Education (DepEd) and the Commission on Higher Education (CHED) started implementing online classes and modular distance learning. The online mode of learning took its toll on the mental health of the students, mainly because of the increased stress levels. This research aimed to evaluate the effectiveness of a virtual dialogue to reduce the stress levels of pre-service teachers, specifically: (1) determine the social support systems, socio-economic status, and access to online academic resources; (2) identify the sources of stress of pre-service teachers; (3) determine the components of an effective Virtual Dialogue Program (VDP); (4) assess the stress levels before and after the VDP; and, (5) propose the implementation of a VDP as an effective stress-coping strategy. The data were obtained from 15 pre-service teachers under the Bachelor of Elementary Education (BEED) program of Laguna University, A. Y. 2021. The Perceived Stress Scale (PSS-10) by Cohen (1994) was adopted to measure the stress levels. To identify the sources of stress and to determine the components of an effective VDP, structured interviews were conducted. Based on the results, the three greatest sources of stress were: socio-economic factors, academic requirements, and workload. The components of an effective VDP from the most to the least important are: personality of the partner, content of the dialogue, number of sessions, length of each session, and time of day of the dialogue. Results of the Paired Samples T-test showed that there was a significant decrease in the respondents' stress levels after the implementation of a VDP. Therefore, it is recommended to implement a VDP in teacher education institutions to decrease the stress levels of pre-service teachers during and even after the pandemic.

Key words: online, stress, Virtual Dialogue Program

Introduction

The sudden outbreak of the COVID-19 virus pushed schools to a close. As the pandemic caused lockdowns to prevent the virus from spreading, the Department of Education implemented new learning modalities for continuous learning. These changes, however, brought about stress to the students for they are not prepared for this new form of education as well as the institutions that offer it in the Philippines (Rotas & Cahapay, 2021).

To prevent the rapid spread of the infection, the government implemented various policies and health protocols. These include physical distancing, wearing of face mask and face shield, contact tracing, and community quarantine. As a result, various sectors were negatively affected, the economic and educational systems to mention, especially. Face-to-face interactions were indefinitely banned due to the strict protocols, leading companies to let go of some

manpower and for schools to resort to conducting online classes. These events, in turn, affected the socio-economic status and mental, and emotional health of Filipinos.

However, the ones affected the most are the students. The paradigm shift from face-to-face to online forced them to rely on technological resources. Unfortunately, since their parents got laid off from work, maintaining these resources became another challenge. Not all of the families have the privilege of having gadgets or a stable internet connection which quickly became essential.

Despite all of the negativity related to it, stress is something experienced by every person and it may help motivate in finishing certain tasks (Smith, 2020). Thus, stress management strategies prove to be significant especially in an educational setting. Various methods in coping with stress are available; among these is communication. Instead of keeping it all inside, it is more helpful to communicate one's opinions and emotions (Robinson, Smith, & Segal, 2020).

In Laguna University College of Education (LU-COED), most students are experiencing the hardships brought about by this digital classroom age. Being teacher education students, the BEEd-4 pre-service teachers were required to conduct demonstration teachings wherein the most common instructional material is PowerPoint presentation. Pre-service Teachers refer to the fourth-year Bachelor of Elementary Education students of Laguna University College of Education A. Y. 2020-2021 who were trained by their respective mentors.

However, gadgets and internet connectivity are needed to create a decent presentation. The lack of one or both greatly adds to the stress experienced by these students, among other factors. This challenge led the researchers to introduce a VDP (*Virtual Dialogue Program*) that refers to one-on-one 30- to 60-minute video-call sessions via Facebook Messenger for three consecutive days.

This study aimed to evaluate the effectiveness of virtual dialogue as a stress-coping strategy of Pre-service Teachers of LU-COED. Specifically, this study sought to: (1) determine the social support system, socio-economic status, and levels of access to online academic resources of the pre-service teachers; (2) identify the sources of stress of pre-service teachers; (3) determine the components of an effective VDP; (4) assess the stress levels of the pre-service teachers vis-à-vis before and after the intervention program; and (5) propose the implementation of a VDP as an effective stress-coping strategy for pre-service teachers.

