

ANALYSIS OF THE FACTOR STRUCTURE OF FILIPINO TEACHERS' PROFESSIONAL COMPETENCIES AMIDST PANDEMIC

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ABSTRACT

This study on the integrated findings of an exploratory sequential mixed methods research design examined the teachers' professional competencies amidst pandemic. The exploratory sequential mixed method design is characterized by an initial qualitative phase of data collection and analysis, followed by a phase of quantitative phase of data collection analysis, with a final phase of integration or linking of data from two separate strands of data. More specifically, it aimed to construct, develop and evaluate the teachers' professional competencies amidst pandemic scale. In the qualitative phase, there were seven teachers who participated in the in-depth interview and ten teachers participated in the focus group discussion. There were three themes that emerged from the interview that put emphasis on acknowledging the students' need, technological competence and knowledge on the curriculum guide. A 20-item teachers' professional competencies amidst pandemic scale was also constructed based from the results of the interview, which was subjected to the quantitative phase. In the quantitative phase, 200 questionnaire responses were analyze for exploratory factor analysis (EFA). Results showed three underlying dimension of teachers' professional competencies amidst pandemic. A total of three themes on teachers' professional competencies amidst pandemic questionnaire was developed which are acknowledging the students' need with a total of six items, technological competence with a total of seven items and knowledge on the curriculum guide with a total of seven items and the overall the scale has a total of 20-item questionnaire.

Keywords: *Teachers' Professional Competencies, Pandemic, Exploratory Sequential Design, Factor Analysis, Municipality of Carmen, Philippines*

INTRODUCTION

As in charge of transferring a set of organized knowledge, teacher is one essential component of effective student learning process. He/she has a position that influence greatly the success of student learning, since teacher's main function is to design, manage, and evaluate learning (Nadia, 2020). However, this current

context under the threat of the pandemic as a result of COVID-19 is causing a series of transformations in the educational system (that is, from face-to-face teaching to distance-modular teaching). Consequently, processes of assimilation toward new circumstances with a few difficulties, causing situations of high levels of stress among teachers. A survey of more than 10,000 teachers revealed that 92.8% of teachers suffered emotional exhaustion, stress, anguish, or anxiety due to confinement and distance education (Díaz et al., 2020). These excessive bureaucratic tasks, unclear instructions, lack of support in teleworking, and lack of technical means were the main problems pointed out by teachers, as a result, based on Napocao (2016) that this rigorous experimentation can result to a poor competency among teachers. Additionally, it was argued that teachers' lack of sufficient degree of experience in carrying out their obligations, resulted in a poor performance of teachers towards their profession (Mavhundutse, 2019).

Given the current demands of various schools with regard to the teacher's competency amidst of Covid-19 pandemic, the researcher chose to look into this topic. With the gap in research about the competency of teachers under this new learning modalities, this research wanted to expand the knowledge on the situations and the possible remedies to some existing problems on teachers' competencies. This study believed that there is a need of high quality learning experiences for students under this new learning modalities, thus, exploring teacher competency plays an important role in the teaching and learning process to create effective and innovative learning and to provide supports for students to become active, creative and pay attention to their learning.

As such, through this study, teachers can be able to assess themselves to what skills and knowledge they should possess to successfully provide effective learning experiences and processes to students. Since it has been argued that teacher competency determines the level of student learning outcomes. Thus, this study will be an essential tool to sustain the effectiveness of teachers in providing quality learning for students and to give students with better results academic results despite of the changes in the educational system.

FRAMEWORK

This study is anchored on the common theory of Medley (1977). The theory of Medley (1977) has been the most common theory about teacher competence among others. According to Medley (1977), teacher competency was viewed as any single knowledge, skill, professional value position, the professional of which is believed to be relevant to the successful practice of teaching. Competence that teaches believe, know, do referred to specific things, but no others are relative to the effective of these attribution. Competence referred to the repertoire of competences a teacher possessed. Overall competencies are a matter of the degree to which a teacher had mastered a set of individual competencies, some of which were more critical to a judgment of overall competence than others.

