The motif on the cover is based on a nineteenth century carving of a ship's prow from Choiseul, Solomon Islands. To *Directions: Journal of Education Studies,* it signifies forward movement.

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Research Articles

Evaluating Teacher-Developed Test and Student Achievement in an Undergraduate Statistics Course: An Action Research Study

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Abstract

In this study, we used an action research approach to ascertain the degree to which first year undergraduate students had achieved the course learning outcomes of a 100-level course in statistics. In order to achieve a valid interpretation of student achievement, the researchers first had to ensure that the examination items were of reasonable quality and the examination was reliable. We analysed student papers to arrive at specific item statistics such as discrimination index and item-rest correlations. We also checked the Cronbach's alpha reliability for the overall test. Findings related to student achievement for each learning outcome suggest that three out of the six course learning outcomes were achieved to our satisfaction. The study provided useful points for reflection for us in terms of improving our own teaching using action research. For example, university teachers can reflect on ways of improving in content areas where students' course learning outcomes were not met. In this particular study, we found that topics such as "confidence interval" and "probability" are areas in which students' face greater difficulty and thus would require more attention from the teaching staff. These findings provide useful insights on how university teachers can evaluate their own pedagogical practices.

Introduction

In the contemporary information technology era, the need to understand and use data in almost all aspects of life, including education and workplace, has become an important aspect of learning and decision making. This aspect of learning, often called probability literacy or statistical literacy (Jones, Langrall, & Mooney, 2007), includes having a working "knowledge and understanding of numeracy, statistics and data presentation" (Pierce & Chick, 2013, p. 190). According to Jones et al., (2007), probability literacy is often embedded in other kinds of literacy and numeracy discussions, including discussions on statistical literacy. In other words, one cannot talk about probability and statistical literacy in isolation. Watson's (1997) understanding of the term statistical literacy provides a much broader conceptualisation of the term. According to Watson (1997), statistical literacy involves a general understanding of terminology associated with the study of probability and statistics. In addition, statistical literacy includes a conceptual understanding that will help the user to communicate using statistical language. The third critical element of statistical literacy includes a questioning attitude. In other words, learners must be able to analyse statistical claims with openness and logical justifications.

Such a broad understanding of statistical literacy is reflected in the probability and statistics curriculum of many countries (Jones et al., 2007; Shaughnessy, 2007). There is a strong focus on applying probability and statistics in real life scenarios, such as in areas related to medicine or engineering. Statistics is one of the service courses offered in almost all areas of study as it relates to many areas of higher education (Artigue, Batanero, & Kent, 2007).

In recognition of the importance of statistical literacy, the primary provider of tertiary education in the Pacific, the University of the South Pacific (USP), recently made explicit use of the term 'quantitative reasoning" in one of the seven graduate outcomes that reads:

Graduate Outcome 7 (GO 7): Critical Thinking and Quantitative Reasoning: Graduates will be able to evaluate multiple perspectives and arrive at a reasonable independent judgement based on evidence.

Making judgements by evaluating multiple evidences requires that graduates are well versed with statistical literacy. One of the courses offered by the USP that focuses on this aim is *ST131: Introduction to Statistics*.

With institutions of higher learning placing greater emphasis on graduate outcomes, it is imperative that a thorough analysis of course learning outcomes is done to ascertain whether or not, and to what extent are, potential graduates achieving the course learning outcomes. According to Sadler (2016), there has been a general interest amongst higher education institutions globally to enhance graduate outcomes. While higher education institutions have increasingly claimed about graduates having higher-order skills, attributes, or competencies, an important challenge facing universities is to adopt evidence-based approaches to ascertain the degree to which these higher-order outcomes are achieved by graduates (Coates, 2016; Evans, Howson, & Forsythe, 2018; Sadler, 2016).

In terms of teaching for statistical literacy, research suggests that there exists a general dissatisfaction with a rather mechanistic approach to teaching statistics at higher education level. In other words, there are some critics who say that teaching of statistics courses have been "over-mathematised", with little focus on helping students improve their stochastic intuitions (Artigue, Batanero, & Kent, 2007, p. 1035).

In light of the above, the research objectives addressed in this paper, with respect to a basic statistics course, are to:

1. Evaluate the quality of test items used to assess the learning outcomes.
2. Investigate the extent to which first year university students are achieving the course learning outcomes.
3. Ascertain the key areas of student difficulty.

These objectives are important for two reasons. First, by analysing student achievement on each particular course learning outcome and each particular test item, the faculty can get first hand data on student performance. Second, a closer look at item quality can help provide relevant feedback on the quality of respective items as well as the quality of overall test. Item specific information is vital to ensure reliability and validity of the overall test (Payne, 2003; Waugh & Gronlund, 2013). Data derived from such studies are vital for quality assurance as well as improvement purposes. Overall, the study hopes to shed some light on how such course specific data would benefit the course teaching team in improving their pedagogy.

After presenting a brief background of the USP and the statistics course, a brief discussion on procedures for conducting an item analysis are presented. This is followed by a detailed description of methods of data analysis. Next, the study's findings are presented and explained. Finally, some reflections and implications are shared.

Background

In this section, we provide a brief background of the USP, followed by a description of the 100-level statistics course.

The USP is one of the two regional universities in the world. head quartered in Suva, Fiji Islands, its roots span 11 regional small island member states in the South Pacific that include: Cook Islands, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu. There are a total of 14 campuses and 10 centers, with each member country home to at least one campus. The university began its operations from the Suva campus in 1968 (USP, 2018). In this time, the university has established a face-to-face as well as distance learning platform. It offers courses in four different modes to approximately 25,000 students (USP, 2018a). These include: face-to-face, print, blended, and online. The blended and online mode courses are offered using satellite telecommunication (USPNet), with a majority of the course coordinators based at the Suva Campus.

The statistics courses at the university fall under the School of Information Technology, Engineering, Mathematics, and Physics (STEMP). The statistics course studied is offered in semester one via face-to-face and online modes. The course is designed as a service course that emphasizes descriptive statistics and basics of probability theory that includes descriptive statistics: collection and organisation of data, measures of positions, central tendency and dispersion; probability: probability measures, independent events, conditional probability, random variables and their mean and variance, binomial and normal distributions, normal approximation to binomial; hypothesis testing: sampling distributions, sampling distribution of means, t-distribution, chi-square distribution, tests of significance for means, proportions, goodness of fit, association of attributes and homogeneity of proportions; correlation and regression. This course is delivered via 4 lectures, 1 tutorial and 1 laboratory per week. The course assessment includes course works and final examination. The sub-components of course work is based on short test, online quiz, lesson activity and assignment. The mark distribution is 50% for course work and 50% for final examination.

The course learning outcomes are as follows:

1. Use appropriate statistical methods to analyse data.
2. Solve basic probabilistic problem.
3. Compute and interpret confidence intervals for mean and proportion.
4. Apply Hypothesis Testing to test the mean and proportion for one or two populations.
5. Analyse the data for goodness of fit, independence of attributes and test homogeneity.
6. Use statistical technique to measure the relationships between two variables.

Each semester, on average, approximately 130 students are enrolled in this course. The minimum prerequisite requirement for this course is a pass in Year 13 mathematics. In this study, we looked at 2017 semester 1, cohort of students.

Models of Grading in Higher Education

Assessment is a general term that is often used to refer to different dimensions of students' learning achievement. In the higher education contexts, assessment is a process of "forming a judgement about the quality and extent of student achievement or performances, and therefore, by inference a judgment about the learning that has taken place." (Sadler, 2005, p. 177). Other closely related terms that are often used interchangeably include terms such as marking, scoring, and grading. While marking and scoring can be used interchangeably without any trouble as they both refer to the quantifying student responses using a number, grading is a complex process as it involves arriving at an overall evaluation of student achievement. In most cases, we use letter grades to denote varying degrees of student achievement (Sadler, 2005).

Two approaches to grading can be distinguished in the assessment literature. First is the norm-referenced approach. This grading method compares students' achievement with the rest of the cohort, mostly using "grading-on-the-curve" approach (Sadler, 2005, p. 178). In other words, students' scores are reduced to simple, derived scores such as z-scores, stanines or percentile ranks. An approach called relative grading usually accompanies norm-referenced grading. Under a relative grading approach, students are ranked in order of performance, and students typically earning the highest combined score receive the highest letter grade (Gronlund & Waugh, 2009). The second grading method is called criterion-based or criterion-referenced approach. This approach utilizes an explicit criteria set in advance and shared with students upon which the interpretation of students' achievement is based. Sadler (2005, p. 178) defines a criterion as 'a distinguishing property or characteristic of anything, by which its quality can be judged or estimated, or by which a decision or classification may be made." Typically, this kind of grading uses an absolute grading method (Gronlund & Waugh, 2009), where students need to score a pre-determined mark (usually in a range) to score a particular grade. Absolute grading also utilizes letter grades.

According to Sadler (2005), many universities around the globe use different variations of the criterion-referenced approach to grading. This is mainly due to the following two reasons. Firstly, criterion-referenced approach ensures that learners are graded on what they could do; not on what others in their cohort could do. In addition, this approach to grading is helpful in terms of providing learners a clear expectation of what they are required to do or perform, and on what basis their learning will be evaluated (Sadler, 2005).

Sadler (2005) identifies four variations of the criterion-referenced approach to grading. Sadler's grading model 1 looks at *achievement of course objectives*. Under this model, students' overall grades are a reflection of how well they performed on each particular course learning outcome. For example, students receiving top grades would mean they have done exceptionally well in all course learning outcomes.

Grading model 2 looks at students' aggregate performance across all the course learning outcomes. In other words, scores on different assessments are added and a final score is arrived at. This final score determines the final grade a student receives, based on pre-determined arbitrarily decided criterion set by the university. This approach, called the *overall achievement as measured by score goals* (Sadler, 2005, p. 181) is most commonly used type of grading used in universities, although it offers limited formative information on specific areas of strengths and weaknesses. Sadler's grading model 3 uses more sophisticated and customized criterion rather than those used in grading models 1 and 2. For example, university teachers using this approach called grades reflecting patterns of achievement may take into account factors such as consistency in performance and meeting minimum performance levels. Based on multiple, custom designed criterion, a university teacher then comes up with a much more holistic judgment of students' performance. Grading model 4, titled *specified qualitative criteria or attributes* is similar to grading model 3 in the sense that it provides room for inclusion of more qualitative criterion in making judgements about students' learning.

The University of the South Pacific predominantly uses grading method 2. In other words, students' work on various assessments are finally weighted and combined to arrive at a final grade. As pointed earlier in this section, such a method of grading, while being less cumbersome, fails to provide information on actual patterns of strengths and weaknesses. This is because a stronger performance in one assessment can compensate for weaker performances in others. As such, the current approach of grading offers limited scope for any formative action for the university teacher. The current study attempted to combine some aspects of grading method 1, based on students' achievement in specific course learning outcomes, in an attempt to see if possible benefits could be derived by combining elements of different grading methods.

In summary, course learning outcome (CLO) achievement evaluation is very important because it determines students' level of understanding about the course (Judd & Keith, 2018; Palmer, 2018; Mathers, Finney & Hathcoat; 2018). Various methods have been used to evaluate CLO achievement including analysis of students' grades accumulated from the final exam marks, assignments, projects, class participation and others, however there are still existing queries on how much the students have achieved at the end of semester. While grades give an overall impression about achievement, they have their own limitations. For example, a grade of 74% could be achieved by performing well on three quarters of the CLOs alone; leaving one quarter of the CLOs unachieved. Therefore, effective assessments should provide evidence that allows educators to make judgments about individual CLOs. One way to have a closer look at students' performance with respect to each CLO is to break down grades for components related to CLOs across students or across courses to provide direct evidences of students' learning (Evans et al., 2018; Judd & Keith, 2018).

Palmer (2018) calls for more information on student learning amidst a climate in higher education that mostly focuses on accountability and other traditional forms of data

such as student enrollments and completion rates. According to Palmer (2018), accountability should be interpreted with a different pair of lens that focuses on desired outcomes and how these outcomes would mean in terms of what students are able to do upon completion of courses or programs. In other words, the focus of accountability should be on students' learning. In addition, any data about student learning should be able to point to future directions on how to explain and if possible, eliminate achievement gaps. This means that data about students' learning should help university teachers to engage in action research by reflecting on what they could do with assessment results (Evans et al., 2018; Palmer, 2018; Rickards, 2018).

In this study, we utilised a practice commonly prevalent in measurement discourses to evaluate item quality. We ascertain the degree of course learning outcome achievement by looking at their performance in different parts of the exam. This process is described next.

Item Analysis Procedures and Applications

In this section, we present an overview of item analysis, followed by a succinct discussion on the uses of the statistics involved. Clauser and Hambleton (2018) define item analysis as a means of evaluating the items on a test by calculating and interpreting statistics for individual items of the test. While item analysis is mostly used on dichotomously scored items such as multiple-choice or true-false type of items, the procedure can be adopted for other extended-response item formats. According to Clauser and Hambleton (2018, p. 355), the process of item analysis is useful in judging the "statistical merit of test items" and identifying "flaws and potential biases". This study's focus was on three specific item analysis statistics: item difficulty, item discrimination, and the biserial correlation coefficient. The following discussions are based on the classical test theory.

Item difficulty refers to the percentage of test takers who answered each item correct. Also known as the *p-value* of an item (Shultz, Whitney & Zickar, 2014; Clauser & Hambleton, 2018), it can range from zero percent (item is too difficult, all test takers got it wrong) to 100 percent (item is too easy, everyone got it correct). From a measurement perspective, items that have a *p-value* of around 50% are desired, and items having extreme values such as those near to zero or 100 percent are of little value because such items are not able to differentiate among test takers (Shultz, Whitney & Zickar, 2014). *P-value* alone is not a good indicator of item quality, hence in this study, we relied on other more critical statistics, discussed next.

The second important statistics related to item analysis is called the discrimination index (D). This value, often stated as a decimal, tells us how well the item is able to discriminate, from a measurement sense, between examinees from the upper group (UG) and the lower group (LG). In an ideal case, we would expect more students from the UG to answer each item correctly compared to the number from the LG that answer it correctly (Clauser & Hambleton, 2018). If this happens, then the item's discrimination is positive. Such indexes for D are generally preferred. On the contrary, if more students from the LG answer a particular item correctly than the examinees from the UG, we would get a negative index. The discrimination index can range from -1.00 to +1.00 (Mehrens & Lehmann, 1991). The formula for finding D for both dichotomously scored as well as essay items are as follows:

$$D \text{ for dichotomusly scored item} = \frac{Number\ correct\ UG - Number\ correct\ LG}{\frac{1}{2}N};$$

$$D \text{ for essay item} = \frac{\sum UG - \sum LG}{N(score_{max})}.$$

The D values of 0.20 or more are generally acceptable, because they indicate that more and more of the UG candidates are answering a particular item correctly in comparison to their counterparts from the LG.

A related yet more specific item statistic, that takes into account the significant middle 50 percent of the examinees that were not catered for by the discrimination index, is the point biserial correlation and biserial correlation coefficients (Shultz, Whitney, & Zickar, 2014). These statistics utilise the correlation coefficient and are also known as item-total correlations. In an ideal case, we hope to have a strong positive item–total correlation coefficient that is closer to 1. However, positive, low-to-moderate correlations are acceptable in practice (Shultz, Whitney, & Zickar, 2014). A stronger and positive item–total correlation will indicate that those who answered an item correct (assuming items were dichotomous) did well on the overall test as well, whereas a negative correlation will indicate that those examinees that answered a particular item correctly did worse in the overall test. Thus, negative total-item correlations would mean that the test writer needs to reexamine the item for potential faults, such as a trick that may be helping the less knowledgeable examinees to guess the correct answer. The procedures for calculating biserial correlation are quite complex and are exclusively for dichotomously scored items (Clauser & Hambleton, 2018). A similar statistic, however, is applicable to tests that contain polytomously scored items and is called polyserial correlation. In this study, we used item-rest correlation index. The item-rest correlation is the correlation between each item score and the total test scores based on the other items (i.e., the other 5 items). This corrected correlation is not artificially inflated. In an ideal case, we want this corrected item-total correlation to be closer to 1.

We also used Cronbach's Alpha as a measure of reliability. This value was calculated to establish the reliability of the test items and the overall test. Typically, we hope for reliability coefficients around 0.80 or better. The computation of Cronbach's alpha depends on the covariance matrix of the items. The formula to compute Cronbach's alpha is:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum \sigma_i^2}{\sigma_y^2}\right)$$

where k is the number of items, $\sum \sigma_i^2$ is the sum of the item variances and σ_y^2 is the variance of the total test score.