The sudden pandemic caused by COVID-19 struck everyone unexpectedly, and it affected the socio-economic status and mental and emotional health of not only the teachers but also the students. Furthermore, sparse studies have been done regarding the effectiveness of digital communication as a stress-coping strategy during the pandemic, given that it only occurred recently. As timely as it is, this study focused on the effectiveness of a VDP as an appropriate coping strategy for stress management especially during the pandemic. The pre-service teachers' the problems encountered during transition from online distance learning to in person modality is not within the scope of this study.

Theoretical Framework

The Transactional Theory of Stress and Coping was used by the researchers to support this study. The theory states that stress by itself cannot negatively affect a person unless it is deemed significant enough to have its effect (Lazarus & Folkman, 1987 as cited in Asadi Shavaki, et al., 2020). This involves several processes: primary appraisal (initial analysis of stress); secondary appraisal (analysis of capacity to alter situation and emotional response); coping strategies (efforts to reduce stress); mediators (information-seeking, optimism, or social support); and, coping outcome (result of coping with stress).

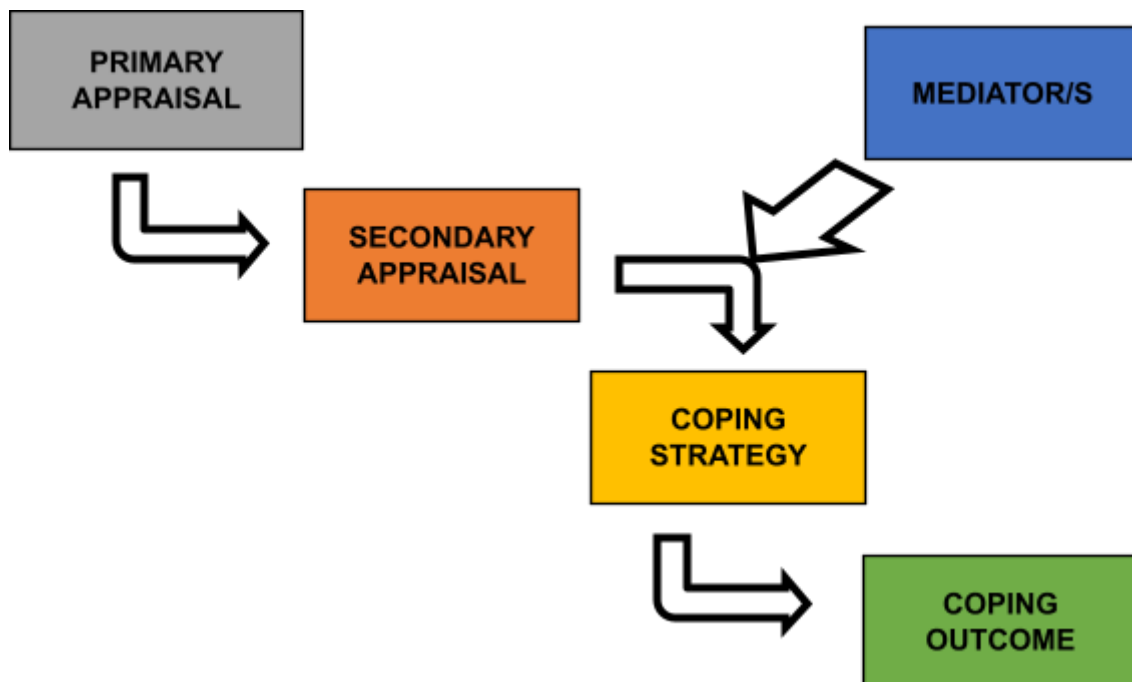


Figure 1. Theoretical Framework (adopted and modified from Lazarus & Folkman, 1987 as cited in Asadi Shavaki, et al., 2020)

Methodology

Research Design

A descriptive research design was conducted to effectively investigate the stress levels of the pre-service teachers before and after the intervention, the VDP. This research design was utilized due to the fact that the study concerns itself with the gathering and interpreting of data in numerical form (Bhandari, 2021) and focuses on a causal (cause-and-effect) relationship (Mitchell, 2016). Quantitative data were also collected to identify the sources of stress of pre-service teachers and to determine the characteristics of an effective VDP.

