

A Survey of Multigrade Teaching in PNG Schools

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Chapter One

Introduction

1.1. Research problem statement

The problem at the heart of this research study is multigrade teaching which occurs in rural and remote schools. Multigrade teaching is when two or more classes are combined to work with one teacher throughout a school year. The reasons behind the introduction of multigrade teaching as a form of educational delivery vary. Multigrade teaching is designed to create access to education for all children, overcome a shortage of teachers, implement universal basic education, and increase the participation, completion and literacy rates. Teaching in remote areas has many challenges. A shortage of primary school teachers and facilities continue to be a problem throughout Papua New Guinea, and many schools lack qualified teachers, especially in the more remote communities. Where there are no teachers, schools are often closed, leading to many children not attending school. The provision of well trained teachers is essential if all children, including those from remote villages, are to have access to quality education.



Figure 1.1 PNG children beside a PNG classroom

1.2. Key terms

Multigrade teaching is when two or more classes are combined to work with one teacher throughout a school year.

Classroom management is the competency which relates to the strategies the teacher uses to achieve effective classroom and behaviour management within their class.

Lesson planning relates to the teacher's ability to plan how to implement the syllabuses to enhance teaching and learning in their classroom

Teacher standards define the level of performance or benchmark that is considered to be acceptable for what teachers should know and be able to do.

1.3. Description and context of the problem

This research study is situated within the national education system of Papua New Guinea (Figure 1.2). Papua New Guinea is the most populous nation in the South Pacific Islands region. The people are known as Melanesians. There are more than 800 languages with Motu, Tok Pisin and English being the three official languages. The development of so many languages is a direct result of geographic isolation. People tended to remain within their own tribal boundaries and to develop traditions and languages that differed from other groups around them. More often than not, people living outside a clan's boundary were regarded as traditional enemies and fear of attack or sorcery also restricted movement.

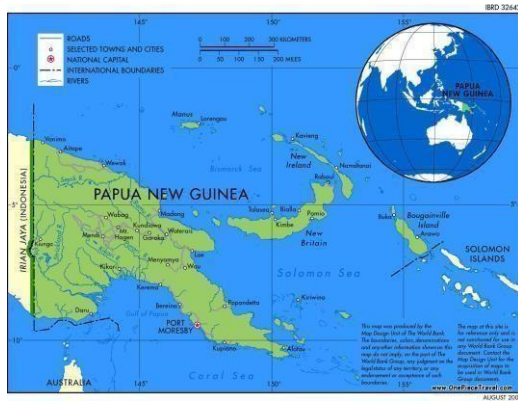


Figure 1.2 Map Papua New Guinea

Rural and remote communities in PNG experience the effects of the socio-cultural, economic and political influences in different and usually more disadvantaged ways compared to the rest of the country. Consequently, elementary and primary schools that are located in the rural and remote communities and in very isolated parts of the country face many challenges. Rather than close a school or only take an enrolment every second year, many schools use the multigrade system. This presents challenges for teachers in lesson planning and preparation and classroom management.

1.4. Motivation to explore the problem

My motivation to explore the problem is that I am a teacher from the Jimi District of the Jiwaka Province in PNG. This is a mountainous rural area with a scattered population and many small schools where multigrade teaching is common. I am interested in exploring the challenges faced by multigrade teachers and raising awareness of existing concerns. The insights I can gain from doing this research study will be of benefit for myself and others.

1.5. Aims of the research study

The study has three aims. First the study aims to explore teachers' concerns about multigrade teaching.

Second, the study aims to explore the types of activities multigrade teachers do that

would be different from tasks done if they only had one grade level to teach.

Third, the study aims to explore the benefits of multigrade teaching.

1.6 Research questions

The overarching question for the study is: How can multi-grade teaching be implemented in PNG schools for effective outcomes?

Supplementary questions are:

1. What are the reasons for some schools having multi-grade classes?
2. What are the challenges for multi-grade teachers compared with teachers of single grades?
3. What factors contribute to success or failure with multi-grade teaching?

1.7. Significance of the study

First, the study is significant to enhance my own understanding of the strategies for successful implementation of multigrade teaching, from the viewpoint of practising teachers.

Second, the study is significant to highlight and raise awareness of challenges, issues and concerns of multigrade teaching which hinder successful outcomes.

Third, the study is significant to create knowledge about multigrade teaching at the current time when so many changes are taking place in the education system.

1.8 .Summary

To summarise, chapter one has highlighted the problem of managing multigrade classes. The chapter has indicated some of the reasons for having multigrade classes. The chapter explains the intention of the study to explore teachers' views on strategies needed to teach multiple classes and challenges involved. Key terms were defined. The aims of the study were stated and the questions underpinning the study. In addition the context and significance of the study were described. The next chapter will review literature which is relevant to the research study.

Chapter Two

Literature review

2.1 .Conceptual map

There were some studies being done in relation to multi-grade teaching in PNG, Asia-Pacific and African countries implicated with similar problems and solution discovered and recommendations made. This study will fill gaps on some areas after identifying the similar literatures studied. The conceptual map below replicates the related research being done and leads the study through.