For this study, we used D-statistic, Cronbach's alpha, and item-rest correlation to answer our first research objective. The other two research objectives were answered using descriptive statistics. In the following section, we further explain our procedures.

Methods

In this study, we utilised an action research approach. Action research, also known as practitioner research, involves practitioners actually doing the research, and not just being mere consumers of research. In other words, action research involves 'insiders' doing research on their own practice. Such an approach is often guided by an aim to improve teaching and learning (Punch & Oancea, 2014). This approach was seen as important for this study because three of the authors were engaged in teaching the statistics course. An additional aim was to check item quality of examinations. These aims were in line with the university's approach to evidenced-based learning and curriculum alignment. The university also encourages collaboration among members of different teaching sections of the university. Hence, an action research seemed useful as it would provide useful insights into our own work, as well as it aligned well with the university's curriculum alignment efforts.

We analysed students' marked final examination scripts from the Semester 1, 2017 offer of the course. The group consisted of 96 registered students in the face-to-face mode from four different programs, which are Official Statistics, Networks and Security, Software Engineering and Mathematics. Data collected for this analysis is only from the final examination marks, which contributes 50% of the total marks. The examination is 3 hours with 100 marks where the students need to answer five extended-response questions. While the examination papers at the university are moderated by a panel of subject matter experts, the final marked scripts are moderated at random as well. We analysed students' scores in each extended-response question. Each extended-response question or a part of it was aligned to a specific course-learning outcome. This provided a useful platform to investigate students' performance with respect to each course-learning outcome. Each extended-response examination item contained many sub-parts. The sub-parts that were specifically aligned to each CLO are identified in Table 1 below and that sub-part has been referred to as 'item' in our analysis.

Table 1. Mapping of Question No. with CLOs

Question (as they appeared in the examination)	Mark	Course Learning Outcome Assessed	Item No. (reflected in analysis)
Q1	20	1	1
Q2 & 3	40	2	2
Q4 A	6	3	3
Q4 B & C	14	4	4
Q5 A	8	5	5
Q5 B	12	6	6

In answering our first research objective, we used the following statistics: item discrimination (D), Cronbach's Alpha (α) for the overall test, Cronbach's Alpha (α) if item dropped and item-total correlation for each item.

For the item analysis, firstly, the final marks and component marks for each question of 96 students were recorded. The final marks were sorted in descending order. Since the class size was small, the UG and LG of 50 percent were identified. The item analysis procedure for essay questions was used to calculate the discrimination index (D) for each of the item. Cronbach's Alpha (α) for the overall test and Cronbach's Alpha (α) if item dropped were also calculated together with item-total correlation coefficients for each item. These statistics were calculated using the R software.

In terms of data analysis for our next two objectives, a full analysis of all students' scripts was pursued to give a complete picture of student achievement. We used the following guidelines from Kipli (2012) that uses the percentage of students that fall in the different categories as shown

in Table 2, to analyse student performance. For each item, we determined how many students fell into each.

Table 2. Level and range of Course Outcome Achievement

Categories	Percentage range
Strongly Not achieved	<25%
Not Achieved	25% -50%
Achieved	50% -74%
Strongly Achieved	≥75%

Results and Discussion

Results and discussions are presented in the same order as the research objectives.

Evaluating quality and reliability of test items.

The item analysis is used to obtain objective information about the test items, which can then be used to indicate items that are too easy or too difficult or those that fail to discriminate adequately between high and low achievers as well as those that have defects and hence are poor items. The process of item analysis computes and examines two basic statistics: the item's difficulty value (*p-value*) and its discrimination index (D). In this study, we gave more attention to D-index, because items with positive D-indexes > 0.20 means that the test item is of good quality. In addition, we present the Cronbach's Alpha (α) for the overall test and Cronbach's Alpha (α) if item dropped together with Item-total correlation coefficients for each item to ascertain the quality of each item and the overall quality of the full test.

Table 3: Item Analysis for each item

	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6
Score (out of 100)	20	40	6	14	8	12
Discrimination Index (*D*)	0.35	0.26	0.46	0.39	0.50	0.34
Comments	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
Cronbach's Alpha (α) if item dropped	0.754	0.838	0.796	0.756	0.775	0.776
Item –rest correlation	0.677	0.603	0.642	0.715	0.681	0.615

Table 3 shows the Discrimination Index (D) for each of the item. The D for each item is above 0.20. This indicates that all the items were able to differentiate adequately between high and low achievers in the course. The D statistic for each item indicates that the test items were all of acceptable quality. The Cronbach's alpha (α) for the full test stood at 0.810, which indicates a strong internal consistency amongst items in the test. The Cronbach's Alpha (α) if item dropped shows that the Item 2 be considered for deletion (as the Cronbach's alpha (α) for the full test increases from 0.810). However, the item-rest correlation coefficient for Item 2 is above 0.50. This means that Item 2 is of an acceptable quality. In summary, the items in the test had a strong discrimination power and were highly reliable. This means that achievement of CLO's can be investigated to identify the areas of concern.

Evaluating course learning outcome achievement.

Table 4 presents the percentage of students' falling in the different categories of achievement for each course outcome. For example, the table reveals that 9% of the students are 'strongly not achieving' CLO1 while 22% are 'not achieving' it. In total, 31% of the students have not achieved this CLO. From the table, we can also observe a majority (69 %) of the students have achieved CLO1, with a good percentage (31%) that are 'strongly achieving' CLO1.

Table 4: Percentage of student versus course learning outcome achievement

	CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
Strongly Not Achieved	9%	16%	39%	20%	32%	36%
Not Achieved	22%	38%	16%	26%	16%	16%
Achieved	38%	35%	22%	28%	14%	19%
Strongly Achieved	31%	11%	24%	26%	39%	29%

For further exploration, the categories 'strongly not achieved' and 'not achieved' were combined and regarded as 'not attained' while 'strongly achieved' and 'achieved' as 'attained'. This implies that 31% of the students have not attained CLO1 while 69% have. Thus, this CLO1 is said to be attained since majority of the students have achieved it. Similarly, CLO4 and CLO5 have also been attained with 54% and 52% of students achieving it respectively while CLO2, CLO3 and CLO6 were not attained. Thus, the findings reveal that the following topics: probability, confidence interval and correlation and regression are the major areas of student difficulty that require the immediate attention from the teaching team.

In summarising the findings from a teaching perspective, we observe that students managed to use appropriate statistical methods to analyse data. However, there are other CLOs (for example, CLO2, CLO3 and CLO6) where the performance of students need to be looked at more closely, and teaching support could be targeted in areas identified above. Another factor that may need some attention is the allocation of weights for each CLO. As it is, some CLOs have been allocated more weight than the others are. For example, CLO1 and CLO2 were allocated disproportionately very high weights. While solving basic probabilistic problems may be important in a course such as this one, the findings from this study suggest that the teaching team re-look at weight allocations across the CLOs examined through final exams.

Reflections and Implications

In this study, we set to evaluate the quality of items that are used to measure students' learning in an undergraduate course in statistics. The findings indicate, based on the limited statistics such as discrimination and reliability index, that our test items were of an acceptable quality. In addition, our test items had undergone content validation where a group of subject matter experts had moderated the full length test paper. We acknowledge that we did not have much 'criterion-related evidence' of validity as this was not possible within the ambit of our action research. We also note that final examinations have their own limitations. One major limitation is that students are expected to express their knowledge in terms of written text, within a limited timeframe. On the contrary, it would be reasonable to assume that written tests do provide a good indication of student learning if certain qualities such as those identified with respect to our first research question are met.

An additional and more important aim was to ascertain the degree of student achievement based on the course learning outcomes. The study's objectives were pursued in light of the relative importance placed on university graduate outcomes, which in most cases reflect some higher-order learning dimensions. Evaluation of graduate learning outcomes through a thorough investigation of the course learning outcomes is critical because the percentage of pass rates and individual grades translated as GPAs do not normally reflect

actual academic performance of graduates (Carmichael, Palermo, Reeve, & Vallence, 2001; Caspersen & Smeby, 2018; Sadler, 2016; Wu & Jessop, 2018). A holistic look at our own analysis confirms this assertion. For example, while the overall pass rate in the course stood at 66 percent, three out of the six CLOs recorded less than 50 percent pass rates.

Apart from meeting such accountability requirements from external stakeholders, it is also important for university teachers to undertake such an analysis because at the teaching level, such analysis can reveal valuable information about teaching and learning. For example, as stated by Evans et al., (2017), information on students' performance on various learning outcomes can provide a basis for university teachers to ask questions such as what factors may have led to a better or weaker performance in one area? Questions of this type can have wider implications on curriculum as well on pedagogy. In addition to the two benefits above, an evaluation of student learning using an outcomes-based approach can have meta-cognitive benefits for the students themselves (Evans et al., 2018). Recent studies such as Wu and Jessop (2018) confirm that at higher education levels, there is lesser emphasis placed on making formative uses of assessment. Formative assessments, or assessments for learning, focus on learning outcomes. Making greater use of such assessments could potentially address other important dimensions of learning such as feedback and self-regulated learning (Brooks, Carroll, Gillies & Hattie, 2019; Hattie & Timperley, 2007; Shute, 2008;).

Based on the overall findings on students' performance in the course reported in this study, the teaching team acknowledges that there are a number of specific course learning outcomes that will require a more differentiated approach to teaching. The findings revealed that the following topics: probability, confidence interval and correlation and regression are the major areas of student difficulty. This can be addressed by converting one of the four lectures into compulsory study clinics which specifically focuses on these topics. This can be followed by exercise questions for the students to check their understanding.

The teaching team agrees that certain sections of the course may have been 'overmathematised' and there needs to be a review of teaching and learning activities as well as assessment activities. Given that the sample under investigation was a face-to-face class raises further questions about those students who may be taking this course via a distance mode of learning. While we did not carry out any analysis on distance learning cohort, we desire to take this up in our future research. In addition, in this study we looked at only the final examination component which represents only a half of students' achievement. In future, we also intend to explore how students perform on the continuous assessments.

Student performance is intertwined with good quality assessments. While we acknowledge that item-specific data reported in this study is tentative, nevertheless it provides a useful starting point in our journey to write better assessment items. As pointed out by Quaigrain and Arhin (2017), final examinations play an important role in providing useful feedback to teachers on their individual teaching actions. Hence, it is important that university teachers are able to come up with better quality tests – tests that have higher reliability and validity. Similarly, having better quality tests alone will not help. University teachers would need to invest time and resources in harnessing information that focuses on learners and the process of how they learn. According to Mathers et al., (2018), fewer universities currently collect such data. The current study in a step forward in this direction.

References

Artigue, M., Batanero, C. & Kent, P. (2007). Mathematics thinking and learning at post-secondary level. In F. K. Lester, Jr. (Ed.), *Second handbook of research on mathematics teaching and learning* (pp. 1011 - 1049). Charlotte, NC: Information Age Publishing.

Brooks, C., Carroll, A., Gillies, R. M., & Hattie, J. (2019). A Matrix of Feedback for Learning. Australian Journal of Teacher Education, *44*(4). Retrieved from http://dx.doi.org/10.14221/ajte.2018v44n4.2

Carmichael, R., Palermo, J., Reeve, L., & Vallence, K. (2001). Student learning: the heart of quality in education and training, *Assessment & Evaluation in Higher Education, 26*(5), 449 – 463.

Caspersen, J. & Smeby, J. (2018). The relationship among learning outcome measures used in higher education. *Quality in Higher Education, 24*(2), 117 – 135.

Clauser, J. C. & Hambleton, R. K. (2018). Item analysis for classroom assessments in higher education. In C. Secolsky & D. B. Denison (Eds.), *Handbook on measurement, assessment, and evaluation in higher education* (pp. 355 – 369). London: Routledge.

Coates, H (2016). Assessing student learning outcomes internationally: insights and frontiers, *Assessment & Evaluation in Higher Education, 41*(5), 662 – 676.

Evans, C., Howson, C. K., & Forsythe, A. (2018). Making sense of learning gain in higher education, *Higher Education Pedagogies, 3*(1), 1 – 45.

Gronlund, N. E., & Waugh, C. K. (2009). *Assessment of student achievement*. New Jersey: Pearson Education.

Hattie, J. & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77*(1), 81–112. Doi: 10.3102/003465430298487.

Jones, G. A., Langrall, C. W., & Mooney, E. S. (2007). Research in probability: responding to classroom realities. In F. K. Lester, Jr. (Ed.), *Second handbook of research on mathematics teaching and learning* (pp 909-955). Charlotte, NC: Information Age Publishing.

Judd, T. & Keith, B. (2018). Implementing undergraduate student learning outcomes assessment at the program and institutional levels. In C. Secolsky & D. B. Denison (Eds.), *Handbook on measurement, assessment, and evaluation in higher education* (pp. 69 - 86). London: Routledge.

Kipli, K., Bateni, N., Osman, M. S., Sutan, N., Joseph, A., & Selaman, O. S. (2012). Engineering Mathematics I: A Case Study of First Year Students at Faculty of Engineering, UNIMAS. *Procedia-Social and Behavioral Sciences*, *56*, 573-578.

Lehmann, I. J., & Mehrens, W. A. (1991). *Measurement and evaluation in education and psychology*. New York: Holt.

Mathers, C. E., Finney, S. J., & Hathcoat, J. D. (2018). Student learning in higher education: a longitudinal analysis and faculty discussion. *Assessment & Evaluation in Higher Education*, *43*(8), 1211-1227.

Palmer, J. C. (2018). The perennial challenges of accountability. In C. Secolsky & D. B. Denison (Eds.), *Handbook on measurement, assessment, and evaluation in higher education* (pp. 87 - 99). London: Routledge.

Payne, D. A. (2003). *Applied educational assessment.* Belmont, CA: Wadsworth/Thomson Learning.

Pierce, R. & Chick, H. (2013). Workplace statistical literacy for teachers: interpreting box plots. *Mathematics Education Research Journal, 25*(2), 189 – 206.

Punch, K. F. & Oancea, A. (2014). *Introduction to research methods in education*. London: SAGE.

Quaigrain, K., & Arhin, A. K. (2017). Using reliability and item analysis to evaluate a teacher-developed test in educational measurement and evaluation. *Cogent Education*, *4*(1), Article 1301013. https://www.tandfonline.com/doi/full/10.1080/2331186X.2017.1301013

Rickards, W. H. (2018). Talking about data. In C. Secolsky & D. B. Denison (Eds.), *Handbook on measurement, assessment, and evaluation in higher education* (pp. 100-113). London: Routledge.

Sadler, R. D. (2005). Interpretations of criterion-based assessment and grading in higher education, *Assessment & Evaluation in Higher Education, 30*(2), 175 – 194.

Sadler, D. R. (2016). Three in-course assessment reforms to improve higher education learning outcomes, *Assessment & Evaluation in Higher Education, 41*(7), 1081 – 1099.

Shaughnessy, J. M. (2007). Research on statistics learning and reasoning. In F. K. Lester, Jr. (Ed.), *Second handbook of research on mathematics teaching and learning* (pp 957 - 1009). Charlotte, NC: Information Age Publishing.

Shultz, K. S., Whitney, D. J., & Zickar, M. J. (2014). *Measurement theory in action: Case studies and exercises.* Routledge.

Shute, V. (2008). Focus on formative feedback. *Review of Educational Research*, 153-189. https://doi.org/10.3102/0034654307313795

The University of the South Pacific. (2018a). The University of the South Pacific Annual Plan. Retrieved from https://www.usp.ac.fj/annualplan2018

The University of the South Pacific. (2018b). 2018 Handbook & calendar. Retrieved from http://www.usp.ac.fj/fileadmin/scripts/HandbookAndCalendar/HandbookAndCalendar_2019_en.pdf

Watson, J. M. (1997). Assessing statistical literacy through the use of media surveys. In I. Gal & J. Garfield (Eds.), *The assessment challenge in statistics education* (pp. 107 -121). Amsterdam: IOS Press.

Waugh, C. K. & Gronlund, N. E. (2013). *Assessment of student achievement.* Boston: Pearson.

Wu, Q. & Jessop, T. (2018). Formative assessment: missing in action in both research-intensive and teaching focused universities? *Assessment & Evaluation in Higher Education, 43*(7), 1019–1031

Zainudin, S., Ahmad, K., Ali, N. M., & Zainal, N. F. A. (2012). Determining course outcomes achievement through examination difficulty index measurement. *Procedia-Social and Behavioral Sciences*, *59*, 270-276.