Research Locale

The study was conducted at Laguna University that included the BEED-4 pre-service teachers from the College of Education as respondents. The study was conducted online due to the pandemic, with the researchers' and participants' well-being in mind.

Sample Size of the Study

Fifteen pre-service teachers under the Bachelor of Elementary Education (BEED) Program of Laguna University, Academic Year 2020-2021 served as the respondents of this study. They were only 15 because they were selected using purposive sampling. They were purposely selected because they were the students in the class who have access to gadgets and internet connectivity.

Research Instruments

The research instruments consisted of three parts. The first part consists of several items which gather the respondents' profiles in terms of social support system, socio-economic status, and access to online academic resources. The second and third parts consist of items adopted and modified from the Perceived Stress Scale (PSS-10). This standardized test by Sheldon Cohen (1994), is composed of ten items used to measure stress level. The PSS-10 was adopted and modified to quantify the stress levels of the pre-service teachers before and after conducting the VDP. In scoring the tests, each answer corresponds to a score: an answer of 0 will get 1 point; 1 will get 2 points; 2 will get 3 points; 3 will get 4 points; and, 4 will get 5 points. Higher points mean higher stress levels. Items with asterisks (*), however, are positive statements, and thus, the scores are reversed—0 will get 5 points, 1 will get 4 points, 2 will get 3 points, 3 will get 2 points, and 4 will get a point.

Data Gathering Procedure

The study underwent three stages towards completion:

- (1) Planning Stage.** The Perceived Stress Scale (PSS-10) by Sheldon Cohen (1994) was adopted and modified to develop the questionnaires. The pre-test was constructed to determine the stress level of the respondents before the conduct of the Virtual Dialogue Program (VDP). The post-test consists of similar PSS-10 questions but were re-arranged.

The VDP is characterized as one-on-one 30 to 60 minutes video calls via Facebook Messenger with a partner whom they are comfortable with every 8 o'clock in the evening for three consecutive days. The chosen person or coach became their conversation partner for the whole program. The topics included in the VDP were events, interactions, changes, and other factors that were considered stressors by the respondents. The role of the coach was to listen and provide advice on how to deal with stress.

(2) Development Stage. The first questionnaire dealt with the demographic profile of the respondents while the second questionnaire consists of the PSS-10 questions. The VDP was conducted for three consecutive days. On the 4th day, the post-test was given to the respondents. A structured interview questionnaire was also used to identify the sources of stress of the pre-service teachers and to determine the components of an effective VDP.

(3) Validation Stage. This stage includes the evaluation of the pre-test, post-test, and structured interview by two experts in the field of education. Revisions were made based on the comments and suggestions of the validators. This stage was before administering the questionnaires via Google forms.

Data Analysis

The responses made by the pre-service teachers describing their socio-economic statuses, social support systems, access to online academic resources, and stress levels were presented. For instance: people with whom they can be comfortably open with; number of household members; monthly family income; online academic resources available; and, the stress scale adopted and modified from the PSS-10 by Sheldon Cohen (1994). In providing the overview of these data, a summary was created.

- a. People with Whom I can be Comfortably Open with
 - 0 – None
 - 1 – Some of my friends only
 - 2 – Some of my family members only
 - 3 – Some of my friends and family members
 - 4 – Most of my friends and some of my family members
 - 5 – Some of my friends and most of my family members
 - 6 – Most of my friends and most of my family members
- b. Monthly Family Income (in Php)
 - 0 – Below 10,000
 - 1 – 10,000 to 29,999