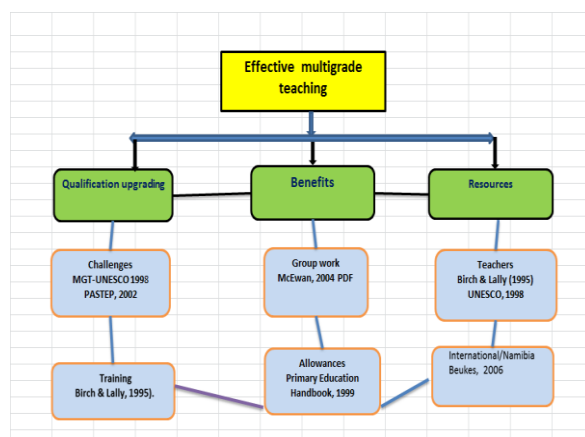


Figure 2.1 Conceptual Map for literature review

2.2 .Reasons for multigrade teaching

Multigrade teaching is an important focus in the education system in PNG, especially for small, isolated, rural schools. By adopting a multigrade approach, access to education can be increased and teacher deployment can be more effective. Teaching in the multigrade classroom requires a sound knowledge of curriculum, strategies for providing student centred and group learning, and a different approach to assessment and evaluation. Teaching in remote areas has many challenges. A shortage of primary school teachers and facilities continue to be a problem throughout Papua New Guinea, and many schools lack qualified teachers, especially in the more remote communities. Where there are no teachers, schools are simply closed, leading to many children not

attending school. The provision of well trained teachers is essential if all children, including those from remote villages, are to have access to quality education.

Low enrolment rates in rural areas and shortage of teachers are two major problems leading to children being turned away from school. In most cases the results are pathetic as children miss out on getting into school at their required age. While some might start later, others give up because they feel out of place with younger children. The re-introduction of multigrade teaching is a policy which allows more access for children. Small class intakes or small groups can be combined to form one class, rather than missing a grade or having bi-annual intakes. Multigrade teaching is designed to assist with the teaching of more than one grade by one teacher. The system will be useful in rural areas where enrolments are low. Schools in urban centres will not need to apply multigrade teaching as enrolments are usually high. Multigrade teaching also strengthens the use of vernacular as specified in the education reforms. Grouping children into language groups encourages

Barbara Masike, Post Courier, 22 August, 2000. Cited by Pastep, 2002, p. 5)

2.3.Payment of allowance

As an incentive for taking a multigrade class in PNG, teachers were meant to receive an allowance. "The Multigrade Teaching Allowance is payable at 10% of the annual gross salary of the position to which the teacher is appointed. It shall be payable on a „one – off“ basis upon the completion of the TSC Form 36 by the teacher" (PASTEP, 2002).

However, some of the approved benefits recommended by the Department of Education in PNG on salary increment are not eventuated. The similar concerns raised by Birch & Lally (1995) on incentives of teachers taken hardship appointments are not given special

consideration. Teachers in isolated placement are subject to particular deprivation in terms of personal and professional status. These negative practices discourage multigrade teachers serving in the most rural areas.

2.4. Teachers' qualification training on multigrade teaching

Training is part of Human Resource Development (HRDP) for Papua New Guinea and other countries. In most rural schools where multigrade class are conducted they need proper multigrade qualified teachers. As stated on Primary Education Handbook 1999, Teacher upgrading is essential because multigrade class is difficult for teachers who are not familiar with the relevant strategies. Teacher has to attend in-service or pre-service on how to teach multigrade. This policy has also been identified the competency development priorities and recommend all Department of Education (DoE) agencies provide effective staff supervision to ensure that the individual development plans are prepared and progress is monitored and support is provided where ever appropriate. The identification further elaborated that the appropriate district in- service on new and enriching programs like multigrade teaching can boost HRDP ahead.

The government also highlighted on PNG effective multigrade teaching, UNESCO conference on MGT in 1988, download 2015 stated__the following multigrade teachers'' characteristics; Well-organized, creative and flexible, willing to work hard, resource full, Self directed, willing to work closely with the community, Strong belief in the importance of cooperation and personal responsibility in the classroom with the ability to develop these characteristics in pupils.

McEwan, pg. 438 supported the statement that basic training is needed to conduct in segment less than three months duration in a new school in the developing countries. In most of Asia and Pacific the primary

curriculum prescribed is the same for both urban and rural areas. Sometimes the multigrade teacher finds difficult to make the content of his or her teaching meaningful for the children (Birch & Lally, 1995). Therefore, the training program for multigrade teacher is very important.

2.5. Managing the multigrade classroom

As a multigrade teacher has a widerange of age, ability, maturity and interests among the class, it is very important that the classroom is highly organised and structured. Everyone needs to know where to find things, how to store things, where to sit for different activities and where to put completed work etc. The multigrade classroom may look quite different to a traditional classroom. Instead of desks in lines, all facing the chalkboard, you may see:

- Desks organized into small groupings
- A space in the centre of the room, or perhaps some marked spaces around the room where groups can sit on the floor and work
- Workstations or learning centres, where individuals and groups may go to complete activities. These will be made by the teacher and could include maths, writing, language centres, or focus on the theme being taught.
- Resources kept on shelves around the outside of the room, in boxes which are labeled to help the group identify what they need.
- Boxes or folders for student's work to be kept in.
- Plenty of examples of individual and group work on display.