Evaluating professional learning and development programmes in Solomon Islands with open-ended questioning

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Abstract

When professional learning and development (PLD) is provided for educators, those responsible for programme design and delivery seek to offer an experience that is appropriate, challenging and helpful, with the aim of improving education by changing thinking and therefore professional behaviour. However, appropriateness, challenge and the kinds of thinking capable of constructing improvements in education vary according to context. In order to better tailor PLD, it is helpful to understand not only what educators think about their PLD experiences, but also the frameworks through which they respond to, appreciate and describe their learning experiences. In this article, we offer insights into the value of open-ended questions in programme evaluation to reveal the reactions and comprehension frameworks of PLD recipients through a case study of Solomon Island teachers. The research deals with responses to and appreciations of PLD experiences in a leadership programme and subsequent qualification offered to principals across education sectors throughout the Solomon Islands. Analysis of responses to a single open-ended question, "Any other comments?", reveals the importance of factoring in worldview, the fit between delivery mode and cultural practice, and contextual factors such as isolation when evaluating educators' accounts of learning and perceptions of PLD.

Introduction

Evaluation of professional learning and development (PLD) programmes is a key strategic component of any attempt to improve the quality of education provided by an education system. For PLD to be effective in producing positive change, responsiveness to context is required so that the fit between the circumstances of educators and the programme provision is continually interrogated and honed. Many forms of inquiry into the way educators experience PLD have been employed. As a heuristic to account for these, two general approaches can be described; closed and open. Closed approaches are those where PLD recipients are asked to respond to specific questions or frameworks in their evaluation. Examples in teacher education include the use of instruments such as Likert items (Reiter & Davis, 2011) and closed questions (Finsterwald, Wagner, Schober, Lüftenegger, & Spiel, 2013). Semi-structured interviews have also been used to support the evaluation of PLD, sometimes in conjunction with questionnaires (Uysal, 2012). The degree of openness of this approach depends on the conduct of the interview and the relationship between this and any closed instruments in a study.

As with all research, the usefulness to PLD evaluation of closed items depends on the researcher's intent and the ability of the approach used to honour this. There are circumstances in which open-ended approaches offer value beyond research engagements that construct their own closure. A case in point is where the backgrounds or experiences of PLD providers and recipients are dissimilar in significant ways, or where the assumptions that sit behind formal education do not necessarily sit well with educators' contexts. In such situations, providers may be limited by their own experiences and/or assumptions in their ability to ask questions of relevance to recipients. Instead, researchers can use an open approach to offer PLD recipients an open space to voice their experiences, relatively unrestricted by imposed structures. Thus, when evaluating PLD provided to Solomon Islands school leaders who are socialised and immersed in village life but work within an education system of colonial origins, an open approach can be valuable. The open-ended question is a form of obtaining participant or user feedback on products or programmes. In Solomon Islands educational leadership development programmes, while the open-ended question is used in

participant surveys, this form of questioning or its usage in Solomon Islands research has never been studied. Consequently, this Solomon Islands study adds to the literature on the open-ended question as used in a leadership development programme as part of a wider discussion on the evaluation of PLD.

The genesis of this study was purely out of curiosity. As the lead mentor in the Solomon Islands School Leadership Programme (SISLP), a Solomon Islands Ministry of Education and Human Resources Development (MEHRD) prescribed five-module PLD course for school leaders, the first co-author observed the diverse and rich responses of programme participants to a single open-ended question in a post-programme evaluation. Tagged at the end of a 16-question quantitative survey, the single open-ended question was, "Any other comments?" Initially, the first co-author did not pay much attention to the participants' responses to this question. Yet the first co-author was curious to see if there were any patterns that could be discerned from the varied responses of the school leaders. While the participants' consistent positive responses to the quantitative post-programme evaluation questions were noted, s/he was curious about how this picture compared to their responses to the open-ended question. In the end, we agreed for this study to explore the contents of the responses to the open-ended question. In focusing on the contents of the responses, we wanted to see if these were similar or different to other respondent groups elsewhere and to open-ended questions asked in other contexts. This developed into an inquiry into how Solomon Islands leaders responded to and appreciated the PLD in which they had participated.

At the time of this study, 1,300 Solomon Islands school leaders, at all levels of schooling including Early Childhood Education, Primary, Secondary and Vocational Training were undertaking a leadership programme, the SISLP. The SISLP was part of a Solomon Islands MEHRD policy, aimed at building the national capacity of school leadership. This policy goal was included in the National Education Action Plan 2013-2015, with clear requirements for school leadership and professional development standards for all school leaders (Ministry of Education and Human Resources Development, 2013). Participants in this study were scattered throughout the country. In the Solomon Islands, this means that school leaders were on different islands, many in schools located in remote and isolated villages. While the Solomon Islands school leaders who participated in the PLD were generally experienced, few had received formal training in school leadership until this programme was offered.

Literature review

The open-ended question elicits information and generates stories or quotations in a variety of contexts. In research, the open-ended question is often used as a data gathering tool. Bogdan and Biklen (1992) position the open-ended question within an open-ended interview. Kitzinger (1995) names the focus group as another structure for open-ended questions, although these may be constrained by foci developed from closed items (Uysal, 2012). In both contexts, the aim is to create a degree of freedom for respondents to set an agenda within the limits of the relevance of the research.

The open-ended question is also depicted as a potential tool in more constrained environments where an open approach contrasts with the balance of a research context composed of closed items. In such a context, the question of how relative freedom is met by respondents is important. According to Geer (1988), in a USA public opinion context where closed questions are also posed, open-ended questions provoke explanatory information which can, for instance, indicate the attitude of respondents. Such data can triangulate, supplement, qualify, deny or confirm data gathered in closed questions.

Despite the helpfulness of open-ended questions in research contexts, relevant scholarly research is not widespread. As a result, we have broadened this review to draw from a few disciplines: education, health and psychology. In the review, we assumed that where a focus group was employed, open-ended questions would have been used as a tool (Powell & Single, 1996). In addition, we sought literature with some combination of closed and open-ended items.

Education

Within Education, open-ended questions have been used to elicit information on a wide range of topics. Scrabis-Fletcher, Juniu, and Goh (2016) examined the perceptions of teachers using photovoice as a method during practicum. Photographs that preservice teachers had taken were presented to themselves and a group of peers during a focus group. Open-ended questions were used by a facilitator to stimulate responses about the teachers' personal experiences. The photographs represent an element of closed-ness in the research, acting to limit the moments of experience from which data was generated. Data from open-ended questions assisted the researchers to explore participants' feelings about these experiences.

A different configuration of open- and closed-ness can be seen in Jensen and Buckley (2014) who investigated the impact of science festivals on visitors using on-site surveys, extended on-line surveys and open-ended questions, again in a focus group. Interesting elements in their methodology include time as a factor in the employment of triangulation. Seven weeks elapsed between a respondent completing a closed on-site survey and their participation in a focus group. Results showed that visitors valued science festivals because these events increased interest, curiosity and knowledge of science and technology. Data from open-ended questions both confirmed and extended the researchers' understandings of the circumstances which assisted this value in persisting beyond the immediate context of a fair visit.

Away from a focus group setting, a study by Showunmi et al. (2017) used an open-ended survey constructed by reference to data from a preliminary quantitative survey. This was designed to identify peoples' perceptions of gender-based differences in educational leadership in Pakistan. The staged, temporal relationship between closed and open-ended approaches meant that the survey of open-ended questions had been focused, shaped and potentially constrained by responses to closed items.

A further combination of open-ended and closed questions can be seen in Odağ, Wallin, and Kedzior (2016) whose study used 47 closed-ended questions on a 5-point Likert-type scale, a single open-ended question and 12 supporting demographic questions. The open-ended question was used to ask 130 undergraduate university students from Western and non-Western cultures how they defined intercultural competence in education. The respondents described this mostly in terms of external outcomes, with the top three features being interaction, communication and cultural harmony. These results confirm the capability of a single open question within larger closed survey structure to reveal complex data regarding ideas and experiences of a wide range of people on an emotive topic.

A similar combination of closed and open-ended questions was used by Serrat, Petriwskyj, Villar, and Warburton (2016) to explore political education in Spain. Their study examined the various informal learnings which inspire older people's political participation. In this case, more than one open-ended question was asked, although the bulk of questioning was closed. The combination of question forms, open and closed, allowed standardized scales and a multi-dimensional analysis of respondents' own words to be incorporated into the research design. The study developed three major themes: social, political and instrumental learnings. The combination of data from closed and open-ended questions allowed the researchers to offer a contextual gloss on the prevalence of themes according to type of political organization. In addition, analysis of open and closed question responses supported informed speculation on links between socio-demography and the kinds of learning reported by participants. This suggests that the value of data from open-ended questions can be enhanced by integration with data from closed questions which may extend to speculation about causes and contexts.

Health

Three examples are drawn from Health. First, Monson, Lonergan, Caron, and Brunet (2015) examined the diagnostic potential of a single open-ended screening question for post-traumatic stress disorder compared to the diagnostic efficacy of a bank of closed questions. This study suggests that aspects of participant profile may be significant in the way people respond to open-ended

questions posed in a largely closed context. Second, Solan, Sherman, Deblasio, and Simmons (2016) examined the challenges to communication between primary care providers and hospitals by using a combination of open and closed questions in focus groups. Third, Homer, Turkmani, and Rumsey (2017) surveyed key post holders in twelve Small Island Nations in the South Pacific to determine the gaps in education, regulation, and the organization of midwives. While descriptive data of this kind could be collected by closed items, perhaps the researchers chose open-ended questions for the relevance to Pacific cultures.

Psychology

From Psychology, a further three examples are provided. First, Kenny, Hattersley, Molins, Buckley, Povey and Pellicano (2016) used an open-ended question to investigate the perceptions of 3470 United Kingdom adults on how best to describe autism. The single open-ended question placed at the end of the survey provided an opportunity for respondents to explain their attitudes to language used to describe autism. The study showed that the openness of a question allowed the unforeseen to enter the dataset. Second, Williams (2016) used web-based survey to gather data from 970 respondents to identify the main sources of occupational stress and emotional exhaustion amongst chiropractors. The role of the open question in this study was as a dependent variable. Third, Hughes, Massura, Anukem, and Cattage (2016) used a single open-ended question to gather data on why women undergraduates engage in psychological aggressions. The open-endedness of the question allowed for the emergence of some data categories which had not been envisaged.

Literature summary

From the reviewed literature, it may be said that the open-ended question is an effective means of data gathering. Data gained has been used to assess and improve practices, investigate relationships, identify individual or group perceptions, attitudes, and perspectives; and to explain the definition, condition, or reason behind an event or phenomenon. However, it is clear that factors such as the method by which the generation of open-ended questions takes place, the form of the question, the clarifications available to respondents, the relationships between open-ended questions and data from closed questions, temporal aspects of mixed-methods design and the uses to which data from various types of questions are put are contextual.

Material and methods

This study is based on post-programme evaluation responses by school leaders; participants in a PLD programme, the SISLP. Participants had gathered in 20 venues throughout the nine provinces of the Solomon Islands, and in Honiara. For Choiseul province, three villages; Western province, three; Malaita province, four; Guadalcanal, three; Makira and Ulawa, two villages; and one each in Isabel, Rennell and Bellona, Temotu, Central Islands and Honiara. At each venue, a five-day programme was provided, administered by a team of two trainers, members of the Fellowship of Faithful Mentors (a Solomon Islands NGO) who were contracted by the Institute of Education of the University of the South Pacific which administered the programme.

The evaluated module by school leaders for this study was on school leadership. Organized in four units, this module covered the following broad topics: understanding leadership, leading ethically, visionary leadership and leaders as change agents. Most of the questions in the post-programme evaluation instrument were closed. Questions were asked about participants' competencies relating to the contents covered in the four units, the extent to which key concepts were clearly explained, the extent to which programme facilitation was effective and the extent of impact on participants. Generally, the closed questions were intended to compare programme effectiveness among programme participants. In this way, data from the closed questions focuses on assessing the programme itself.

As stated, this study focused on the school leaders' responses to a single open-ended question, "Any other comments?" at the end of the largely quantitative questionnaire. What is significant about this question is its openness. Compared to many of the examples of open-ended questions discussed in the literature review above, this question offered respondents an opportunity

to provide material in any way and in any form they felt relevant. The catch-all question would probably have been received by programme participants in the light of the tone, focus and shape of the closed items by which it was proceeded. However, of itself the question offered no constraints or guidance on the legitimacy of potential responses. Thus, this survey adopted a mixed methods approach. However, there was no deliberate attempt to triangulate qualitative information with demographic or quantitative data. Instead, the discussion provided here of the significance of data gained from the open-ended question centers on what course participants offered.

In addition to a wide set of themes, reported in the literature review as a benefit of open-ended questions, a variety of intents such as reflection and recommendation are embedded in the data. The width of the responses and of their intents illustrates the revelatory potential of offering research respondents a relatively high degree of control over how and what they say in response to a question.

A total of 1,300 school leaders participated in the post-programme evaluation, providing 898 unique statements which were subsequently collated and examined. Generally, each statement was written as a complete sentence. Where phrases only were written, researcher cultural understanding was applied in the management of the data. Because the study data was qualitative, data was managed by NVivo software. Narrative responses were appropriately coded into primary thematic domains and secondary sub-themes. Iterative coding offers a researcher the possibility of rendering unique research contributions valuable beyond the individual level. This is through processes of connection and generalization in which analysis and interpretation inform each other (Fossey, Harvey, McDermott, & Davidson, 2002).

Results

The collected 898 responses were grouped into two main themes: (1), participant focused responses, and (2), recommendations for programme improvement. Within participant focused responses, sub-themes of reflective and action-oriented comments were established. Each of these sub-themes is further divided below. For the theme of recommendations, subthemes were established with foci on professional, personal, relational, structural and temporal recommendations for future programmes.

It is interesting to note there was an uneven spread in frequency of response themes by geographical location. Some types of responses were common in some centers and almost absent in others. Many factors may have been responsible for this, such as the kinds of post-programme, pre-survey discussions which may have taken place amongst participants. In addition, cultural responses to being asked survey questions understood as potentially critical of known people and individual personalities may have affected the frequency of some kinds of responses. While it is impossible to account fully for variations of this nature, especially in the absence of detailed demographic information, their presence suggests the value of caution where universal interpretation is applied to answers to open-ended questions. This situation points to the significance of complex contextual understandings of the responses offered by participants to open-ended questions.

Theme 1: Participant–focused responses

One of the two main themes derived from responses is that of the impact of the programme on participants. A total of 328 (37%) responses were recorded for this theme. These can be divided into two associated sub-themes, reflection and action, although some responses included material relevant to both. Reflective responses are those which take an analytical approach, typically looking inwards at the self, but also examining place and relationships. Reflective answers by participants can be grouped in three contexts: personal, place-focused, and relational. Action-oriented responses can be understood at three scales: personal, the immediate context and regional/national contexts.

Reflective Responses

Personal focus. Self-focused responses to the open-ended question "Any other comments?" reveal that programme participants wished to express appreciation for the programme as a source of knowledge and inspiration. This took several forms. Some respondents contextualized the impact of the programme by referencing aspects of their previous performance as a leader. Some stated this directly:

This training really pushes my understanding up about being a leader and showing me my failures and where I need to improve.

The course reminds me of my failures and I strongly feel that this training is important for me to shape my school leadership.

Others presented a critical sense of their past self as a leader by implication:

This workshop has really transformed some of my characteristics as a leader.

The programme helped me to think and reflect on my practices as a school leader and an agent of change.

However conveyed, answers which reflect negatively on the respondent as a past leader indicate that new knowledge has redefined good leadership for them. This suggests a deep level of self-awareness and honesty in participants: the open-ended question posed did not ask for self-examination nor for self-criticism. The presence of personal answers to a generic question suggests the training programme provoked inward-focused reflective thinking.

Place-focused. Another group of responses was on the context of leadership, generally at school. These answers suggest the contextual validity of new learning. In many cases, respondents claimed that new learning was a source of new vision for their school.

I am impressed and wholeheartedly gained knowledge and learnt a lot from this course. This course is like a light unto my path. And I am confident in myself that I have the potential to do capacity building in my school.

I am honored to have been selected to take this programme. I have now obtained the skills and knowledge as a school leader to influence and create change in my school context. I am looking forward to some great changes in my school.

Going beyond changing their school context through enhanced visionary leadership, one respondent drew attention to the iterative nature of leadership, indicating development of a sustainable leadership strategy because of the SILSP training:

As a school leader who is new to everything in leadership, I really learnt a lot. I can visualize now how my school will be changed in the years to come. I also realize that to raise future leaders, we must be models for them to shape them.