The theory of Medley (1977) in relation to teacher competence theory was divided into major components including pre-instruction, presentation, learning environment, student learning and professionalism. Specifically, the pre-instruction pointed out that teacher expectation and instruction planning is an important direction for teaching and achieving desired outcomes. Second, presentation as an essential tool for effective implementation of the instructional learning plan makes most effective use of the opportunity for all students to learn. Third, the learning environment can be support to a safe and stimulating learning plan makes most effective use of the opportunity for student learning and development. Fourth is the student learning, the assessment and instructional adjustments enhances learners' success and desired learning results from teacher and student interaction. Lastly, the professionalism: the behavior and professional involvements, which extended beyond the classroom, better enabled teachers to assist students in the learning.

METHOD

Research design

This study utilized exploratory-sequential methodology. It is an approach that is utilized when a researcher wishes to combine qualitative and quantitative analyses. This two-stage approach is very beneficial for researchers who want to develop a new instrument, taxonomy, or treatment process (Creswell & Plano Clark, 2011). The researcher applies the qualitative (exploratory) findings from the first phase to the construction of the instrument or intervention, which is then tested in the second stage (quantitative).

Respondents

For the preliminary (qualitative) aspect, a total of ten public elementary teachers in the Municipality of Carmen were invited for an in- depth interview and another seven public elementary teachers for focus group discussion. The results of the interview was then be used to identify the emerging themes as well as to generate a questionnaire. The participants was determined using a snowball sampling technique. It is a non-probability method of participant's selection.

In the quantitative measurement, the teacher in the public elementary school in the Municipality of Carmen are the respondents of the study. A total of 200 teachers for exploratory factor analysis and 200 for confirmatory analysis. After the conduct of 400 questionnaires another 30 participants are requested for reliability test.

Instruments

This research formulated an interview guide questions based on the objectives of the study. These interview guide questions were asked to the participants in the interview and during the focus group discussions. This interview provided insights on what are the professional competency of teachers in this new method of learning instruction.

Statistical Tools

The notes that were obtained from in-depth interview was analyzed using exploratory factor analysis. This method emphasizes pinpointing, examining, and recording patterns (“or themes”) within data. Themes are patterns across data sets that are important to description or phenomenon and are associated to a specific research question (Boyatzis, 1998).

RESULTS AND DISCUSSION

Emerging Themes of Teachers’ Professional Competencies amidst Pandemic

There are three themes that emerge from in-depth interview and focus group discussion with selected public elementary school teachers in the Municipality of Carmen that put emphasis on acknowledging the students’ need, technological competence, and knowledge on the curriculum guide.

Construction of Teachers’ Professional Competencies amidst Pandemic

Based from the narratives of the participants, the Table 1 presents the teachers’ workload management skills scale items which are selected based on their frequency of occurrence from the responses in qualitative interviews. This 20-item questionnaire was subjected to data reduction technique using the exploratory factor analysis (EFA). Hence, the number of factors was fixed to three based on the a priori qualitative analysis dimensions.

Table 1
Teachers’ Professional Competencies amidst Pandemic Scale Items

ITEMS

I identify first the learning objectives before planning.

I create realistic assessment timeline.
 I consider the domains of learning in creating assessments.
 I prepare students' lessons based on their needs.
 I make things that can caught students' attention.
 I plan and assess students understanding before planning.
 I carefully plan and deliver the lessons.
 I give examples in line with students' interest and behavior.
 I allow students to ask for clarifications and suggestions.
 I have the skill in using computer in this time.
 I have a strong skills in computer software.
 I am able to navigate in the internet effectively.
 I develop skills in using technological materials like printers, computers, and camera to assist students need.
 I regularly talk with the students.
 I am observant on the changes on the students' behavior.
 I gave counselling to students regarding their attitude.
 I communicate with the child by talking about their feelings.
 I do interval recording, anecdotal recording and reviews on school records to monitor students' need and performance.
 I interview the parents for better understanding of students'.
 I established regular communication with parents.