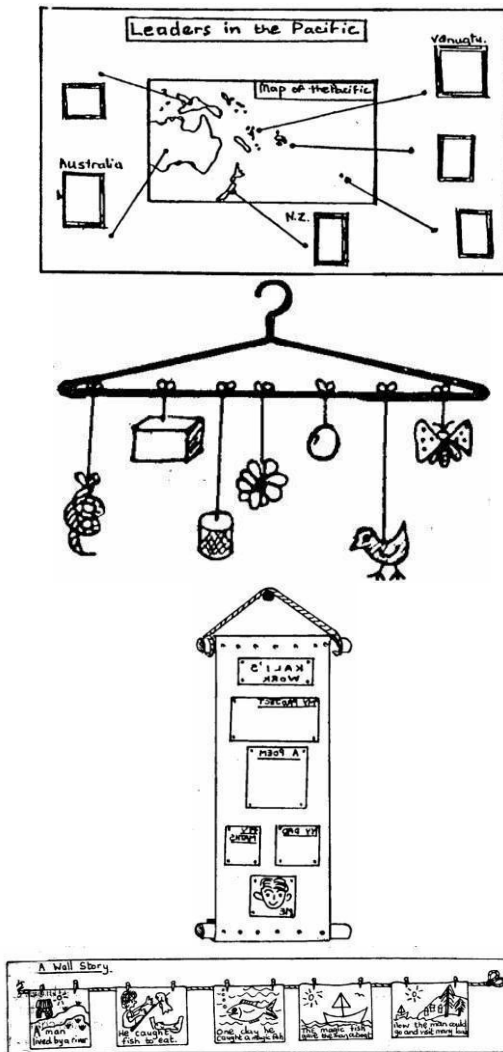


Figure 2.2 Multigrade room displays
(Pastep, 2002)

2.6. International multigrade teaching

Information gathered from eight countries in Asia, including Papua New Guinea, as part of a UNICEF/ UNESCO/SEAMEO workshop on “*Managing schools for better quality*” reveals a variety of applications of multigrade teaching in terms of function, structure, financing, activities, and achievements. All four regions of the PNG were operating 114 multigrade teaching schools at the time of the UNESCO workshop. Objectives of multigrade teaching were to:

- create access to education for all children
- bring schools closer to communities
- overcome a shortage of teachers
- modernize teaching methods

- reduce drop-out and repeater rates
 - implement universal basic education
 - increase the participation rate, cohort survival and literacy rates.
 - provide provinces with an incentive to use composite classes as a means of teacher rationalization through administrative, financial and technical assistance to meet shortfalls during this period of reform transformation.
- (UNESCO, 1995, p. 34)

The students and teachers benefit to support the effective multigrade teaching. McEwan stated that in a multigrade setting the group work relieves the teacher of constantly monitor or lecture to the students, keep the students on task. Instruction of the younger students by older students or parent volunteers is often used as a cost-effective means of providing assistance to students that have fallen behind. Birch & Lally (1995) state that Most populated countries like China and India respectively adopt a positive approach to multigrade teaching, that helps resolve shortages of teachers.

2.7. Summary

In summary, chapter two has reviewed some of the literature on multigrade teaching from PNG and overseas. The following chapter will describe methods for the project.

Chapter Three Methodology

3.1. Introduction

A quantitative descriptive case study approach was chosen as an appropriate method to gain data on teachers’ views on strength and weaknesses of multigrade teaching in PNG schools, particularly those in rural and remote locations. A questionnaire, which generated quantitative data, was an efficient method for exploring views of teachers.

3.2. Theoretical framework

Table 3.1 provides an overview of the theoretical framework for this research project. Each of the elements will be justified and elaborated further in the following sections.

Table 3.1: Overview of methodology

Approach	Quantitative
Epistemology	Social constructivism
Theoretical perspective	Interpretivism
Methodology	Case study
Data gathering method	Questionnaire

3.3. Quantitative approach

A questionnaire which generated quantitative data was administered during the study. Quantitative research is about asking people for their opinions in a structured way so that hard facts and statistics are produced to answer the questions guiding the study. The goal of a quantitative approach is to determine the relationship between one thing [an independent variable] and another [a dependent or outcome variable] within a population. Quantitative research designs may be either descriptive [subjects usually measured once] or experimental [subjects measured before and after a treatment]. This study was a descriptive study aimed at establishing the associations between multigrade teaching and the needs of schools in rural communities.

3.4. Epistemology of social constructivism

Epistemology is concerned with how knowledge is created. The epistemology of social constructivism was considered to be most suited for the study as the knowledge that staff and students hold about multigrade teaching would have been built through social interactions with others. Social constructivism is strongly influenced by the work of Vygotsky (1962) who stressed categories of knowledge and reality are actively created by social relationships and interactions. „Meanings are constructed by human

beings as they engage with the world they are interpreting“ (Crotty, 1998, p. 43).

3.5. Theoretical perspective of interpretivism

The theoretical perspective of interpretivism guided this research study. Interpretivism is concerned with „the study of human experience and that human experience is rooted in people’s meanings, interpretations, activities and interaction. Consequently, teachers’ views of multigrade teaching will be derived from their experience in those contexts.

3.6. Case study

There are various types of case studies depending on the nature of the study. Yin (2009) explained some as exploratory, collective, intrinsic, instrumental and multiple. This study was planned as an exploratory case study aimed at exploring teachers’ views on multigrade teaching in PNG schools. Essential features of a case study are investigating a phenomenon as a unit around which there is a boundary, the conduct of research in its natural context, and extensive data collection (Yin, 2009). The phenomenon at the centre of this study was multigrade teaching where students in two or more grades work with one teacher for a school year.