In some cases, visionary reflections of this nature were accompanied by a sense of the contextual difficulties of implementing new leadership skills and knowledge:

Being a school leader is not an easy task. I have learnt a lot from this course. This will help shape my leadership qualities. It is also very challenging.

By drawing attention to the contextual application of learning, appreciating the difficulties as well as the potential of new ideas about leadership, school leaders displayed a significant level of engagement in the SILSP course. This suggests that learning took place which, when filtered through the lens of experience, remained viable.

Relational focus. Some respondents provided reflective answers which displayed a relational focus. Within the context of their schools, these leaders described how their learning would flow through relationships so that others would also be provided with new ideas. For instance:

Here I would like to thank you for reminding us strongly, firmly about leadership and how we are going to play our roles. I am going back to my school to share with my teachers, what I have learnt.

Educating other staff about leadership goes beyond changing the school as an institution and exercising skills oneself. In a relational view, leadership is not a skill to be claimed individually, but a mind-set and skill base to be shared to the personal benefit of others. The word 'position' in the following response implies similar responsibility to others.

This training is a very enjoyable one. I learnt much and have identified challenges that I face and know where I am in the first position and the way I am going to follow. I now know what I as a leader should do to make improvements.

Relational learning can also be seen in the following response:

This workshop helped us school leaders to realize our positions and equipped us to impact change in our school communities.

The term 'position' is relational, denoting where one is in space compared to others. In the above two responses, position speaks of obligation to others. These responses reveal participants' appreciation that an impact on the community and consequent improvements are expected of those entrusted with leadership.

Action-oriented responses

Action-oriented responses go beyond examining the self or context and move towards describing future actions. Beyond learning about themselves as leaders and imagining how new ideas of leadership might improve their places of work and working relationships, course participants gave action-oriented answers to the open-ended question "Any other comments?" Action-oriented responses is the consequence of enhanced self-belief and/or of enhanced appreciation of need.

Enhanced self-belief. Some action-oriented responses touched on self-belief, particularly as it affects ambition. Following their recent training, some participants imagined future actions at a personal level. For instance:

The workshop had fired up my passion to move higher as a school leader because of the very educational teachings.

This response suggests a participant inspired to gain promotion to see the fruits of new ideas in action. Another action inspired by the course is to remain in education:

This programme is very good and it strengthens me to be committed in my career.

This response suggests an individual revitalized in self-belief and renewed forward direction. Similar responses include:

I was really blessed by the course and I am now very happy, knowing what I now know and what to do or where to go next. Thanks very much.

and,

The workshop really challenged me to implement what I have learnt.

From these responses, self-belief and the ambition which can stem from it were significant to a number of course participants.

School-focused contextual action. Several participants commented on how the programme helped them reflect on the needs of their schools, and on how re-understanding leadership could lead to the deliberate performance of new school-focused actions. For instance:

I have learnt a lot, encouraging me now to have the courage to be a change agent when I return to my school as a leader of my school.

The contents and contexts of the programme have helped me to think of a "baseline document" that schools need for mentoring new leaders so that they and everyone know everything that is going on in a school.

A very well-presented training. In this training, the units learnt have really given me an opportunity to see new ways and approaches to shape me as a school leader. The implementation and putting things into action are what I should do as a school leader from now and onwards. God bless.

In their own way, each of these responses illustrate course participants linking learning with contextual knowledge so that actions can be promulgated based on enhanced awareness. These actions include fomenting change, developing mentoring and adopting new educational approaches.

Wide-focused contextual action. For a few leaders, the possibilities of contextual action stretched beyond the school. That is, a wider context validated revised understandings of their positions as leaders. This added to the value of the course. For instance, one response suggested a leader's actions imagined on a national scale:

I learnt a lot from this programme. The additional skills learned would help me as a school leader to lead effectively in my school and in the country.

Another leader referred metaphorically to an enhanced desire to bring about change at regional and state levels:

You have started a fire in our hearts to help bring about change in our region and Solomon Islands.

A third described the learning as creating a new future for the education system:

The future is very promising for our schools. This programme is one of the great undertakings of our education system in Solomon Islands.

These responses illustrate the way course participants linked enhanced knowledge, increased ambition and action. Links made by participants were made visible to the study as a result of the open-ended question.

Theme 2: Recommendation-focused responses

While many responses paid attention to the impact of the SILSP PLD course on participants, a significant number gave information of the experience of the course itself, most usually in the form of recommendations. In the second main theme of recommendations, a total of 570 (63%) responses were recorded. In the sections which follow, examples of these responses are presented. These are organized to illustrate four sub-themes: professional, relational, structural and temporal recommendations.

Professional. In the following section, examples of responses focused on recommendations which relate to the professional value of the programme are offered. These comments focus on the future availability of training and often justify this through positive experiences of the SILSP course. Some recommendations were addressed to leaders and teachers:

Leaders should value programmes like this as they are important for our enhancement and active participation. I would recommend that this programme is taken by all teachers throughout the Solomon Islands as that is the only way forward for this nation.

Some recommendations for future initiatives were addressed to funders of training:

I would recommend to Responsible Authorities to ensure that this course is on-going not only for school leaders but every teacher in the Solomon Islands. This is because the programme equips us as teachers and leaders.

Recommendations to funders were also made regarding the status of the course and access to the course for professionals:

The course is worthwhile for teachers. If it is possible, the Government must try to include this course as a required programme at the Solomon Islands National University.

If made a required programme, newly qualifying educational leaders would undertake similar training as part of their accreditation. Echoing a similar view, another participant stated:

The programme has been very well presented with good examples to consolidate our learning. I believe that this course should be a pre-requisite for taking up any school leadership roles.

Other recommendations in this professional sub-theme include ideas on: stair-casing to a graduate diploma in school leadership; offering authority to school leaders who have completed this programme to run short courses for their teachers in their schools; and for the Ministry of Education to increase and make available daily allowances of time to participants for leadership activities.

Relational. Relational responses in this study generally involve appreciation of individual mentors/facilitators with whom participants worked in the course, as well as recommendations for the future. Several SILSP participants used the open-ended question to express gratitude to facilitators:

This is a very informative training by inspirational facilitators, and I thank and formally acknowledge J and D.

The course has been experienced as an excellent workshop for teachers. Foremost the lecturers' presentations were excellent and brilliantly clear - we thank J for his God-given presentation.

I wish to offer lots of thanks to J and P. It was a privilege to learn from these great men.

These responses suggest that the power of information was enhanced through appropriate relational contact with effective trainers.

Other participants made recommendations for future courses based on their initial experiences:

I strongly recommend that F and B be lecturers again in the remaining Modules.

J, your presentation was very clear. I hope you will be our lecturer again in the next

training. Thank you and God bless.

Again, in these responses a clear link can be seen between training staff, their relationships with participants and the perceived effectiveness of the programme. These participants recommended more of the same.

Other recommendations centered on potential improvements to the training programme. Some responses recommended future iterations of the programme should involve different stakeholders. These might be other educationalists:

The leadership course needs to be extended to deputy principals, senior teachers, heads of departments and even school chaplains.

Although this course is very challenging, I am very happy to be included. I suggest this course should be given to all school leaders in the country.

For others, additional stakeholders to whom training should be extended included religious, civic and kastom (traditional) leaders:

The course should be extended to include church leaders, village elders, chiefs and other stakeholders as it is vital for a better Isabel and Solomon Islands.

The course should be extended to include our village chiefs and Members of Parliament because the content of the course is relevant and applicable for them.

The different foci for new groups of recommended participants suggests that for some school leaders, the leadership ideas of the programme were understood primarily as educational items. For others, the value of learning about leadership may have been understood as more generic.

Not all responses were positive. For instance, some respondents recommended trainers should improve such things as the training approach and methods used. For example, participants

from one center suggested: there should be less discussion and more elaboration on the concepts; facilitators should deliberately involve the whole classroom; and the approach to learning should be trainee centered. Another participant commented that communication with leaders should be simple and clear, in effect recommending a simplification of approach. Another respondent recommended changes to pace:

The workshop was very good but some of us do not grasp the ideas quickly because the facilitators rushed through the module.

Structural. Many of the recommendation-focused responses of the participants were on structural or organizational matters such as on how the delivery of the programme could be improved. Common suggestions from respondents called for improvements in the venue, changes to catering services, and extending the timeframe for the programme. The following examples reflect the comments about the venues:

Facilities are not adequate. There are no proper chairs and tables. There are no washroom facilities. There is no electricity.

The venue needs to change. We need proper facilities because this is not a workshop but an award programme. We are really disadvantaged.

The accommodation is comfortable during wet weather but uncomfortable during sunny days, especially the upstairs floor.

Catering was commonly commented on by participants. While a few stated that it was good, most asked for improvements on the variety of the diet and the delivery of the service.

Temporal. Constraints of time were a problem for the programme in two main ways. Firstly, the timing of programme elements was subject to recommendation:

Assessments and tasks should be given more time and not be expected to be done overnight.

For demanding assignments such as assignment 1, we should be given 2 days to complete it.

Concerning assignments, I think the due dates should be after 48 hours so that we are given the time and space to do the work efficiently.

The timeframe for giving assignment should be reconsidered. I recommend that we have 2 days to spend on the assignment.

Secondly, several participants suggested a longer overall time frame:

This workshop should be run for four weeks.

I recommend that the training period be extended to two weeks or more.

The timeframe is not enough and the programme should be run for two weeks.

One week is not enough and I prefer 2 weeks. This is to give ample time to read and understand the materials clearly.

One week is too short for me as a learner. The course should be run for at least two weeks so that each unit could be facilitated slowly and thoroughly.

One participant confronted the realities of providing training through SILSP by suggesting a strategy for extending the time frame without making further demands on trainers:

The duration of the workshop or time frame should be further extended to two weeks. Course materials must be sent to us, school leaders, to be studied some weeks earlier before the actual workshop.

In all the areas of recommendation; professional, personal, structural and temporal, the focus of responses was on appreciating and maximizing the potential of learning about leadership through SILSP. The width of recommendations suggests the potential of an open-ended question to expose positional and experiential knowledge relevant to the efficacy of the training programme. For

most participants, the training was akin to *'a golden chance that fell from heaven'* as one respondent put it. That is, a rare opportunity to be validated as a leader in education.

Discussion

By asking an open-ended question of Solomon Islands school leaders at the end of a quantitative survey, a wide range of information became available to this study and to the team evaluating the PLD programme. Much of this displayed reflective thinking. Reflexive responses addressed a range of contexts; personal, school-focused and relational. In addition, action-focused thinking was in evidence, again across several contexts; personal, school-based and relevant to wider spaces. A further type of thinking embodied another set of responses: recommendation. School leaders offered recommendations on professional, personal, structural and temporal aspects of the programme.

Such a wide set of data confirms one finding of the literature review: open questions which make space for respondents to set the agenda can yield rich and varied data, sometimes beyond the expectation of the researcher. Where one might have expected information about the nuts and bolts of the course, complex thinking which addresses the transformative power of leadership through PLD was in evidence. In addition, again echoing the literature review, the data confirms the value of the open-ended question as a tool which can provide explanatory information and the attitude of respondents, informed by the ideas and experiences of individuals of use to programme evaluators.

Although the data presented in this study was provided in response to a question asked after a bank of closed questions, no attempt has been made to triangulate data types. Although our interest has been in open-endedness itself as a tool for PLD evaluation, such triangulation remains a possibility for the future. Similarly, while some general observations have been made regarding variance in the prevalence of themes by geographic location, no comprehensive attempt has been made to leverage possible links between geo-socio-demographic and qualitative data. That too is outside the scope of this study.

Nonetheless, much worthwhile information has been provided on the topic of PLD for leadership, specifically leadership in education in the Solomon Islands, adding to that which exists (Sanga & Houma, 2004). Beyond material about the conduct and details of workshops, a sense that most participants found the leadership training inspiring, thought provoking, engaging, enlightening, and encouraging is clear. Many participants reported an expectation that their experiences of the SISLP workshop would have positive impacts on their careers and leadership positions. They claimed to have learnt new skills and knowledge to make them more confident and better equipped in what they do daily. The workshop was a medium not only for their professional development but also for them to deeply reflect on their profession and roles. Such thinking is evidence of a hunger for effective leadership training and of a sense of blessing when it is obtained. For providers, this suggests that future programmes may have long lasting and wide effects. While leaders' expectations regarding the practicalities of providing a course need to be taken seriously, the general attitude of course participants revealed through the responses shows the appreciation of school leaders, many of whom work in rural locations, for training which validates them, their profession and the schools which they lead.

As a consequence of this information, in addition to practicalities, the attention of programme evaluators is directed at clarifying the formal and informal relationships between PLD and career opportunities; privileging context by curating space for local issues, understandings, experiences and stories; recognizing the significance to participants of relationships with PLD providers and thus the value of delivery methods that validate this; and the multiple frameworks through which PLD participants see the significance of their learning: school, local and national. Responding positively to this wide basket of evaluative information provides an opportunity for PLD providers to respond to what school leaders who participated in the SISLP PLD were thinking during the programme. Listening well to the answers PLD participants provided to the open question "Any other comments" aids the search for appropriate, challenging and helpful programme design capable of improving education by changing thinking and therefore professional behaviour in

contexts that vary in culture, degree of isolation and educational provision. Paying attention to the kinds of learning PLD participants report has much potential in this quest.

Conclusion

Open-ended questions can induce rich and robust information from respondents. In this study, an open-ended question in a post-programme evaluation facilitated participants to not only reveal aspects of their first-hand experience but also to give evidence that they had reflected, re-thought and then seen the potential to act on their learnings. After the programme, many participants described themselves as invigorated, inspired, and transformed leaders.

This study has discussed responses to a specific open-ended question in the context of an evaluative survey which followed a module of an educational leadership development initiative in the Solomon Islands. It has presented an analysis which illustrates the many kinds of responses made and suggested the value for researchers (and course facilitators) of such a variety. The responses were revelatory about participants' understandings of themselves as people, as leaders, of their contexts and their experiences. The analysis provided suggest the depth of learning available for researchers and programme evaluators from responses to open-ended questions.

Open-ended questions are perhaps particularly useful where a survey population is diverse and where aspects of cross-cultural positioning are in play. In this case, although all these involved were Solomon Island school leaders, local circumstances and individual experiences varied widely across the many islands and provinces of the Solomon Islands. In addition, educational structures of Western origin may not mirror local understandings in areas such as leadership, the focus of the SISLP PLD. In such circumstances, providing a tool where those who wish to can give an image or a moment of learning from their own context is useful. Tok stori (Sanga, Reynolds, Paulsen, Spratt, & Maneipuri, 2018) is a Melanesian cultural communication form which invites a joint construction of reality through the verbal interaction of storied lives. It may be that the affinity of an open-ended question such as "Any other comments?" with a tok stori approach which places minimal restrictions on what counts as valid information makes open-endedness a particularly valuable contextual approach for programme evaluation and research in Melanesia.

Acknowledgements

References

Bogdan, R. C., & Biklen, S. K. (1992). *Qualitative research for education: An introduction to theories and methods*. Boston, MA: Pearson.

Finsterwald, M., Wagner, P., Schober, B., Lüftenegger, M., & Spiel, C. (2013). Fostering lifelong learning–Evaluation of a teacher education programme for professional teachers. *Teaching and Teacher Education, 29*, 144-155.

Fossey, E., Harvey, C., McDermott, F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian and New Zealand Journal of Psychiatry, 36*(6), 717-732.

Geer, J. G. (1988). What do open-ended questions measure? *Public Opinion Quarterly, 52*(3), 365-367.

Homer, C. S. E., Turkmani, S., & Rumsey, M. (2017). The state of midwifery in small island Pacific nations. *Women and Birth*. doi:10.1016/j.wombi.2017.02.012

Hughes, H., Massura, C., Anukem, O., & Cattage, J. (2016). Women college students' reasons for engaging in psychological dating aggression: A qualitative examination. *Journal of Family Violence, 31*(2), 239-249.

Jensen, E., & Buckley, N. (2014). Why people attend science festivals: Interests, motivations and self-reported benefits of public engagement with research. *Public Understanding of Science, 23*(5), 557-573. doi:10.1177/0963662512458624

Kenny, L., Hattersley, C., Molins, B., Buckley, C., Povey, C., and Pellicano, E. (2016). Which terms should be used to describe autism? Perspectives from the UK autism community. *Autism* 20, 442–462. doi: 10.1177/1362361315588200

Kitzinger, J. (1995). Qualitative research: introducing focus groups. *Bmj, 311*(7000), 299-302.