Dimensions of Teachers' Professional Competencies amidst Pandemic Scale

As shown in the preliminary analysis, it can be generalized that the 20-item teachers' professional competencies amidst pandemic is suitable and adequate for extraction of factors, and thus, ready for factor analysis.

Table 2
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
		1007.02
Bartlett's Test of	Approx. Chi-Square	8
Sphericity	Df	190
	Sig.	.000

Derivation of the Number of Factor Structure

The Table 3 shows the pattern matrix using Principal Axis factoring using Promax rotation with Kaiser Normalization. It can be observed in the results the loading of items in the three factors are above .4. It can be supported by Filed (2005) that .4 is recommended and necessary to obtain the desired factors.

Furthermore, it can be observed that there is no item cross-loading or not loading at all which means that the items best represent their factors. It is emphasized that loadings indicate the degree of correspondence between the variable and the factor, with higher loadings making the variable representative of the factor (Hair et al., 2998).

Table 2. Pattern Matrix

	1	2	3
I identify first the learning objectives before planning.			.439
I create realistic assessment timeline.	.741		
I consider the domains of learning in creating assessments.	.645		
I prepare students' lessons based on their needs.	.793		
I make things that can caught students' attention.	.803		
I plan and assess students understanding before planning.	.706		
I carefully plan and deliver the lessons.			.485
I give examples in line with students' interest and behavior.	.673		
I allow students to ask for clarifications and suggestions.	.478		
I have the skill in using computer in this time.			.523
I have a strong skills in computer software.			.492
I am able to navigate in the internet effectively.			.671
I develop skills in using technological materials like printers, computers, and camera to assist students need.			.782
I regularly talk with the students.			.583
I am observant on the changes on the students' behavior.		.418	
I gave counselling to students regarding their attitude.		.652	
I communicate with the child by talking about their feelings.		.495	
I do interval recording, anecdotal recording and reviews on school records to monitor students' need and performance.		.720	
I interview the parents for better understanding of students'.		.458	
I established regular communication with parents.		.725	

Final Version of Teachers' Professional Competencies amidst Pandemic

The final version of the instrument, which is the output of this study, is represented in the form provided in Table 4. From 20 items, the analysis suggests several issues on face validity based on factor loadings on the items. Items that have small coefficient less than .40 are removed. This is supported by Hair et al. (2010) that those items having no sense and not reflective with the factor can be removed in the model. Also, loading coefficient can be set by the researcher to select only those items that best represents the factor, and those low coefficient may not be included in the factor structure.

Table 4
Teachers' Professional Competencies amidst Pandemic Questionnaire

ITEMS	
Knowledge on the Curriculum Guide	
1	I create realistic assessment timeline.
2	I consider the domains of learning in creating assessments.
3	I prepare students' lessons based on their needs.
4	I make things that can caught students' attention.
5	I plan and assess students understanding before planning.
6	I give examples in line with students' interest and behavior.
7	I allow students to ask for clarifications and suggestions.
Acknowledging the Students' Need	
8	I am observant on the changes on the students' behavior.
9	I gave counselling to students regarding their attitude.
10	I communicate with the child by talking about their feelings.
11	I do interval recording, anecdotal recording and reviews on school records to monitor students' need and performance.
12	I interview the parents for better understanding of students'.
13	I established regular communication with parents.
Technological Competence	
14	I identify first the learning objectives before planning.
15	I carefully plan and deliver the lessons.
16	I develop skills in using technological materials like printers, computers, and camera to assist students need.
17	I have the skill in using computer in this time.
18	I have a strong skills in computer software.
19	I am able to navigate in the internet effectively.
20	I regularly talk with the students.

CONCLUSION

The emerging themes highlight the teachers' professional competencies amidst pandemic which put emphasis on acknowledging the students' need, technological competence and knowledge on the curriculum guide.

The result derived from factor analysis indicates that the teachers' professional competencies amidst pandemic has three factors that includes acknowledging the students' need, technological competence and knowledge on the curriculum guide.

Teachers' professional competencies amidst pandemic with 20 items was develop to measure the factors affecting students' quality of academic performance in modular learning.

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