3.7. Sampling strategy

As it is not possible to survey all teachers of multigrade classes, sampling was necessary. A purposive sample of participants was selected for this study where the researcher purposefully selected teachers with multigrade teaching experience. The participant group of eleven included eight male and three female teachers.

3.8. Data collection instrument

A questionnaire was designed for the study. The proposed questionnaire instrument for the participants provided the data to address the variables of the topic. The data was analysed both manually and

by the use of computer. The questionnaire included items on;

- A multi-grade class is made up of students in several (two or three) grade levels with one teacher for an entire school year.
 - Multi-grade classes are efficient for schools with small class intakes.
 - The multi-grade system is useful in rural areas where enrolments are low.
 - Multi-grade teaching enables older students to help younger students with learning
 - It is difficult to attract teachers to take multi-grade classes.
 - A multi-grade teaching allowance should be provided as a financial incentive.
 - Teachers need special training in curriculum and classroom management for a multi-grade class.
 - Learning centres enable one grade group to work independently while the teacher works with the other grade group
 - Multi-grade teachers can start a lesson with the whole class together and then break them into groups for activities.
 - Adequate resources are necessary for effective multi-grade teaching.
- And concluded with the final open – ended question for teachers’ views is,
- In your own words explain what you consider to be the greatest challenge for a multi-grade teacher.

3.9 Data analysis techniques

As questionnaires were completed, the papers were numbered for reference purposes. Recording tables were prepared and responses for closed items entered. Scores were tallied and converted to percentages. The results were presented in tables. Responses to the open-ended item were recorded and subjected to thematic analysis. Demographic data were analysed with results shown in graphs or tables. By reading, coding and classifying responses, salient themes were generated from the data.

3.10 Ethical issues

Ethics is concerned with being honest and truthful in gathering and reporting data and ensuring that no harm is caused to the participants through their involvement in the research study. Ethical approval was applied for and gained from the DWU Faculty of Education ethics committee. Appendix 1 presents the letter of ethics clearance. Participants were informed of the purpose of the research (Appendix 2), that their participation is voluntary and that their identities would be protected through the use of codes. Informed consent was sought (Appendix 3). Data was stored securely where only the researcher has access. Findings were recorded and reported accurately and objectively, without bias. The researcher’s relationship to the study and the participants was stated. Respect was shown for views of participants.

3.11 Limitations, delimitations and risk management

Delimitations are research issues within the researcher’s control while limitations are those beyond the researcher’s control. Limitations of this study may include power failures, computer problems, internet unreliability, law and order incidents (theft, hold-ups), participant withdrawal and time constraints which would hinder data collection but are beyond the control of the researcher. Delimitations were my selection of participants and construction of items for the questionnaire. The risk of not completing the project will be managed by working hard, prioritising tasks, maintaining motivation and seeking advice from my supervisor when needed

3.12. Time frame

December 2014 Prepare proposal and gain ethics approval
 January-February 2015 Prepare letters and questionnaires
 March 2015 Gain approval from sector
 April 2015 Make arrangements with colleagues
 May-June 2015 Administer questionnaires
 July-September 2015 Record and analyse data
 October-December Prepare report

3.13 Summary

This chapter has provided an overview of the design of the study to explore teachers' views in multigrade teaching in PNG schools, particularly those in rural and remote locations. The chapter presented the theoretical framework for the study with justification of the quantitative approach and elaboration of the epistemology of social constructivism and theoretical perspectives of interpretivism. The exploratory case study method was explained and description given of the process of participant selection, the data gathering instrument and data analysis process. Consideration was given to ethical issues and limitations, delimitation and risk management. A proposed timeframe was presented. Results will be provided in the next chapter.

Chapter Four

Results

4.1 Introduction

This chapter presents the results from data gathered by questionnaires from teachers on effective multi-grade teaching in the country. Results are presented in figures, tables and narrative form.

4.2 Participants' demographic results

The participants group comprised of three females and eight males. This unequal gender representation was beyond the control of the researcher and was determined by the gender of students

attending the residential session for the Master of Educational Leadership program at the time the study was conducted including the two schools in Madang province.

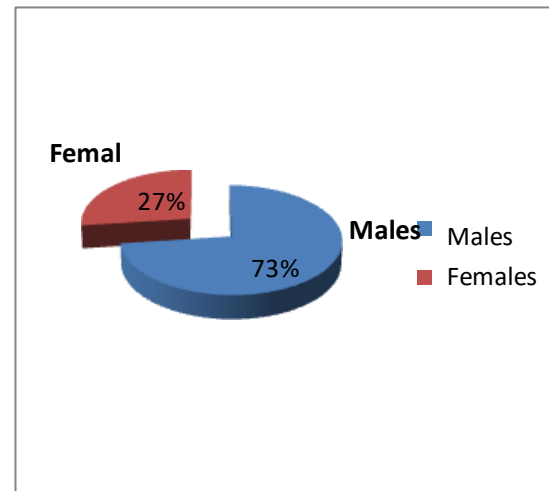


Figure 4.2 Gender of participants

Figure 4.3 Regional locations of participants

There was an unequal representation of all regions of this country due to the condition where the study was recommended for two weeks. The numbers of students attending Master of Education Leadership session at Divine Word University (DWU) and two schools selected from Madang province have put the high participants figure for Momase. These participants are represented on the graph, figure 4.3.