Ministry of Education and Human Resources Development. (2013). National Education Action Plan 2013-2015, Honiara, Solomon Islands: MEHRD.

Monson, E., Lonergan, M., Caron, J., & Brunet, A. (2015). Assessing Trauma and Posttraumatic Stress Disorder: Single, Open-Ended Question Versus List-Based Inventory. *Psychological Assessment*. doi:10.1037/pas0000223

Odağ, Ö., Wallin, H. R., & Kedzior, K. K. (2016). Definition of Intercultural Competence According to Undergraduate Students at an International University in Germany. *Journal of Studies in International Education, 20*(2), 118-139. doi:10.1177/1028315315587105

Powell, R. A., & Single, H. M. (1996). Focus groups. *International Journal for Quality in Health Care, 8*(5), 499-504.

Reiter, A. B., & Davis, S. N. (2011). Factors influencing pre-service teachers' beliefs about student achievement: evaluation of a pre-service teacher diversity awareness programme. *Multicultural Education, 19*(3), 41-46.

Sanga, K., & Houma, S. (2004). Solomon Islands principalship: Roles perceived, performed, preferred and expected. *Directions: Journal of Educational Studies, 26*(1), 55-69.

Sanga, K., Reynolds, M., Paulsen, I., Spratt, R., & Maneipuri, J. (2018). A tok stori about tok stori: Melanesian relationality in action as research, leadership and scholarship. *Global Comparative Education, 2*(1), 3-19.

Scrabis-Fletcher, K., Juniu, S., & Goh, T. (2016). PETE Candidates' Perceptions of Readiness and Preparedness to Teach. *Research Quarterly for Exercise and Sport, 87*(S2), A114-A115.

Serrat, R., Petriwskyj, A., Villar, F., & Warburton, J. (2016). Learning Through Political Participation. *Adult Education Quarterly, 66*(2), 169-187. doi:10.1177/0741713615627013

Showunmi, V., Moorosi, P., Aziz, F., Kalsoom, Q., Quraishi, U., & Hasan, S. (2017). Perceptions on gender-based differences in educational leadership. *Management in Education, 31*(2), 75-81. doi:10.1177/0892020617696628

Solan, L. G., Sherman, S. N., Deblasio, D., & Simmons, J. M. (2016). Communication Challenges: A Qualitative Look at the Relationship Between Pediatric Hospitalists and Primary Care Providers. *Academic Pediatrics, 16*(5), 453-459. doi:10.1016/j.acap.2016.03.003

Uysal, H. H. (2012). Evaluation of an in-service training programme for primary-school language teachers in Turkey. *Australian journal of teacher education, 37*(7), 13-29..

Williams, S. Chiropractors' perception of occupational stress and its influencing factors: a qualitative study using responses to open-ended questions. (2016). *Chiropractic and Manual Therapies,* 24, 2. https://doi.org/10.1186/s12998-016-0083-1

Lived Experiences of Newly Qualified Fijian Nurses during clinical placement eleven months after registration in Fiji.

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Abstract

This study reports on the experiences of Fijian Nurses, who are new graduates, in their first eleven months of clinical placement. The study makes use of a qualitative phenomenological methodology. Nine (9) new nurses from two schools of nursing in Fiji who worked at the Colonial War Memorial Hospital participated in this study. Six participants were male and three were female. The data was collected through semi-structured interviews and analyzed through thematic analysis. Four themes emerged from the data: 1) emotional reactions, 2) reality shock, 3) organizational factors and 4) competency. There was a mix of strengths and weaknesses identified under these themes. The importance of adequate support especially qualified preceptors, proper orientation and a stress-free environment during the clinical placement is evidently the departing message for educators, institutions and health departments.

Introduction

The student nurses upon graduation embark into a journey of transition from being a student nurse to a professional, registered nurse. Owing to this transition from a closely supervised learning journey to an authentic working world, demands greater decision-making and confidence as they engage with patient care. This calls for a caring and supportive learning environment for these new graduates.

Shrestha and Joshi (2014) reported that students felt a sudden loss of close supervision from instructors and new nurses found transition as a very challenging event for them (Ostini & Bonner, 2012). Others reported that new nurses felt they were in a reality shock while transitioning from being student nurses to registered nurses (Duchscher, 2008; Ndaba, 2013). A shortage of human and material resources, overcrowding, lack of support and being placed in clinical settings beyond their cognitive comfort levels led to a reality shock for nurses (Duchscher, 2008). In another study, the new nurses felt "inadequate and requested for support upon entry into the service" (Dlamini, Mtshali, Dlamini, Mahanya, Shabangu, & Tsabezde, 2013, p.153). The authors further added that there are no programs aimed to equip new nurses during transition instead they were left to manage their wards themselves rather than being provided with an orientation and support.

A number of studies reveal unreasonable expectations from new graduates and a lack of proper mentoring (Birks, Burkot, Bagley & Mills, 2018; Evans, Boxer & Sanber, 2008; Maitland, 2012). Maitland (2012) pointed out that new graduate nurses felt anxious owing to an unfair expectation from them to perform as a professional nurse, coupled with a lack of support and time with preceptors, and lack of time allocated for study. Similarly, other researchers also found a lack of support and resources, proper orientation resulting in fear and anxiety amongst the new graduates (Lea, 2013; Ostini & Bonner, 2012). More importantly, the ratio of new graduate nurses with registered nurses with appropriate skillset to act as preceptor is another point of contention (Birks, Burkot, Bagley, & Mills, 2018; Lea, 2013). On the other hand, while highlighting challenges, Evans, Boxer and Sanber (2007) emphasised that the newly graduated nurses performed well when the support was available to them.

The transition experiences in the aforementioned studies indicate a mix of challenges and some strengths, thus it was deemed essential to explore the lived experiences of newly qualified Fijian nurses during their clinical placement period.

Methodology

This study focused on two research questions with the aim to understand how clinical placement influences newly graduated Fijian nurses and thus focused on the following questions.

1. What is the nature of experiences affecting newly qualified registered nurses in Fiji's main teaching Hospital?
2. How do these experiences affect newly qualified registered nurses in Fiji's main teaching hospital?

A phenomenological methodology grounded in interpretive paradigm was applied to explore the experiences of newly registered nurses in clinical placement. Nine (9) individuals based at the Colonial War Memorial Hospital (CWMH) participated in this study. The ethics approval was granted by the USP's Faculty of Arts, Law and Education Research Committee (Approval No: FALE 23/16) and National Health Research Ethics Review Committee, MoHMS, Fiji (Approval No: 2016.126 CD). An approval to conduct the research was obtained from the Medical Superintendent of the Colonial War Memorial Hospital. The participants read the information sheet and signed the consent form. It was agreed that participants could withdraw from the study at any time they felt uncomfortable but they did not.

This study employed the semi-structured interview design with broad open-ended questions and the researcher probing to derive more constructive information from the participants. A quiet room in the hospital was chosen as the most appropriate place for the interview with the participants and all interviews were audiotaped. The interview lasted at an average of 45-60 minutes long. Field notes were also taken during the interview. The interviews were transcribed by the first author. The first author thematically analyzed the data and sorting the data into codes and themes. The themes were revisited after a week and also checked by the second author. The process resulted in four main themes namely *emotional reactions*, *reality shock*, *organizational factors* and *competency*.

Findings.

The four themes and sub-themes (Figure 1) emerging from each are discussed in this section. At the outset, it must be noted that the absence of preceptors was realized as soon as a couple of interviews were conducted.
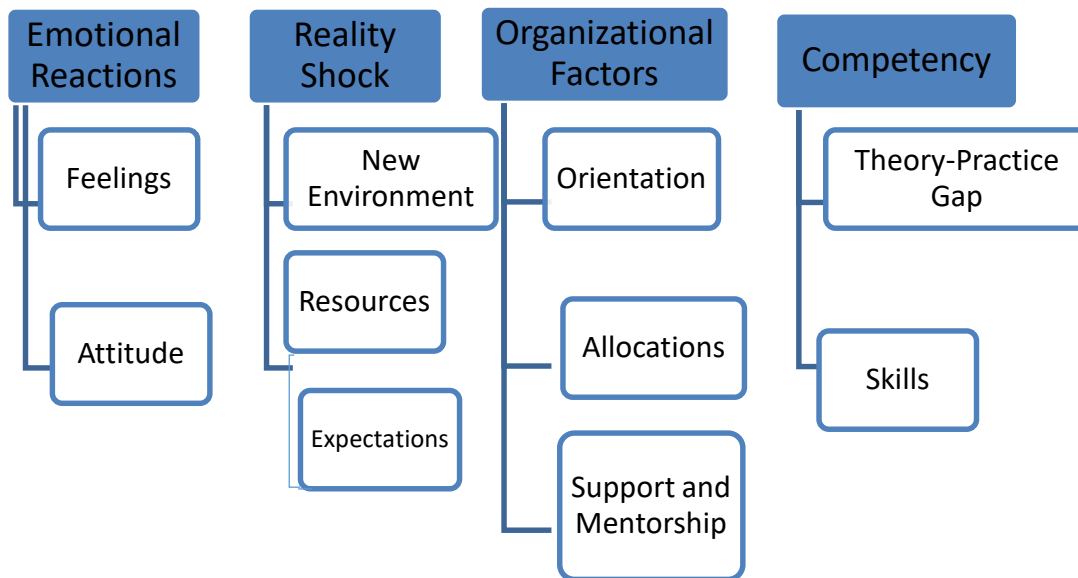
Figure 1: Themes and sub themes

Emotional Reactions

Feelings

The participants reported feelings ranging from negative, to being mixed, to positive, during this transition. The negative feelings comprised of being nervous, scared and /or apprehensive on the first day when they started work. Being posted to an acute ward or an intensive care unit was hectic, and very challenging to a few of them.

Working in the new environment where they had never worked before was nerve-wrecking, scary and challenging. At the same time, it reminded them that this could be due to the transition from student to registered nurse. They felt nervous working with babies in the high dependency units, calculating medications on their own and asking for help from the senior nurses seemed more intimidating. The unreasonable expectation to know everything as the Bachelor of nursing graduates made them feel disconnected and scared to ask for assistance from the senior nurses. While they felt that the environment was not conducive to learning they also believed that with time this experience could improve for the better.

Participants mentioned feeling challenged working in the acute wards for the first time:

"…*challenging as we never worked here before. Maybe this was the transition part from being a student to a staff nurse.*" (P-4)

"*It was a very high dependency (unit and) they expected (us to know all) about the different procedures and we were dealing with babies that's why I felt very nervous*" (P-9)

The satisfaction of learning new knowledge and skills, engaging in patient care and the desire to succeed, paved a way for positive feelings among some participants. They felt they had to be responsible as registered nurses which in turn made them feel better. Towards the end of the internship, participants began to feel good about being a nurse, started to enjoy their work and felt proud to serve different patients each day. This was expressed in different ways:

"I think that I am very overwhelmed, (and) as a registered nurse it is a blessing" (P-2)
"The feeling is quite good; I am very happy" (P-3)

Attitude

The attitude of some senior nurses, patients and their relatives affected new graduate nurses' emotional reactions. They reported senior nurses had preconceived judgments about new nurses who were the first cohort of bachelor graduates which, in turn affected their attitude towards new graduates. The attitude equated to bullying behavior by senior nurses which often resulted in unacceptable behavior towards the new nurses. Some new nurses felt they were treated unfairly for instance, they would be sent out of the wards to get items to be used in the wards and expected to carry out all the responsibilities on their own.

A new graduate mentioned having a degree made it difficult to get closer to senior nurses as a source of knowledge giver. The participants shared that the comments from senior nurses would imply they were not happy to assist the new graduates, for instance:

"There were some staff who like to be grumpy. If we ask anything they would say, you guys are bachelors you should know everything" (P-4).

"She was a bit strict on us, harsh and not friendly. I would say, it was kind of a bullying relationship" (P- 8)

"What I would like to see change in PICU (Pediatric Intensive Care Unit) is mainly the attitude of some of the staff, their approach, how they [Senior nurses] approach to some of us junior nurses" (P-3).

The attitude of some patients and their relatives also affected the new nurses which was communicated in several instances through different mediums such as social media, off-hand comments:

"I would say it's challenging to have more in their [patients] part and they [patients] expect more to be done to them since they are paying for their services. I also feel bad looking at the unfavorable descriptions that people put in the media about nurses, it's really heart touching when you work so hard for the patients, then you get this kind of feedback…the attitude of patients and relatives make our work more difficult and their demands more stressful at times" (P-6)

Reality Shock

New Environment

New graduates found the new environment challenging, as the majority of them make their initial transition to professional practice within the hospital environment where the reality was different from their expectations. Participants reported being scared, apprehensive, and nervous because of the new environment. Nurses who graduated from Sangam Nursing School were posted to certain high dependency units which was a completely new environment for them and they felt scared. Moreover, FNU nursing graduates also had similar feelings because they had never worked in these areas owing to infection control measures.

As mentioned by the participants:

  "*The first day was in NICU, I did practical in Labasa, I went to the biggest hospital (for my orientation and) it was a bit of a scare*" (P-1)

  "*The first day was very hectic, coming to a new ward, [was a] learning experience for me, was very nervous about the work I had, I was very scared*". (P-2)

  "*We started our rotation with pediatrics, I was very apprehensive but eager to learn and work*" (P-3).

Resources: Human Resources

Human resources was another challenging issue, as there was staff shortage in almost all areas of the clinical placement. To begin with, there were no preceptors but senior nurses who had a job allocation and patient care to cater for had to supervise the new nurses too. This resulted in senior nurses not being able to devote enough time with the new nurses. As a result, new nurses had to carry out new procedures on their own. The pressure to cope with sudden change in responsibilities and change of shifts with no prior preparations was perceived stressful.

However, the participants acknowledged that even though senior nurses were not preceptors, they had a wealth of knowledge and skills and were glad that they took time to supervise and guide them.

Resources: Material Resources

A lack of material resources was a concern, which hindered patient care in some wards. Some participants mentioned that important equipment used on a daily basis were not in good condition, needed fixing or replacement or required borrowing from other wards or sometimes even go without carrying out the procedure. New nurses considered it time consuming and unethical as it would cause a delay in patient recovery.

On the other hand, new nurses found the protocol ward books and the in-service workshops beneficial for them, where they revised and learned many new things. The workshops also assisted them with gaining Continuous Professional development (CPD) points for their nursing licensure at the end of the internship program. New nurses mentioned that they found good resources on the internet which assisted them in finding solutions for things they were unfamiliar with. Senior nurses in the wards also took time to assist new nurses in teaching and learning activities in the wards.

Expectations

There were mixed expectations from the participants as their views on staff were different. Even though they had different expectations, new nurses were quickly able to adjust to those differences. They mentioned issues such as lack of team work in some wards, the work pace in other units, the different attitude of some professional nurses and patient expectations. New nurses also mentioned not being able to become part of the team could result in a negative clinical placement and reduced learning opportunities which is similar to Birks et al., (2017) findings. Expectations to carry out patient care was very high for the new nurses even though responsibilities and support was not given in a consistent manner during internship. New nurses felt that there should have been a better support system to guide them during the transition.

Organizational Factors

Organizational factors played a very important role in the lives of newly qualified nurses during the transition period. They mentioned the support system, which was not up to standard, and was inconsistent. Different wards had their own style of orienting the new nurses, in which some team leaders would leave the new graduates to find their own way in the ward.

Orientation

Participants mentioned that the one-week orientation at the beginning of the clinical placement was very constructive but they needed more time to explore the wards. Some new nurses really enjoyed the one-week program as they learnt new things during this time, for example, the infection control program and the filling of the Unusual Occurrence Report (UOR) forms.

New nurses felt frustrated when they were rostered to do night shift during the first week into transition, without proper orientation of the ward and lack of supervisor. However, some nurses felt they did not need any orientation as they had worked in those areas during student training days.

Allocations

New nurses felt they were rostered too early to high dependency areas, in which they had not worked before in their student training days and had felt they were not ready to work in such demanding areas. However, some new graduates felt they were satisfied with the support provided by the senior nurses in different wards. They mentioned that they faced challenges but it was a good experience to learn autonomy through transition and be ready to serve the people in their country.