- 2 – 30,000 to 49,999
- 3 – 50,000 to 69,999
- 4 – 70,000 and above
- c. Online Academic Resources Available
 - 0 – None
 - 1 – Smartphone only
 - 2 – Smartphone and stable internet connection
 - 3 – Smartphone and laptop/desktop only
 - 4 – Smartphone, laptop/desktop, and stable internet connection
- d. Perceived Stress Scale (adopted and modified from the PSS-10 by Sheldon Cohen, 1994)
 - 0 – Never
 - 1 – Almost never
 - 2 – Sometimes
 - 3 – Fairly often
 - 4 – Very often

Responses to the questionnaires were summarized and statistically analyzed. Descriptive statistics such as frequency distribution, mean, and percentage were considered. To determine if there is a correlation between the results before and after the virtual dialogue program, the paired sample T-Test was utilized.

Results and Discussion

Tables 1.1, 1.2, and 1.3 reveal the results of the pre-service teachers’ personal profiles in terms of social support system, socio-economic status, and access to online academic resources.

Table 1.1. Pre-service teachers’ profile in terms of social support system

Social Support System	Frequency	Percentage
High	3	20%
Average	10	66.67%
Low	2	13.33%
TOTAL	15	100%

In terms of a social support system or having a family or friends that provides mental and emotional assistance, Table 1.1 shows that most of the pre-service teachers have an average support system, with frequency of 10 or 66.67% of the total. Twenty percent (3) had a high support system while 13.33% (2) had a low support system.

The APA Dictionary of Psychology (n.d.) defined social support as the provision of assistance or comfort to others, typically to help them cope with biological, psychological, and social stressors. On the other hand, Cohen and McKay (2020) defined it as the mechanisms by which interpersonal relationships presumably buffer one against a stressful environment. Social support can be in the form of emotional support, instrumental or material support, informative support, and social company (Camara, Bacigalupe, & Padilla, 2020).

Furthermore, social support is an important factor that can affect mental health (Harandi, Taghinasab, & Nayeri, 2017). In a study conducted by Agbaria and Mokh (2021), they concluded that social support may increase college students' ability to cope with stress actively, adaptively, and efficiently. Also, Labrague, de Los Santos, and Falguera (2021) identified social support as protective factors against loneliness which can lead to stress, anxiety, or depression. Moreover, social support from friends/peers is a significant factor in college students' psychological well-being (Mergal, et al., 2019).

Table 1.2. Pre-service teachers' profile in terms of socio-economic status

Socio-economic status	Frequency	Percentage
High	0	0
Average	1	6.67%
Low	14	93.33%
TOTAL	15	100%

Table 1.2 indicates the socio-economic status of the pre-service teachers. Most of them belong to the low-income class 93.33% (14), with 9 having below 10,000Php and 5 having 10,000-29,999Php monthly income. The average-income class consists of 6.67% (1 respondent), having 30,000-49,999Php monthly family income. None of the pre-service teachers belong to the high-income class.

The increase in stress can be also attributed to the social support system that the respondent is currently experiencing. The social support hypothesis is thought to remove or decrease the negative link between perceived stress and health and quality of life as a result of a chronic disease. It can be then surmised that having an adequate support system helps in lowering stress levels.

Some studies also found that socio-economic status had a big impact on the mental health of an individual. From the current study of Smith (2020) above and beyond present stress and other relevant demographics, socio-economic status was adversely related to involvement in health-risk behaviors and life stress. In addition, households with a greater level of SMD (Severe Mental Disorder) earned less money and had much fewer assets than households

without SMD. Moreover, households with a greater level of disability and depression had lower income and less spending (Hailemichael, et al., 2019). Lower family income and GDP (Gross Domestic Product) were also linked to a greater frequency of severe uncertainty stress (Yang, et al., 2017).

Table 1.3. Pre-service teachers' profile in terms of access to online academic resources.

Access to Resources	Frequency	Percentage
High	6	40%
Average	4	26.67%
Low	5	33.33%
TOTAL	15	100%

Access to online academic resources are shown in Table 3.3. With a frequency of 6 or 40%, most of the respondents have high access to these resources, having ownership of a smartphone, a laptop/desktop computer, and with stable internet connection. Next, 33.33% or 5 respondents have low access, only owning one smartphone each. Four pre-service teachers, making up 26.67%, have average access, with two of them having a smartphone and stable internet connection, and the others having a smartphone and a laptop/desktop computer.