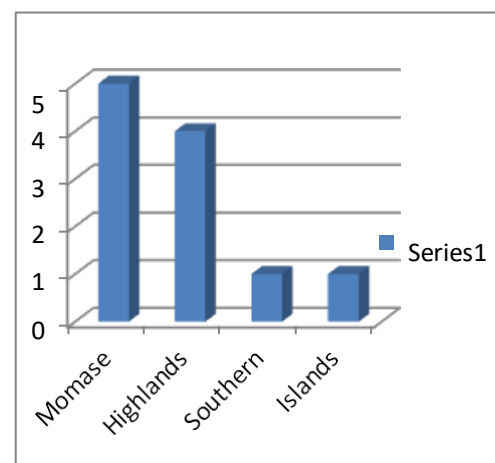
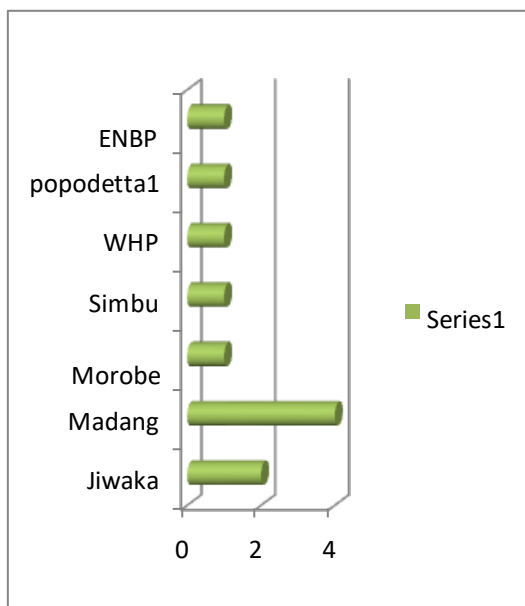
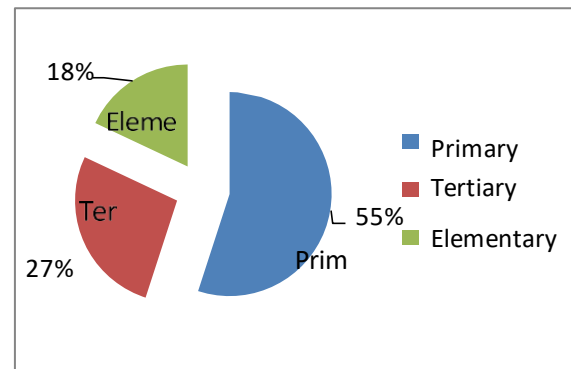


Figure 4.3 Regional locations of participant**Figure 4.4 Provincial workplace locations of participants**

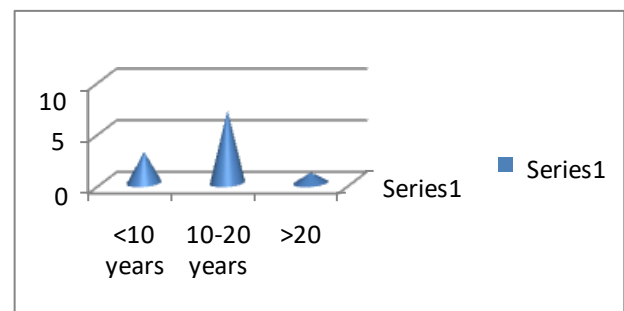
There were eleven participants from the seven provinces of work place responded to the questionnaires distributed. There were fifteen questionnaires distributed but only eleven people were participated. Since the research questionnaires distributed in Madang province during the time of study which shows the highest number of participants. Each bar of the graph represents the participants from each of the seven provinces mentioned.

**Figure 4.4 Provincial workplace locations of participants****Figure 4.5 Education sectors of participants**

There were participants from the three educational sectors involved in answering survey questions of effective multigrade teaching. The primary sector takes the huge amount of segment because the study was mainly focused on the primary. The segment of each pie represents the percentage participated in the survey questionnaires.

**Figure 4.5 Education sectors of participants****Figure 4.6 Participants range of teaching experience**

The participants' teaching experiences are range from eight years to twenty four years of teaching. The eleven participants answered each item in the questionnaire upon their experiences in the work place. Most participants work experiences were below twenty years.

**Figure 4.6 Participants range of teaching experience**

4.7. Questionnaire results

4.7.1 Questionnaire quantitative results

Questionnaire on multigrade teaching

This questionnaire is designed to obtain teacher views on multi-grade teaching in PNG schools. The findings will be used to add to knowledge on influences for successful multigrade outcomes.

Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
SA	A	U	D	SD

No.	Statement	SA	A	U	D	SD	total	Stron g varia bles	Weak variables	
1	A multi-grade class is made up of students in several (two or three) grade levels with one teacher for an entire school year.	IIII III 9	II 2				11	SA	U D SD	
2	Multi-grade classes are efficient for schools with small class intakes.	IIII 5	IIII 6				11	A	U D SD	
3	The multi-grade system is useful in rural areas where enrolments are low.	IIII 4	II 3	II 2	II 2		11	SA	SD	
4	Multi-grade teaching enables older students to help younger students with learning	III 3	IIII 5	I 1	I 1	I 1	11	A	U D SD	
5	It is difficult to attract teachers to take multi-grade classes.	IIII 4	IIII 4	I 1	II 2		11	SA A	U D SD	
6	A multi-grade teaching allowance should be provided as a financial incentive.	IIIIII 7	IIII 4				11	SA	U D SD	
7	Teachers need special training in curriculum and classroom management for a multi-grade class.	IIIIII 7	IIII 4				11	SA	U D SD	
8	Learning centres enable one grade group to work independently while the teacher works with the other grade group.	II 2	II 2	IIIIII 7			11	U	D SD	
9	Multi-grade teachers can start a lesson with the whole class together and then break them into groups for activities.		IIII III 8	III 3			11	A	SA D SD	
10	Adequate resources are necessary for effective multi-grade teaching.	IIIIII III 11					11	SA	A U D SD	
		52	38	14		5	1	1 1 0	SA	SD
11	In your own words explain what you consider to be the greatest challenge for a multi-grade teacher.									

4.7.2 Questionnaire quantitative results

Table 4.7.2.1 A multigrade class is made up of students in several (two or three) grade levels with one teacher for an entire school year.

Scale	Number	Value	
Strongly agree	9	x 5	45
Agree	2	x 4	8
Uncertain	0	x 3	0
Disagree	0	x 2	0
Strongly disagree	0	x 1	0
Total	11		53/55
% agreement			96%

The participants strongly agree that multigrade class consist of two or more grades with one teacher for an entire school year. This implies that multigrade teaching is mostly practised in PNG schools prior to the respondents' agreement.

Table 4.7.2.2 Multi-grade classes are efficient for schools with small class intakes.

Scale	Number	Value	= Score
Strongly agree	5	x 5	25
Agree	6	x 4	24
Uncertain	0	x 3	
Disagree	0	x 2	
Strongly disagree	0	x 1	
Total	11		49/55
% agreement			89%

There is high response of agreement that the efficient multi-grade class in a school is with the small number of students. Over 80% of the respondents support that statement because many remote terrains setting have small school with less number of students.

Table 4.7.2.3 The multigrade system is useful in rural areas where enrolments are low.

Scale	Number	Value	= Score
Strongly agree	4	x 5	20
Agree	3	x 4	12
Uncertain	2	x 3	6
Disagree	2	x 2	4
Strongly disagree	0	x 1	1
Total	11		43/55
% agreement			78%

The majority of the respondents strongly agree or agree that the multigrade teaching is relevant in rural areas where enrolments are low. Out of the eleven participants two were uncertain and two participants disagree that some urban schools have multigrade classes upon the condition which beyond control of normal education system.

Table 4.7.2.4. Multi-grade teaching enables older students to help younger students with learning

Scale	Number	Value	= Score
Strongly agree	3	x 5	15
Agree	5	x 4	20
Uncertain	1	x 3	3
Disagree	1	x 2	2
Strongly disagree	1	x 1	1
Total	11		41/55
% agreement			75%

A majority of respondents agree that the older students in multigrade class help the younger as they learn together in the same class. This simply implies that students get the concept well in group discussion where older ones lead the younger, which enables the teachers spend less time in presenting explanations and more lessons are covered in limited period. This strategy serves one of the reasons of implementing multigrade teaching.

Table 4.7.2.5. It is difficult to attract teachers to take multi-grade classes.

Scale	Number	Value	= Score
Strongly agree	4	x 5	20
Agree	4	x 4	16
Uncertain	1	x 3	3
Disagree	2	x 2	4
Strongly disagree	0	x 1	0
Total	11		43/55
% agreement			78%

A majority of respondents agree or strongly agree that it is very difficult to get teachers to teach multigrade class. The results show that teachers lack confidence of teaching multigrade, because of relevant materials and qualifications are not guaranteed. It is clearly demonstrating the expectation of better condition to be imposed.

Table 4.7.2.6 A multigrade teaching allowance should be provided as a financial incentive.

Scale	Number	Value	= Score
Strongly agree	7	x 5	35
Agree	4	x 4	16
Uncertain	0	x 3	0
Disagree	0	x 2	0
Strongly disagree	0	x 1	0
Total	11		51/55
% agreement			93%

The respondents' agreement shows the highest percentage in supporting the financial incentive to motivate the multigrade teachers to pursue the

multigrade classes. That results alarm the concern authorities to carefully consider the facts of hardships the multigrade teachers put into this education service.

Table 4.7.2.7 Teachers need special training in curriculum and classroom management for a multigrade class.

Scale	Number	Value	= Score
Strongly agree	7	x 5	35
Agree	4	x 4	16
Uncertain	0	x 3	0
Disagree	0	x 2	0
Strongly disagree	0	x 1	0
Total	11		51/55
% agreement			93%

The majority of the experience teachers' responses show the highest percentage of agreement on teacher training in curriculum and classroom management before taking a multigrade class. They must have confidence in the imparting of lessons to mix level of students in same class. The related literature stated more on teacher qualification on multigrade teaching. Primary Handbook (1999).

Table 4.7.2.8. Learning centres enable one grade group to work independently while the teacher works with the other grade group.

Scale	Number	Value	= Score
Strongly agree	2	x 5	10
Agree	2	x 4	8
Uncertain	7	x 3	21
Disagree	0	x 2	0
Strongly disagree	0	x 1	0
Total	11		39/55
% agreement			71%

The majority of the respondents show that they were uncertain of the learning centre enables one grade to work independently while the teacher works with the other grade group in the same class. About 33% of the respondents show strongly agree and agree on the suitable learning centre encourage independent learning while 67% of the respondents were uncertain.