Support and Mentorship

It was evident from the interviews that senior nurses provided overwhelming support to the new nurses in some cases, but their own workload limited their efforts to assist. The new graduates felt that the guidance of a qualified preceptor would have helped ease this situation. A need for preceptors who are suited to teach the new nurses is an essential tool during transition (Anderson, Broadbent, & Moxham, 2018). Working with senior nurses who had assisted the graduates during their student training days was considered helpful and motivating as they felt comfortable asking questions without fear. Participants also felt relaxed when they worked with their peers during the shift as it was easy to interact and work with them. The new nurses were content with the support and the guidance provided by some senior nurses in their first clinical placements, which boosted their learning process.

Competency

The knowledge and skills taught at the education system was adequate as they were able to use this knowledge efficiently during the transition. However, there were some procedures which they mentioned as challenging due to lack of appropriate resources and equipment in certain wards. New nurses also mentioned that they were a little reluctant to take up responsibilities because they were not given such tasks during their training. They found drug calculation challenging and felt they wanted more assistance from the senior nurses, anticipating that they will make a mistake and the patient's life would be at risk. However, they were grateful for the guidance provided by some senior nurses during the shift.

Theory to practice gap was another issue mentioned by new graduates whereby they felt that senior nurses had vast knowledge and skills with a Diploma in Nursing whereas the new graduates with a Bachelor of Nursing had none. Senior nurses would expect new nurses to be at par with all procedures and the ward routine. New graduates also mentioned that certain procedures were taught differently in school and they had to adapt to the different pattern and update themselves with the change in the clinical placement. A huge gap was felt by new graduates in terms of responsibilities placed on them as they were not given the opportunity whilst they were student nurses.

As participants shared:
"*Every day you come across a new situation and every day is a learning practice. That is the good part of it. Weakness is when you come across something you did not learn in school*" (P8)

"*I think in terms of preparation we learn most of the theory. We learn more theory but less clinical but come to clinical, there is a lot of things we have to learn.*" (P-2)

Birks et al. (2017) report that participants in their study felt that RNs should place greater responsibilities for student nurses to gain confidence in nursing. Similarly, in this study, one participant mentioned:

"*Doing our practical… we don't take responsibilities and patient care very seriously because there is a registered nurse who will take care of anything that we might do wrong, but now all the responsibility lies on us*" (P-1)

Skills

The new graduates felt that they had learnt many procedures and skills during the transition and mentioned that they should be given more time to practice procedures in the clinical laboratory during student training days too.

"*May be increasing more laboratory hours during the school, (the clinical laboratory is where we practice all the procedures), it would be nice to extend the time to practice in the lab.*" (P-3)

Discussion

It is evident from the findings that providing a holistic support to address emotional reactions and reality shock, a comprehensive, and practical orientation to help them cope with organizational factors honing their competencies is a key responsibility of clinical placement.

The experiences of newly qualified nurses during transition were dominated with frustration, fear and various emotional reactions during the eleven months in clinical practice. It is evident that new nurses had faced challenges during their transition from student nurse to graduate nurses. They had mixed feelings which was due to working in the new environment where they had never worked before. This was found to be especially applicable to the Sangam Graduates who had no exposure to the CWM hospital. The findings are consistent with (Harper, 2005; Ndaba, 2013) who noted that new nurses were in a reality shock, stressed and overwhelmed with the responsibilities they were exposed to in the clinical environment. Kirkland (2015) also found that new nurses felt overwhelmed, exhausted, frustrated and scared during the first year of clinical placement. Transition to practice was also a stressful journey for the nurses in Singapore where they had to make changes to their lifestyle to meet the demands of work (Jia, Eugene, Hoon, Holroyd, & Fai, 2013).

Furthermore, Evans, et al. (2008) also reported that new nurses faced bullying, inadequate support and staff roster which resulted in a challenging transition phase.

The new transitioning graduates found the new environment to be scary as some of them had never worked in these areas during student training. This reinforces the need to place the new graduates in all the areas of the hospital such that they have some knowledge of the layout and the type of nursing carried out in certain intensive care units. Similarly, lack of resources and time spent in looking for equipment and materials frustrated new graduates as they felt it affected patient care. Poor supply of resources could affect patient care and new nurses need to be provided with appropriate resources to gain experience and confidence in providing efficient patient care as suggested by Clair (2013).

The attitude of some senior nurses, some patients and their relatives unearthed in this study is consistent with other studies (Maitland, 2012; Ostini & Bonner, 2012). This study echoes the need for support from dedicated senior nurses as an essential strategy for the success of new nurses during transition which should be guided and supported by structured programs to enhance a smooth transition and future career development. This is similar to studies elsewhere (Anderson et al., 2018; Birks et al., 2017; Quinn & Ryan, 2017).

Conclusion

The three years of theoretical learning has provided new graduates knowledge and skills for patient care but they need to hone these further in a clinical environment. It is evident that there is a change in responsibilities when new graduates enter the field of professional nursing which needs to be supported with good guidance, empathy, and wisdom from the senior nurses during their internship.

Findings of this study indicate that a standardized and proper orientation package, support in the form of preceptorship and mentorship was the most important aspects of the experiences during transition. Analysis of the data revealed that new graduates felt stressed and anxious due to improper and inconsistent orientations in certain wards. The study establishes the need for a structured preceptorship or mentorship that will support learning, help new graduates feel like a valued member of the clinical team, provide opportunities for diverse clinical experiences and facilitate the transition of newly graduated nurses smoothly. In addition, this preceptorship should be provided by senior nurses who are willing, experienced and knowledgeable to execute the orientation, independent and are free from other responsibilities; this would enable them to provide consistent support to the new graduates.

Resources should be available readily to support new graduates learning environment. Other essential items such as ward protocols, books, good computer and internet connection will serve as learning tools for new graduates in the wards they work. This will enable new graduates to learn and gain confidence and competence to improve professionally and clinically. Most of the challenges experienced by the new graduates were viewed as an opportunity to learn and get accustomed to the nursing profession. Interestingly, none of the nurses in this study felt that they want to leave the profession or intend to migrate as a result of the lack of support they had experienced during transition, but felt they have learnt through the process of transition to become professional nurses.

Recommendations

Recommendations that arise from this study are as follows: (1) a transition preceptorship program needs to be prepared which will assist newly graduated registered nurses to a smooth transition during their internship year, (2) a proper support system needs to be in place to assist the nurses during transition. If senior nurses are given the responsibility of mentoring, then they should be

given reduced workloads. The problem of staff shortage needs to be considered and strategies put into place to solve the issue of support system, and (3) appropriate resources in terms of human, material and literature must be available to the new graduates.

References

Anderson C., Broadbent M and Moxham L. (2018). Is provision of professional development by RNs to nursing students a choice? *Australian Journal of Advanced Nursing*. *35*(4),34- 41. Retrieved from http://www.ajan.com.au/Vol35/Issue4/4Anderson.pdf

Birks M., Burkot C., Bagley T., and Mills J. (2017) The Impact of clinical placement model on learning in nursing: A descriptive exploratory study. *Australian Journal of Advanced Nursing*. *34*(3), 16-23. Retrieved from http://www.ajan.com.au/Vol34/Issue3/2Birks.pdf

Clair St. M. (2013). *New graduate nurse's experiences of transition during orientation into critical care* [Thesis and Dissertations, University of Wisconsin Milwaukee]. UWM Digital Commons. University of Wisconsin Milwaukee. Paper 378. http://dc.uwm.edu/cgi/viewcontent.cgi?referer=&httpsredir-1&article=1383&context=etd

Dlamini C. P., Mtshali N.G., Dlamini C. H., Mahanya S., Shabangu T., Tsabedze, Z. (2014). New graduates' readiness for practice in Swaziland: An exploration of stakeholders' perspectives. *Journal of Nursing Education and Practice*, *4*(5), 148-158. https://doi.org/10.5430/jnep.v4n5p148

Duchscher, J.B. (2008). Transition shock: the initial stage role of adaptation for newly graduated registered nurses. *Journal of Advanced Nursing*. *65*(5), 1103-1113. http://nursingthefuture.ca/assets/Documents/TransitionShock2009.pdf

Evans J, Boxer E, & Sanber S, (2008). The strength and weakness of transitional support programs for newly registered nurses. *Australian Journal of Advanced Nursing*. 25(4), 16-22.

Harper. J. R. (2005). *The lived experiences of new graduate baccalaureate- prepared registered nurses working in an acute care* Hospital setting. LSU Digital Commons. Louisiana State University. LSU Doctoral Dissertations. Retrieved from https://digitalcommons.lsu.edu/gradschool_dissertations/271

Kirkland, L.D. (2015*). Experiences of newly licensed registered nurses who stay in their first jobs*. [DoctoralDissertation, University of Tennessee. Knoxville]. Retrieved from https://trace.tennessee.edu/utk_graddiss/3589

Maitland, A. (2012). A Study to investigate new- qualified nurses' experiences of preceptor-ship in an acute Hospital in the South- East of England. University of Surrey. Retrieved from https://www.surrey.ac.**uk**/.../Alison%20Maitland%20.

Ndaba, B. J. (2013). Lived experiences of newly qualified professional nurses doing community service in midwifery section in one Gauteng Hospital. University of South Africa. Retrieved from https://core.ac.uk/download/pdf/43174204.pdf

Ostini, F. and Bonner, A. (2012) Australian new graduate experiences during their transition program in a rural/regional acute setting. *Contemporary Nurse: Health Care across the Lifespan*, *41*(2), 242-252. https://doi.org/10.5172/conu.2012.41.2.242

Quinn C., and Ryan J. (2017). A mental health nursing transition program for enrolled nurses at a forensic mental health hospital. *Australian Journal of Advanced Nursing*. 34(1), 14-22. http://www.ajan.com.au/Vol34/Issue1/2Quinn.pdf

Shrestha S. and Joshi S. (2014). Lived experiences of the staff nurses during first six months of their employment in a University Hospital, Kavre: *Journal of Nepal Health Research Council.* 12(28),182-6. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/26032056

Postgraduate students' suggestions on how their experiences could be improved

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Abstract

This study utilized the Nominal Group Technique (NGT) to solicit consensus from seven thesis writing postgraduate students at a university in the Pacific Islands on ways they feel could enhance their experiences at the Faculty they belong. This study found that besides writing and pursuing their thesis, candidates suggest being part of collaborative research projects with academics. Another finding relates to having peer groups formed to provide an avenue for support and mentoring among thesis writing candidates. These have implications for promoting thesis candidates into staff-student and student-student collaborative efforts and ultimately being socialized into a vibrant research culture, within the university, region and beyond.

Introduction

There is a myriad of issues that affect and influence postgraduate students in Pacific Island universities. Hayward (2020), in a study of postgraduate students in literary studies at the University of the South Pacific (USP), stressed the importance of recognizing the Pacific context rather than imposing one's values on supervisees. Another factor Hayward found was that confidence in the use of the English language can be a challenge as many thesis candidates, English is their second, third and even fourth language in the Pacific Islands setting. Raturi, Gibson, Thomas, and Raturi (2020) also stressed that poor quality written English is an issue with many USP thesis students with supervisors spending considerable time editing and proofreading than is necessary. At USP, Raturi et al. (2020) also noted that there are three policy documents that guide supervision and postgraduate studies, namely, Centres and Institute Policy, Quality of Research Policy and Graduate Research Supervision Policy. These are well-written documents but the implementation varies from Faculty to Faculty and from School to School within the university.

In the USP situation, Raturi et al. (2020, p. 89) suggest the notion of "student research clusters" whose membership should be across Faculties and Schools, who meet weekly to discuss, have joint presentations or peer review each other. Wisker, Robinson, Trafford, Warnes, and Creighton (2010) reinforced the notion of "learning conversations" (p. 383) as good practice, between supervisors and students, and students and their peers towards research development and ultimately contributing to candidate completions. Martinsuo and Turkulainen (2010) also advocate the creation of peer groups as they have a role in the progress of postgraduate students both at coursework and thesis writing levels. Peer support supplement the role of supervisors and although both are integral, the personal commitment of candidates is critical to completion. Thesis students have to be clear that "no matter what support the student gets, to progress in research students need to be willing and able to devote significant time" (Martinsuo & Turkulainen, 2010, p. 116).

Furthermore, Darvin and Norton (2018) stressed the need to reframe the supervisor and supervisee identity to allow academic socialization into collaborative publications. Thesis candidates need to be socialized into the academic community and recognize that both the supervisor and supervisee bring in cultural capital that can create a genuine space of authentic collaboration (Darvin & Norton, 2018). Lovitts (2006) asserts that within that collaboration between the supervisor and supervisee, it needs to be realized that there are two stages that postgraduate students go through. The first is the dependent stage, where the thesis candidate is initially more closely supervised and managed. The second is the independent stage, where thesis writers move from learning what others have created to creating knowledge through original research. The candidate becomes more autonomous and can

work more independently (Lovitts, 2006) and this transition is critical to getting to complete one's thesis but also being socialized into the research and publication environment.

It is only recently that there is increased enrolment and completions of thesis writing students at masters and doctoral levels at USP. For example, between 2016 and 2018, there were 37 doctoral completions, which is 47 percent of doctoral completions in USP's 50 years of existence (Weber & Kopf, 2020). USP was established in 1968 and it was only in 1975 that the first doctoral candidate graduated and the first PhD from a USP member country graduated in 1979 followed by another in 1981. The first master's student graduated in 1974 and then another three between 1976 and 1978 and sparsely throughout the first 25 years of USP (Weber & Kopf, 2020). Masters graduates have increased and by 2018, for instance, the number of Master's graduates was about 300. However, 80 percent of master's completions in the last 50 years of USP have been from the Master of Business Administration, a professional programme rather than those involving thesis writing (Weber & Kopf, 2020). With increasing thesis writers in recent years at USP, it is salient that an environment in which candidates are able to complete their thesis and graduate is critical. Moreover, there are also opportunities for increased mentoring, utilization and harnessing of the supervisor-supervisee relationship to bolster the publication productivity of the university. This study, therefore, gathered consensus on what some thesis writing candidates felt is needed to enhance their experiences at USP.

Theoretical Framework

This study is premised on the notion that mentoring is critical to organizational knowledge and knowledge is critical to an organization's sustainable competitive advantage (Bryant, 2005). Bryant (2005) stressed that managing organizational knowledge involves knowledge creation, sharing and exploitation. Knowledge exploitation is interested in converting ideas being generated into new products and services (Bryant, 2005) that are important to increasing the performance of the organization. Among other forms of mentoring, peer mentoring is an important tool to socialize individuals to acquire the attitudes, behavior, and knowledge to contribute to the culture of the organization. The gap that exists in peer mentoring at organizations is that many hope it will happen by itself. It requires training and organization leaders need to take the responsibility to actively facilitate training and motivate mentors. The training should furnish mentors with the knowledge and skills to be effective mentors (Bryant, 2005).

Zuber-Skeritt and Perry (2002) emphasized that thesis writing students both at master and doctoral levels can contribute to the organizational learning of the university "with the aims of solving complex problems and achieving change and improved performance at the individual, team and organizational levels" (p. 172). Zuber-Skeritt and Perry (2002) advocate for the need to ensure the relevance of graduate research to the professional and organizational learning of the university. They also asserted the importance of graduate research to influence practice in order to keep the profession up-to-date, its context and its realities (Zuber-Skeritt & Perry, 2002). Hale (2000) added an important point that within the dynamics of mentoring both the mentor and mentee can learn from each other and gain new knowledge and insights. In order that this occurs, there needs to be good rapport between the mentor and mentee and to recognize that this relationship does not exist in a vacuum but within a context (Hale, 2000).