Socio-economic status was linked to perceived stress, and students with a lower socio-economic position had a greater level of perceived stress. Furthermore, lower socio-economic status has also been connected to a hypercortisolism pattern (Urescha, et al., 2015, as cited in Bai, et al., 2021). This means that with lower socio-economic status, cortisol or stress hormone production significantly increases.

Table 2.1. Sources of Stress of Pre-Service Teachers

Source of Stress	Total Score
Socio-economic factors	22
Academic load	37
Availability of academic resources	40
Relationship with family, relatives, and loved ones	60
Health status	66

In Table 2.1, the source of stress with the lowest score will be the most impactful and the one with the lowest will be the least impactful. From the data gathered, the sources of stress

from most impactful to least impactful are: socio-economic factors (22), academic requirements and workload (37); availability of academic resources (40); relationship with family, relatives, and loved ones (60); and, physiological and psychological well-being (66). A study by Prendergast, Ní Dhuinn, and Loxley (2021) showed that financial difficulties have a direct effect on the levels of stress experienced by pre-service teachers, with those of lower economic status experiencing higher levels of stress than those with higher financial capabilities.

In addition to the pre-service teacher’s general responses, there are more specific causes of stress among the students as stated by the University of St. Andrews (2021). These are returning to study, pressure of combining paid work and study, difficulty in organizing work, poor time management, leaving assignments to the last minute, out of control debts, poor housing, overcrowding, noise and adjusting to life in a new environment or even country.

Table 3.1. Components of an Effective Virtual Dialogue Program

Component	Total Score
Personality of the partner	15
Content of the dialogue	44
Length of each session	55
Time of the dialogue	66
Frequency of dialogue sessions	45

Table 3.1 shows the results of the interviews regarding the components of an effective VDP—1 for most important and 5 for least important. As shown in the data above, the most important component is the personality of the partner (15), second is the content of the dialogue (44), third is the frequency/number of the dialogue sessions (45), fourth is the length of each session (55), and least important is the time of day of the dialogue (66). Additionally, 8 (53.33%) suggested a weekly session, 6 (40%) a biweekly routine, and 1 (6.67%) suggested a program consisting of three sessions per week.

Table 4.1 Stress Levels of Pre-Service Teachers

VDP	WEIGHTED MEAN	INTERPRETATION	STRESS LEVEL
Before	3.173	Sometimes	Average
After	2.067	Almost never	Low

As shown in Table 4.1, the overall weighted mean of the pre-test scores is 3.173 with an interpretation of “sometimes”, which falls in the average level. This shows that the pre-service teachers experienced average stress prior to the VDP. The overall weighted mean of the post-test

scores is 2.067 interpreted as “almost never”. The stress levels of the pre-service teachers fall in the low category after the VDP. As evident in these tables, the stress levels of the pre-service teachers went from average to low. With the available data, the Paired Samples T-Test was conducted. The table below shows the values computed for the Paired *t*-test.

Table 5.1. *t*-Test: Paired Two Sample for Means

	Before VDP	After VDP
Mean	3.17	2.07
Variance	0.23	0.09
Observations	15	
Pearson Correlation	0.00	
Hypothesized Mean Difference	0.00	
Df	14	
<i>t</i> -computed	7.50	
P (T<=t) one-tail	0.00	
<i>t</i> -critical one-tail	1.76	
P (T<=t) two-tail	0.00	
<i>t</i> -critical two-tail	2.14	

Table 5.2. Difference between Pre-Service Teachers’ Stress Levels

VDP		<i>t</i> -computed	Df	<i>t</i> -critical	Analysis
Before		7.50	14	2.14	Significant
After					

Table 5.2 shows that the *t*-computed value is 7.50 at a degree of freedom of 14. The *t*-critical value is 2.14. Since *t*-computed is greater than *t*-critical, the null hypothesis was rejected. This shows that there has been a significant decrease in the stress level after the intervention.