Table 4.7.2.9 Multigrade teachers can start a lesson with the whole class together and then break them into groups for activities.

Scale	Number	Value	= Score
Strongly agree	8	x 5	40
Agree	3	x 4	12
Uncertain	0	x 3	0
Disagree	0	x 2	0
Strongly disagree	0	x 1	0
Total	11		52/55
% agreement			95%

There is high percentage of respondents shows strongly agree for the multi-grade teachers who organise the whole class with a lesson and then break them into groups of activities for better class learning. Most respondents think this is the best approach of teaching and learning in the multigrade class.

Table 4.7.2.10 Adequate resources are necessary for effective multigrade teaching.

Scale	Number	Value	= Score
Strongly agree	11	x 5	55
Agree	0	x 4	0
Uncertain	0	x 3	0
Disagree	0	x 2	0
Strongly disagree	0	x 1	0
Total	11		55/55
% agreement			100%

The full respondents strongly agree that adequate resources are important for effective multi-grade teaching. This means the resources are very need in which every multigrade teacher badly need. Students can work independently when there are enough basic resources for students. The learning centre with relevant materials only promotes quality education, thus experience teachers had no hesitation to agree with the particular question.

4.7.3.Questionnaire qualitative results

The last item on the questionnaire was an open-ended item to which respondents could comment freely on the topic of effective multi-grade teaching. Table 4.11 lists the responses.

Table 4.7.3.1 Responses to open-ended item

Freely explain the greatest challenge for a multi-grade teacher. These results give the best suggestion of the participants' feelings in the multigrade teaching in PNG.

	Teachers find complicated when planning and preparation with multigrade teaching
	The incentives are poorly put in place by the education department
	Insufficient resources to meet multigrade class demand
	Very challenging for teachers, more time consuming and effort needed
	Multi-grade teachers find hard to manage undisciplined children in the same class
	Develop a program to measure the achievement after three years period
	The remote multigrade teachers are not recognized by education authorities

<p>Multigrade teachers also raised concern on training and upgrading of qualification.</p>

school wish to apply integrated methods of teaching.

4.5. Summary of the chapter four

Chapter four has presented the results of the methodology that was explained in the previous chapter. Results indicate in the demographic nature of the participants and their responses to the questionnaire items. By an iterative process of moving back and forth between the data, the views of teachers were able to compare to deduce findings which will be discussed in the next chapter.

Chapter Five Discussion of results

5.1. Introduction

The purpose of this chapter is to adopt interpretivist approach and discuss the findings, through the lens of the literature review and the theoretical framework for this study. The literature review gave rise to the questions which focussed this study. Three supplementary questions support the main question.

5.2. Supplementary question 1

What are the reasons for some schools having multi-grade classes?

The purpose of having multigrade class is to accommodate the different levels of students in one class;

- At the reason of the isolated schools taking the less number of teachers in the funded positions available with more grades to teach.
- The students' enrolment is low in a particular school where it does not meet the teacher students' ratio. Therefore, the two grades combine to one class so that the other teacher should be removed to the different school that needs teachers.
- The older students have much impact on the younger students in the same class with learning. Therefore, some

5.3. Supplementary question 2

What are the challenges for multi-grade teachers compared with teachers of single grades?

- Teachers find complicated when planning and preparing with multigrade teaching because there won't be any separate planning for the grade level but one planning which suits the needs of different grade levels in the same class. While single grade teacher concentrates on planning for only one grade having quite same interest and needs.
- The incentives are poorly established by the education department for multigrade teachers. Multigrade teachers put a lot of effort and time in preparation, teaching and assessment but the salary condition has no difference compared with the single grade teachers.
- Inadequate resources to meet multigrade class demand in most of the rural schools caused much challenge to the multigrade teachers. The study found that most schools need relevant materials to teach multigrade class. The learning centre must be equipped with the relevant materials so that the multigrade teacher involves one grade level to work in group activities while attending to the other groups. Resources play major contributing factor in the multigrade class learning.
- Very challenging for teachers teaching multigrade class, they find this program consumes more time and effort. The study found out that teaching in a multigrade class needs more time and effort than a single class. Multigrade teacher attends to individual needs of the different grade level, giving instruction and assessing with different criteria according to the grade level.

- Multi-grade teachers find hard to manage undisciplined children in the same class.
- The study also brought to attention that remote multigrade teachers are not recognised by education authorities for upgrading qualification and favourable condition to motivate teaching.

5.4. Supplementary question 3

What factors contribute to success or failure with multi-grade teaching?

Success

- the teachers are trained adequately for multigrade programs
- The multigrade teachers' benefits are considered and funded by the department of education which motivate teaching reach out to the remote schools and the children's education are not deprived.
- Provide relevant resources to every school to prepare in advance for circumstances beyond.
- The multigrade teacher should be well organised, creative and flexible, willing to work hard, resourceful, self-directed and a person with strong belief in change, (UNESCO, MGT, 1998)

Failure

- Inadequate school facilities like learning centre, black board, chalk and so forth for students and teachers prompt hindrances in students learning.
- Inadequate trained teachers push the education backwards in terms of teaching and learning particularly in a multigrade teaching and learning program.
- Scarcity in relevant teaching resources

- Teachers are reluctant to take multigrade class; sometimes teachers are given class but they deliberately leaving the class that halt the school for so long.