Methodology

This study incorporates Lloyd's (2011, pp. 110-112) steps to conduct a Nominal Group Technique (NGT), which is a consensus building tool, to generate the opinions of thesis writing students. As depicted in Figure 1, the first step involves the silent generation of ideas in writing, and in this study participants answer the question posed on a piece of paper provided by authors. A brown paper was used so that authors can take results with them when the NGT process is completed. The only question posed was on suggestions they have for the faculty to improve their experience as thesis writers. They were given time to write down as many ideas as they could. Seven thesis candidates of

the School of Education participated in the nominal group technique (NGT) process at a venue on campus. Five of the students were PhD candidates while two were doing Masters. The NGT session took an hour to complete and light refreshment was provided for participants at the end as a way of thanking them for their participation. McMillan, King, and Tully (2016) state that the sample size for a NGT can range from 2 to 7 and there can be multiple groups of similar sizes depending on the group characteristics and the desired information. This study has 7 thesis students from the same university and Faculty.
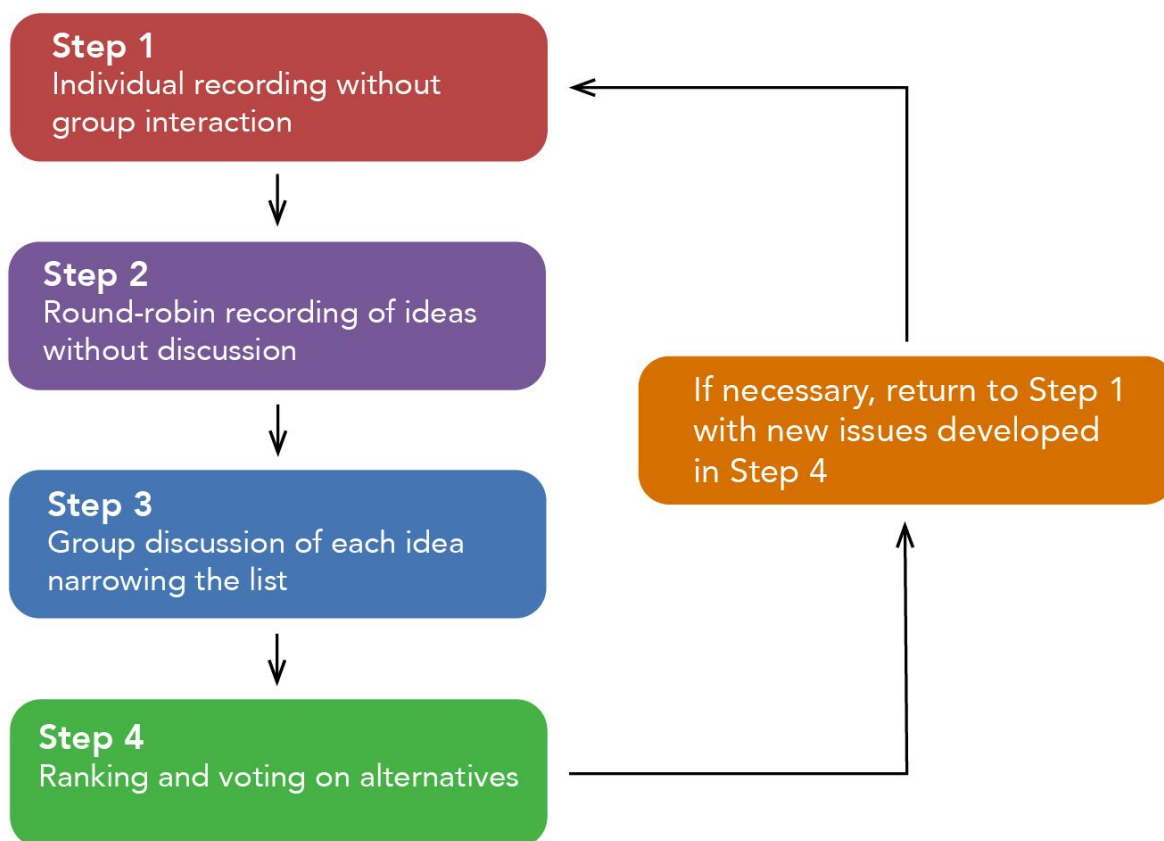
Figure 1: Steps of the nominal group technique (Lumen Learning, 2010).

In the second step, participants reported on their ideas in a round robin format. This meant that an individual reported only one item, from participant to participant, until everyone's ideas were exhausted. The following suggestions were generated and collected from participants in a round robin format:

1. Better supervisory feedback
2. More seminars than is being currently organized
3. Timely approval and dissemination of funded projects
4. Having a peer mentoring program
5. Orientation program for new intakes
6. Peer clusters around common needs
7. Student research retreat
8. A final oral presentation
9. Organize student-generated meetings
10. Following up items mentioned in progress reports
11. Formulate a standard report form for sponsors
12. A system that captures candidates research needs proactively
13. A postgraduate space for informal interactions
14. Include postgraduate students in wider faculty and school research groups

15. Obtain regular feedback from candidates
16. Setting precise timelines
17. Providing thesis editing services for students
18. Clear postgraduate supervision guidelines

The third step involved a discussion of each item above so that participants were clear on what each idea meant. In the fourth step, a preliminary vote took place and participants were then asked to rank the items above what they felt were their top three suggestions. The 3-2-1 method of ranking and prioritization in a NGT (Hall, 2014) was utilized, assigning 3 points for the most important, 2 points for the item each individual regards second in importance and 1 point for the one considered third in their ranking of suggestions for the improvement of postgraduate experience at the faculty. The preliminary round of voting ended with the results presented below:

Table 1

Results of preliminary rounds of voting

Rank	Suggestions	Ranking Marks
1	The inclusion of postgraduate students in the wider faculty and school research groups	16
2	Having a peer mentoring program	7
3	Better supervisory feedback	3
3	Formation of peer clusters around common needs	3
3	Having a system that captures candidates' research needs proactively	3
4	Organise student-initiated meetings	2
5	Timely approval and dissemination of research grants	1
5	Following up items mentioned in progress reports	1
5	Clear postgraduate supervision guidelines	1

The fifth step entailed a conversation on the preliminary vote to help gain focus on the remaining items. A final vote occurred on the sixth step using Hall's (2014) ranking system performed in the preliminary round. By this final vote, four items only were left as shown below:

Table 2

Results of the final vote in the NGT process

Rank	Suggestions	Ranking Mark
1	The inclusion of postgraduate students in the wider faculty and school research groups	15
2	Having a peer mentoring program	11
3	Clear postgraduate supervision guidelines	2
3	Better supervisory feedback	2

In the seventh step, the authors checked with participants that they agree to the final listing. Thus, these were eventually the most prioritized suggestions for the improvement of the postgraduate experience at the faculty. The paper will discuss only the first two ranked suggestions, which are thesis students to be put into collaborative research with the faculty and the idea of peer mentoring. This is so as the first two suggestions received far more votes. The other ranked suggestions relate to supervisor-supervisee guidelines, feedback and relationships, and although not specifically discussed, involve mentoring elements.

Discussions

Staff-student research collaboration

This study found that thesis candidates would like to be in research groups within the faculty and be able to do collaborative research with senior staff. Elmer (2012) supports this notion and reiterates that undertaking a higher degree thesis should not mean a research student should be in their room or the library toiling in isolation. Writing a thesis should be treated as an activity that is intensely social in nature and there should be ample interaction with the lecturers in research collaborations and mentorship. Universities need to see thesis candidates as distinct partners in research to find insights and solutions to a myriad of social, political, cultural, and economic issues the society is facing (Elmer, 2012). Mathews, Dwyer, Hine, and Turner (2018) stressed that viewing students as partners is increasingly a hot topic in higher education, one that is characterized by reciprocity, collaboration, respect, trust and communication. Both staff and students should be positioned as "co-learners" (Mathews et al., 2018, p. 966) and re-conceptualize long held hierarchical boundaries that separate the roles of staff and students at universities. It is important to recognize both parties as mutual learners and this change of mindset has the potential to provide transformative experiences and positively shape individuals involved (Mathews et al., 2018). Most postgraduate students writing thesis are experienced professionals and practitioners and mutual collaboration in research can enable deep and high quality learning experiences for both staff and thesis candidates. This is an often underestimated potential to be bolstered at higher education institutions.

Sankari, Peltokorpi, and Suvi (2018) stressed that academic-student collaborations in research have implications for "co-working spaces" (p. 118) of varying configurations and capacities from small teamwork rooms, group exercise classrooms, common meeting areas to open teamwork areas. Many university faculties do not have sufficient co-working spaces for staff-student collaborations to

occur (Sankari et al., 2018). At the faculty where participants to this study are from, there are two computer laboratories for postgraduate students, even though the lead author had commented on auditing the number of computers against the increasing number of intakes particularly at the School of Education. There used to be a postgraduate seminar room for the faculty but has since then been turned into a different office. There is a lot that can be done to ensure there are co-working spaces for postgraduate students and staff at the faculty and its four Schools and two Institutes. Sankari et al. (2018) added that when co-working spaces are available, both staff and postgraduate students need to know them and the space etiquette. They also recommended that providing a kitchen will allow informal interactions and all these can contribute to building an academic community (Sankari et al., 2018). In the authors' Faculty, postgraduate students had lodged the need for a kitchen at their laboratories to Faculty management, as many of them often leave home and spend the rest of the day and often at night, thus, would require a space for food and coffee that is different from undergraduate laboratories. Thesis writing students had informed the Faculty management about the kitchen a couple of years back but it has not been taken on board. It is important that postgraduate spaces are appealing and enable both formal and spontaneous interactions.

In the USP context, Lingam, Lingam, and Boulton-Lewis (2014) emphasized that staff-student research collaborations would need staff of good quality, who are research active and also having leaders in the faculty that are positive and research active themselves. This leadership is critical as it will help instigate research at all levels including at the postgraduate level.

Peer mentoring

Participants in this study agreed that there should be the use of peer mentoring to help support students who are writing their thesis at the faculty. A suggestion was that the mentor groups are based on common needs and interests. A mentor is a "guide who opens up others to new experiences and the world, and who encourages and protects proteges" (Mullen, 2009, p. 10). In terms of research, the stronger researcher (s) provides expert advice to the less experienced protégé. Mullen (2009) states that at university, research mentoring involves not only advising and supervision, but it is also a form of teaching and learning. Learning is a social process in which acceptance, full participation and transparency should exist, which are also critical elements of mentoring situations themselves. Mentors and mentees should be part of a learning community that is open but also transparent, reflective and critical. Mullen (2009) went on to emphasize that when as many as 50% of American PhD candidates do not complete their candidacy, it is salient that mentors are intentional in their mentoring practices. Proactive mentoring should be seen as an investment towards helping reduce attrition and consequently an increase in completion rates. There have to be more creative solutions at universities rather than business as usual to improve thesis student satisfaction and graduation rates (Mullen, 2009).

In the USP and Pacific context, Lingam, Lingam, and Boulton-Lewis (2014) emphasized the need to encourage educational research at the postgraduate level and socialize them into strong and credible researchers rather than to simply graduate with a qualification. Lingam et al. (2014) also stressed that teachers' colleges and universities, postgraduate students and early career researchers in the Pacific region could be more involved in educational research in order to inform 'local' practices and break the cycle of being over-reliant on evidence adopted from elsewhere. Moreover, Lingam et al. (2014) encouraged not only peer collaboration within USP but also with stronger researchers outside of the university within the region and beyond. Within the region, the formation of the Pacific Islands Universities Research Network (PIURN) should be utilized to provide a venue for intellectual exchange for postgraduate students, early career staff and seasoned academic levels (Lingam et al., 2014). In addition, Lingam et al. (2014) stressed the importance of having mentor-mentee relationships in research in order that developing researchers conduct research and write with a more experienced researcher including winning grants.

In fact, the supervisor-student relationship should be a mentoring association that both parties work towards meaningful inquiry to allow the thesis candidate to become an independent problem solver (Mullen, 2009). Mullen (2009) emphasized that thesis candidates need to be regarded as imperative intellectual and scholarly resources, mentored to write and publish rather than simply graduating them. Dorovolomo, Lingam, and Kumar (2020), in the context of a Pacific Islands University, also stressed that thesis students should be socialized into publishing and participating in the scholarly events of the academic department and university. While Dorovolomo et al. (2020) were in charge of research and postgraduate studies at an academic department, they ensured there are avenues for students and staff members to be socialized into the research culture. There is a seminar series and emanating from this is an edited book series. An existing journal was brought in to be housed at the department, regular research symposiums were held and from which formal proceedings were published. Building a research culture does not happen by itself but through deliberate structures that allow it to occur. Various graduate students have published in the journal, proceedings and edited book (Dorovolomo et al., 2020). The idea is that thesis writers are socialized into a situation they are intrinsically motivated to publish and keen on producing scholarly work rather than being pressured to through the process (Stoilescu & McDougall, 2010).

Publishing in a peer reviewed journal and outlet is a significant achievement for postgraduate students and should be encouraged as it will be important if a candidate applies for an academic position at universities (Stoilescu & McDougall, 2010). Moreover, Stoilescu and McDougall (2010) stressed that candidates who publish during their candidacy are more likely to continue publishing when they graduate. Mentoring is crucial in the dissertation journey from the supervisor, established scholars, and peers. Stoilescu and McDougall (2010) underlined that peer-to-peer mentoring and writing groups are a critical component in the journey of the thesis writer, provide the impetus for success in completion rates and support for publication. Stoilescu and McDougall (2010), however, indicated that not many such groupings are effective networks that support postgraduate students in their writing processes. Dorovolomo et al. (2020), in the Fiji context, found that thesis writing students would like graduate communities formed in order that they receive peer critique and support from critical friends and this may be particularly important for second language users. While Dorovolomo et al. (2020) have been successful in operating a journal, organizing regular symposiums and seminars, and pursuing an edited book series, the formation of staff and student writing communities had not been successful. The reasons for unsuccessful graduate communities in the Fiji context need to be investigated.

Veitayaki and Manoa (2014) emphasized that capacity building in higher education in the Pacific Islands should not only be based on institutional priorities but also on the wider needs of island countries. This capacity building should not be superficial and needs to involve both staff and students of universities and be able to partner with local as well as international research institutions and entities. Moreover, Veitayaki and Manoa (2014) added that staff and students of USP need to be engaged in research collaboratively and that the institution should provide incentives to stimulate such collaboration. Too often, student contribution to extending frontiers in Pacific research is neglected and can be encouraged more than it is at the moment (Veitayaki & Manoa, 2014).

Sutrisno and Pillay (2014) noted that with the establishment of other universities in the Pacific Islands at Samoa, Fiji, and the Solomon Islands, USP has increasing competition. Besides regional competition, USP needs to navigate the power dynamics that exist with Australian and New Zealand universities with their legacy of colonialism and knowledge imperialism in the Pacific Islands (Sutrisno & Pillay, 2020). Sutrisno and Pillay (2014) added that Australia and New Zealand may often undervalue knowledge that emanates from Pacific Islands universities. Thus, it is important for Pacific Island universities to be vigilant and negotiate a positive position in their ties with Australian, New Zealand and western universities (Sutrisno & Pillay, 2020). A major shift in practice at USP was the establishment of the Research Office (RO) in 2007 which vigorously pursued the quantity and

quality of USP research outputs that are responsive to the needs of its stakeholders (Armstrong, 2017).

At USP, Vanualailai (2016) stressed that since the introduction of the policy on research outputs and awards, the quantity of outputs have increased considerably. For instance, in 2016, the number of papers that were awarded went over 200, besides outputs that were not necessarily awarded. When this is compared to say in 1970 when only 3 publications were on record, it is a major shift in policy and outputs (Vanualailai, 2016). Tamani (2017) added that the establishment of the USP digital research repository in 2012, has provided a mechanism to measure institutional research productivity, identify research active staff, and locate weaknesses in the university's research (Tamani, 2017). By 2017, there were about 5900 scholarly outputs that were in the USP research repository (Nainoca-Waqairagata, 2017). Nainoca-Waqairagata (2017) stressed that the USP research repository is used for staff review and appraisals, gauging the quality of staff research output, identifying staff and students that need to be awarded, and also the basis for which faculties are allocated research funds. USP rankings are based on the Excellence in Research Australia (ERA) evaluation framework, the ABCD rankings, and SENSE list of publishers (Nainoca-Waqairagata, 2017). Young, Peetz, and Marais (2011), however, expressed concern about the "fetishism with journal rankings, exemplified in the ERA journal rankings process, will have adverse impacts on Australian research in this field of social inquiry. There appear to be strong consequences in terms of funds allocation, evaluation and promotion as well as for recruitment" (p. 86). Young et al. (2011), who studied staff in employment relations, found that participants are apprehensive about the task of achieving A* and A-ranked journals and outputs when many of the highly ranked journals on the ERA are American-based and more often quantitative in nature and that there are fewer employment relations journals on the top rankings. Furthermore, Young et al. (2011) stressed that these research output rankings are also "reinforcing the hegemony of knowledge from the West or, in particular, the USA" (p. 86).

Young et al. (2011) also emphasized that these Western journals may not fully be interested in submissions from other countries. The other caveat is it also puts a threat to journals that are valuable and reputable but are not ranked highly. Martin-Sardesai, Irvine, Tooley, and Guthrie (2017), who evaluated the research performance management systems of the UK and Australia over 1985-2010, concluded that in Australia, research assessments have increasingly stifled academic freedom which is crucial to research. The ERA, for instance, was initially established to provide metrics for the allocation of resources within universities but has now been used to gauge individual academic performances as well and can negatively affect scholarship and academic freedom (Martin-Sardesai et al., 2017). Martin-Sardesai et al. (2017) stated that there is increasing commodification of knowledge as universities wanted to be able to sell their expertise to governments, the private sector and various other entities, thus, comes the higher surveillance put on academic's research outputs. Commodification here means that staff performances are measured and evaluated through their teaching, research, community engagement, and income generation in calculable and marketable terms (Martin-Sardesai et al., 2017).