Summary and Recommendations

The salient findings of the study were as follows:

1. Profile of the 15 BEEd-4 pre-service teachers in terms of:

1.1. Social support system

Ten (66.67%) of the respondents can open up to 3 family members, 3 (20%) are at high rank which translates to sharing with 4-6 family members, and 2 (13.33%) are at low rank (can open up to 1 family member).

1.2. Socio-economic status

Fourteen (93.33%) belong to the low rank—9 (60%) having monthly family income below 10,000Php and 5 (33.33%) having 10,000 to 29,999Php—and 1 (6.67%) at average with a monthly family income of 30,000 to 49,999Php.

1.3. Access to online academic resources

Six (40%) were at high rank who owned a smartphone, laptop/desktop, and with stable internet connection. Five (33.33%) belonged to a low rank owning only a smartphone each. Four (26.66%) were at an average rank, with 2 (13.33%) having smartphones and with stable internet connection and the other 2 (13.33%) owned both a smartphone and a laptop/desktop each.

2. Sources of stress of the 15 BEEd-4 pre-service teachers:

The main sources of stress were categorized into five: socio-economic factors (ranked 1 by 60%; ranked 2 by 40%), academic requirements and workload (ranked 1 by 13.33%; ranked 2 by 40%; ranked 3 by 26.67%; ranked 4 by 20%), availability of academic resources (ranked 1 by 26.67%; ranked 2 by 20%; ranked 3 by 20%; ranked 4 by 26.67%; ranked 5 by 6.67%), family, relatives, and loved ones (ranked 3 by 33.33%; ranked 4 by 33.33%; ranked 5 by 33.33%), and physiological and psychological well-being (ranked 3 by 20%; ranked 4 by 20%; ranked 5 by 60%).

3. Components of an effective VDP:

The components of an effective VDP were: personality of the partner (ranked 1 by 100%), content of the dialogue (ranked 2 by 60%; ranked 5 by 20%; ranked 4 by 13.33%; ranked 3 by 6.67%), number of sessions (ranked 3 by 40%; ranked 2 by 33.33%; ranked 4 by 20%; ranked 5 by 6.67%), length of each session (ranked 3 by 40%; ranked 4 by 33.33%; ranked 5 by 20%; ranked 2 by 6.67%), and time of day of the dialogue (ranked 5 by 53.33%; ranked 4 by 33.33%; ranked 3 by 13.33%).

4. Stress levels of the 15 BEEd-4 pre-service teachers before the VDP:

Nine out of 15 (60%) of the respondents experienced average (mean of 7.4) to high (mean of 6.1) levels of stress (Stress Scale scores of 30 and above) before the implementation of the virtual dialogue program.

5. Stress levels of the 15 BEEd-4 pre-service teachers after the virtual dialogue program:

Fifteen out of 15 (100%) of the respondents had lower stress level (Stress Scale scores below 30), with the responses mostly being in the low bracket (mean of 10.8).

6. Difference of the stress levels of the 15 BEEd-4 pre-service teachers before and after the implementation of the VDP

The overall t -computed was 7.50 with a degree of freedom of 14, and a t -critical value of 2.14. Since t -computed is greater than t -critical, it was interpreted as significant; therefore, the null hypothesis (There is no significant difference in the stress level after the implementation of a VDP) was rejected.

Based on the findings and conclusions presented, the following recommendations are hereby presented:

1. School administrators in teacher education institutions may implement a VDP to help pre-service teachers cope with stress. The characteristics of an effective VDP included in this study may be used as a basis for the implementation of a VDP in their institution.
2. Future researchers may consider conducting the same study but should increase the sample size or population of the study to improve the accuracy of the results.
3. To improve the accuracy of the post-test results, the duration of the VDP should be extended.
4. To extend the coverage and strengthen the results of the study, respondents from other schools should be included.
5. Qualitative data can be included to further explain the respondents' answers to the ten-item questionnaire adopted from the PSS-10.

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