5.5. Overarching question

The overarching question underpinning the study is how can multigrade teaching be implemented in PNG schools for effective outcomes?

The study provided the list of information in a broad perspective to underpin the concern topic of multigrade teaching will be effective. Therefore the study stated some strategies;

- Teachers should be trained and equipped with relevant knowledge and skills before offering the class of multigrade to teach. In addition to that the teachers who teach multigrade should be supervised by head teacher or multigrade specialist to make sure effective teaching and learning continues in line with the standard.
- Adequate materials should be supplied to schools so that the teachers utilize effectively for the best learning of students.
- Recruit the resourceful teachers who have the heart to serve.
- Teachers' incentives should be considered by the authority as motivation magnesium.
- One of the teaching strategies used was grouping the grade, older students with younger to help each other, most respondents showed great approval of this strategy.

5.6. Summary of chapter five

The chapter five has applied the interpretivist approach on the findings and the discussions were elaborated in sequent of supplementary questions. The study identified the reasons of the multigrade teaching; the challenges and the factors contributed to the success and failure. The discussion and elaboration

give the study a clear picture of the study purpose.

Chapter six

Conclusions

6.1. Introduction

The purpose of this study was to explore the teachers' views on the effective multigrade teaching in PNG schools. In the process of the study it was anticipated of how effective outcomes will be achieved from multigrade teaching. The conclusions reached are drawn from participants' perceptions of teaching experiences in different sectors of education. The conclusions are presented to cover five sections; the teaching and learning, the government incentives, resources, teachers' qualification and challenges.

6.2. The teaching and learning PNG-NTSF

The study concluded that multigrade teaching in rural setting is regarded as great benefit. The study shows that most schools in isolation where separated by rugged mountains, big rivers and most outskirts of the towns and cities were strongly accepted the multigrade teaching. The rural school found fewer teachers available for more grades or either enrolment is very low to pursue the separate class. The results also showed that teaching becomes effective when the older grade students lead the younger students in group activities that are really helping the teachers who take advantage to cover more lessons. Evidence of this was the highest percentage of teachers' feedbacks shown.

6.3. The incentives

The study found those participants' perceptions on the incentives for the multigrade teaching is very high. The teachers prefer government to set the motivation magnesium of multigrade allowances, promotion, scholarship and other favourable conditions. The related literature highlighted on the percentage of

entitlement promised by the government on multigrade teaching and disadvantage allowances but not really effective in the current experiences. Therefore, most teachers are not even attracted to multigrade teaching. For this reason caused the failure to the education services in the remote part of this country.

6.4. Managing multigrade classroom with resources

The study concluded that most schools have inadequate relevant resources for teaching and learning. Therefore, the higher percentage of respondents preferred the adequate resources and the learning centre should be conducive for students learning. Simply means students need required materials to do self-learning while the multigrade teachers attend to the other activity groups. Teachers usually become human resources during teaching and learning period. Mostly in a year the teachers never hardly utilize the learning centre because no relevant facilities. The participants highly responded on the independent learning as uncertain because of no resources and having no idea of using resource centre.

6.5. Teachers' qualification

The study concluded that training for multigrade teacher is a very big concern highlighted by good number of respondents. The Using of newly designed curriculums materials and teaching and learning concepts should be drilled to teachers in order to meet the changed standard. Most of the teachers are not using standard multigrade teaching strategies because they are not being trained on how to go about. Therefore, the study shows about ninety-three percent (93%) of the respondents really prefer training of multigrade teaching and classroom management. The best education of the students relies on the best teacher who acquired resourceful skills and knowledge.

6.6. Challenges of multigrade

The study concluded that there were challenges ahead of multigrade teaching. Resources are limited as mentioned and students discipline in the same class is another issue. Teachers spend more time and effort on student but the authorities are not recognising their performances. The study shows that the teachers participated expressed their feelings through the questionnaire sheets given. The experienced teachers list many concerns as challenges to multigrade teaching.

6.7. Recommendations

Derived from the conclusion of the study the three recommendations are made.

Firstly, the provincial education authorities need to establish the data control to keep the record of multigrade teachers in the beginning of the year. The necessary forms need to be signed and attached with the resumption duty forms. Any officer who does not perform effectively with multigrade will be suspended and reinstate the new teacher to replace the same position and benefit from the allowances. The training should also be recommended to proceed before multigrade teaching actually happen, each province needs to conduct multigrade teaching in- service as compulsory.

Secondly, the school should make available a building for the resource centre particularly for multigrade teaching. In a situation where a teacher absent for leave, die, study, fight, resign or attending personal programs for longer period that means the absent officer should be ceased from allowance and the benefits will be paid to the relieving officer. In this way the administration of the school controls the moments of the teachers.

Thirdly, the teaching and learning should be programmed well and teaching must associate with the assessment. The study discovered that there are multigrade teaching going on in PNG schools but still

practising traditional way of moving two grades in a classroom and lecturing the lesson. The focus of the study wants the effective multigrade teaching and that is all about be with the students to make them learn and assess their feedbacks in groups or individual. Create the environment that suits the individual student needs. There may be different levels of grades but can be able to understand the simplified concept and that is identified as effective multigrade teaching. The study strongly recommends the students centred lesson approach used.

Fourthly, All early learning centres in PNG should apply multigrade or multiage teaching effectively.

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