In global university rankings, the over reliance on the English language and literature are disadvantageous to many universities and favours others, particularly research-intensive American and British universities such as Harvard, Stanford, Yale, MIT, Berkeley, Cambridge and Oxford (Marginson & Wende, 2007). The *Times Higher Education Supplement* provides influential world university rankings which stimulate global competition for top researchers and strong younger academics. Marginson and Wende (2007) also pointed that these rankings and league tables have influenced institutional and policy behavior in higher education as universities aspire to achieve higher rankings and prestige. The fact, however, with these rankings is that 54 of the top research universities in the world are from the United States, the UK with 11, 4 are based in Canada, while 2 are Australian universities, making 71% of the top 100 research universities to be from English-speaking countries (Marginson & Wende, 2007). Furthermore, Marginson and Wende (2007)

explained that the developed world makes up 15% of the global population but is responsible for more than 90% of patents.

Wijeshinghe, Muro, and Bouchon (2019) studied tourism publications between 2007 and 2017 and concluded that tourism research publication is dominated predominantly by scholars from English-speaking UK, USA, Australia, and New Zealand besides other European countries, demonstrating the hegemonic control of knowledge production from these countries. Moreover, Wijeshinghe et al. (2019) noted that most of the editors of high impact journals are from Anglo-American origins. This is in addition to more than 80% of tourism journals are based in the English-speaking countries of the UK, US, Canada and Australia, with neo-colonial control and academic gatekeeping (Wijeshinghe et al., 2019). This hegemonic academic gatekeeping, Wijeshinghe et al. (2019) argued, may also be a contributing factor to the continuous lag in non-Western publication productivity in international tourism knowledge. In Asia, there is growing productivity in publication from countries such as South Korea, Hong Kong and Singapore, which challenged the traditional colonial lines from mostly the UK and the USA. Wijeshinghe et al. (2019) emphasized the salience of decolonizing knowledge production and the deconstruction of hegemonies in order to encompass non-Western, indigenous, and diverse viewpoints

Murphy and Zhu (2012), who studied the 2010 and 2011 authors and editors to highly ranked management journals, found that publications in business and management journals are being dominated by Anglo-American academics. Furthermore, Murphy and Zhu (2012) stressed that this is ongoing neo-colonial domination of intellectual production which systematically excludes non-Western scholars and scholarship. Such domination may also be a reflection of domination of the world economy and society. English being the dominant academic language is also a form of neo-colonial domination (Murphy & Zhu, 2012). In addition, with globalization and the world becoming flatter, and with Western capitalism, the West continues to dominate the global economy. For instance, of the 50 largest multi-national companies, 46 of them are based in North America, Europe and Japan, who often use cheap labour offshore in developing countries for their production (Murphy & Zhu, 2012). Murphy and Zhu (2012) also pointed that the journal rankings also depict a form of neo-colonialism by marginalizing non-Western scholarship and often academics want to publish in ranked journals based elsewhere rather than local journals.

Janif (2017) reported that in 2017 the Research Office sponsored 72 research students which is about 20% of research students at USP who are doing research degrees at Masters and PhD levels. The RO also coordinates the policies, procedures and guidelines that relate to postgraduate studies at USP in its bid to promote successful completions and this can only be possible through adequate support (Janif, 2017). In addition, USP inventions that received patent certifications are major breakthroughs in USP research such as the footsteps waste energy harvesting system, the Emi sensor for non-destructive corrosion estimation in concrete system, and the braille eye-slate (Nainoca-Waqairagata, 2019).

Janif (2019) emphasized the importance of the establishment of the Pacific Islands Universities Research Network (PIURN), which comprises of universities in the region from Tahiti, New Caledonia, Papua New Guinea, Samoa, Solomon Islands and Fiji, as a "strategic instrument, promoting the agreed perspectives of collaborating universities when it comes to the identification of research priorities for the Pacific, and to be a pro-active operational entity offering new educational and personal development opportunities to teachers and researchers" (p. 3). The PIURN is an important strategic instrument to promote collaborative research among Pacific Island universities and scholars on matters that concern the Pacific Islands, from climate change, ICT, urbanization, to the economy (Janif, 2019).

Conclusion

It is not enough to simply graduate thesis students doing Masters and doctorates. There needs to be diligence to collaborate with thesis writers in research projects, allow them to thrive in a peer-centred environment so that they are not isolated, and that there is mutual respect and reciprocity between supervisors and candidates. This paper has implications for viewing supervisors and thesis candidates as co-learners who can both benefit from the collaboration. Moreover, that the products of such collaboration should be proudly showcased and Kimel (2018) shared what they do at the Department of Materials Science and Engineering of Penn State University in the US, where they treat thesis students' outputs as the capstone and have thesis candidates and their supervisors produce posters for a department showcase that is judged by independent industry partners (Kimel, 2018). This is a superb innovation as it celebrates the achievements of postgraduate students and links industry into activities of the Department and university. As many avenues for mentoring practices should be encouraged in higher education through peers, supervisors and existing research groups. Importantly, mentoring practices need to receive sufficient institutional and systemic support in order that quality learning and experiences occur.

References

Armstrong, D. (2017). DVC's note. *USP Research, 1*(1), 1.

Bryant, S. E. (2005). The impact of peer mentoring on organizational knowledge creation and sharing. *Group and Organization Management, 30*(3), 319-338.

Darvin, R. & Norton, B. (2018). Collaborative writing, academic socialization, and the negotiation of identity. In P. Habibie & K. Hyland (Eds.), *Novice writers and scholarly publication* (pp. 177-194). Cham: Palgrave Macmillan.

Dorovolomo, J., Lingam, I. G. & Kumar, A. A. (2020). Graduate students' areas of perceived strengths and weaknesses in thesis writing. In E. Blair, D. Watson and S. Raturi (Eds.), *Graduate research supervision in the developing world* (123-135). Oxon, UK: Routledge.

Elmer, G. (2012). Collaboration-led research. *Canadian Journal of Communication, 37*(1), 189-192.

Hale, R. (2000). To match or mis-match? The dynamics of mentoring as a route to personal and organizational learning. *Career Development International, 5*(5), 223-234.

Hall, H. (2014). *How to perform the nominal group technique.* Retrieved November 17, 2015, from http://www.pmsouth.com/2014/05/08/how-to-perform-the-nominal-group-technique/

Hayward, M. (2020). Supervising graduate theses in literary studies at the University of the South Pacific. In E. Blair, D. Watson and S. Raturi (Eds.), *Graduate research supervision in the developing world* (52-63). Oxon, UK: Routledge.

Janif, S. (2017). Postgraduate research at USP. *USP Research, 1*(1), 5.

Janif, S. (2019). Promoting Pacific researchers: PIURN. *USP Research, 2*(3), 3.

Kimel, R. A. (2018). Incorporating design into the senior thesis capstone at Penn State University. *JOM, 70*(8), 1372-1373.

Lingam, G. I., Lingam, N. & Boulton-Lewis, G. (2014). Developing 'insider' researchers: The way forward for educational development in the Pacific region. In M. R. Dakuidreketi & G. I. Lingam (Eds.), *Higher Education and Community Engagement in the Pacific: Development and Policy Issues* (pp. 1-26). Suva: University of the South Pacific Press.

Lloyd, S. (2011). Applying the nominal group technique to specify the domain of a construct. *Qualitative Market Research: An International Journal, 14*(1), 106-121.

Lovitts, B. E. (2006). Being a good course-taker is not enough: a theoretical perspective on the transition to independent research. *Studies in Higher Education, 30*(2), 137-154.

Lumen Learning (2010). Organizational behavior and human relations. Retrieved from https://courses.lumenlearning.com/wm-organizationalbehavior/chapter/group-decision-making/

Marginson, S. & Wende, M. V. D. (2007). To rank or to be ranked: The impact of global rankings in higher education. *Journal of Studies in International Education, 11*(4), 306-329.

Martin-Sardesai, A., Irvine, H., Tooley, S. & Guthrie, J. (2017). Government research evaluations and academic freedom: a UK and Australian comparison, *Higher Education Research and Development, 36*(2), 372-385.

Martinsuo, M. & Turkulainen, V. (2010). Personal commitment, support and progress in doctoral studies. *Studies in Higher Education, 36*(1), 103-120.

Mathews, K. E., Dwyer, A., Hine, L. & Turner, J. (2018). Conceptions of students as partners. *Higher Education, 76*(6), 957-971.

McMillan, S. S., King, M. & Tully, M. P. (2016). How to use the nominal group and Delphi techniques. *International Journal of Clinical Pharmacy, 38*(3), 655-662.

Mullen, C. A. (2009). Re-imagining the human dimension of mentoring: A framework for research administration and the academy. *Journal of Research Administration, 40*(1), 10-31.

Murphy, J. and Zhu, J. (2012). Neo-colonialism in the academy? Anglo-American domination in management journals. *Organization, 19*(6), 915-927.

Nainoca-Waqairagata, F. (2019). 2017 research excellence and innovation awards evening. *USP Research, 2*(1), 11-12.

Nainoca-Waqairagata, F. (2017). USPERR: Sharing regional research through the World Wide Web. *USP Research, 1*(1), 4.

Raturi, S., Gibson, D., Thomas, F. & Raturi, A. (2020). Navigating research trajectories with supervisees in the Pacific Islands. In E. Blair, D. Watson and S. Raturi (Eds.), *Graduate research supervision in the developing world* (77-91). Oxon, UK: Routledge.

Sankari, I., Peltokorpi, A. & Suvi, N. (2018). A call for co-working – users' expectations regarding learning spaces in higher education. *Journal of Corporate Real Estate, 20*(2) 117-137.

Stoilescu, D. & McDougall, D. (2010). Starting to publish academic research as a doctoral student. *International Journal of Doctoral Studies, 5*(7)*,* 79-92.

Sutrisno, A. & Pillay, H. (2014). Knowledge transfer in transnational programmes: Opportunities and challenges for the Pacific region. . In M. R. Dakuidreketi & G. I. Lingam (Eds.), *Higher Education and Community Engagement in the Pacific: Development and Policy Issues* (pp. 1-26). Suva: University of the South Pacific Press.

Tamani, A. (2017). USP research publications at all-time high. *USP Research, 1*(2), 9.

Vanualailai, J. (2016). Director's note. *USP Research, 1*(1), 2-3.

Veitayaki, J. & Manoa, P. E. (2014). Building capacity in the marine sector in the Pacific Islands and the role of the University of the South Pacific. In M. R. Dakuidreketi & G. I. Lingam (Eds.), *Higher Education and Community Engagement in the Pacific: Development and Policy Issues* (pp. 1-26). Suva: University of the South Pacific Press.

Weber, E. & Kopf, A. (2020). Structural dimensions of doctoral supervision in regional universities: The case of the University of the South Pacific. In E. Blair, D. Watson and S. Raturi (Eds.), *Graduate research supervision in the developing world* (169-180). Oxon, UK: Routledge.

Wijesinghe, S. N. R., Mura, P. & Bouchan, F. (2019). Tourism knowledge and neocolonialism – a systematic critical review of the literature. *Current Issues in Tourism, 22*(11), 1263-1279.

Wisker, G., Robinson, G., Trafford, V., Warnes, M. & Creighton, E. (2010). From supervisory dialogues to successful PhDs: Strategies supporting and enabling the learning conversations of staff and students at postgraduate level. *Teaching in Higher Education, 8*(3), 383-397.

Young, S., Peetz, D. & Marais, M. (2011). The impact of journal ranking fetishism on Australian policy-related research: A cases study. *Australian Universities' Review, 53*(2), 77-87.

Zuber-Skeritt, O. & Perry, C. (2002). Action research within organizations and university thesis writing. *The Learning Organization, 9*(4), 171-179.

Reconstructing Social Capital in Fijian Classrooms: Lessons learnt from *Solesolevaki*

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Abstract

Schools play an important role in the social, cultural and psychological adjustment of a child. It is an environment where a significant part of the development of young children takes place as it is an undeniable fact that a child spends most of his/her waking time at school (Van Rossem et al., 2015). A classroom in a school is an opportune social space where social capital can thrive. This study was conducted in 2019 on how an iTaukei intangible cultural heritage, named *Solesolevaki*, can contribute to the inclusive social development and social capital among children. The classroom represents a suitable space where solesolevaki can be practiced and develop social capital in the process. This article first reviews the existing literature on social capital; second, it outlines the methods that were conducted in order to ascertain the aspects of solesolevaki that are applicable to a classroom; thirdly, it discusses the core findings specifically on values of engagement, trust, cooperation, collective norms, knowledge diffusion, shared futures, social inclusion, and social cohesion. The article closes with a discussion on the implications of the findings in building social capital in Fijian classrooms.

Introduction

Social capital is well interrogated by different writers and scholars over the years, most notably with interpretations surrounding the debate of social sustainability. Two prominent theorists that have contributed immensely in the discussions of social capital are Robert Putnam and Pierre Bourdieu. Bourdieu (1986) defined social capital as "the aggregate of the actual or potential resources which are linked to potential of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition- or in other words, membership in a group" (p. 247). Bourdieu further highlights that social networks connect people to other valuable resources or potentially valuable resources within that social network. Similar to Bourdieu, Putnam (1995) also argued that social capital is the value one gets from being involved in a social network, thus the view that social networks have value. Putnam then further described social capital as "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (p. 66). Therefore, accounting for both Bourdieu and Putnam's approaches, it becomes clear that social capital is the value an individual acquires through social networks. It can also be described as a collective outcome, judging from the two theorists' approach. This definition equally applies to Putnam's civic engagement and to Shortall's (2008) social inclusion. Putnam also presents four ways that one would gain value through social networks and these are information that one might not get otherwise individually (or knowledge diffusion), reciprocity, collective action in which it has more impact than any individual action, and identity and sense of solidarity (or sense of empowerment).

However, one of the major differences in Putnam and Bourdieu's interpretation of social capital is in relation to power. Bourdieu (1986) argued that power is maintained through the exclusivity of relationships within that social network. In light of this difference, Bourdieu seems to position economic capital as the root of social capital, or in other words, it is economic capital that drives the existence of social capital. Putnam, on the other hand, in his study of Northern and Southern Italy emphasized that a high level of social capital leads to faster economic development (Putnam et al., 1994). This is one of the areas that this research attempts to disprove, in that social capital has long existed before economic capital in this modern era, at least from a sociocultural viewpoint where intangible cultural heritage practices have had social capital as its drivers and outcomes, and that social capital can be an end to itself.

Social capital in most communities have always been part of their heritage. Memmott and Meltzer (2005) conducted an interesting study that indicates the concept of social capital is not new in indigenous communities. In working with an Aboriginal Community of Wadeye, Memmott and Meltzer conducted open-ended small-group workshops and formal interviews with key informants on how social capital function in Wadeye. That study highlighted kinship as the social glue of the community that generates a network of relationships which generates social strength. Social strength, according to Memmott and Meltzer, is built through trust and reciprocity in Wadeye, and these are crucial in constructing social capital. Their study also demonstrated norms that are key to building social strength in the community of Wadeye, and these are "respect, kindness and concern, motherly love, tough love, personal and community sharing, and belief in self-capacity" (p. 114). These norms are embedded in the social structural system of Wadeye, thus pointing out the fact that social capital already existed in indigenous communities. The authors also emphasize how Wadeye has inherited these traditional networks that build social strength into the more formal networks or "whitefella style" (p. 116). Their study is relatable as it looks at how social capital functions in an indigenous community. However, the study of Wadeye is based on a community that was established in the 1900s as a Catholic mission and although the majority of the inhabitants are Aborigines, they are from different social and cultural backgrounds. It is therefore distinct in that the participants would have represented a range of indigenous groups which have many tribes and clans as well as different cultural and social structures, and even languages. Additionally, the study conducted in Wadeye lasted only for three days. Considering the study was carried out in an indigenous setting, the methodology used is also questionable as it is unclear whether the approaches used recognized the pre-existed social structures and protocols or not. Thus, with these in mind, this study on *solesolevaki* focuses on Fijian indigenous communities which existed on their own will, not a Colonial setup, and utilizes an indigenous research approach that acknowledges and respects the social structure and protocols of the iTaukei.

Methods

This study involved the Talanoa in the Vanua Framework (VF and open-ended questionnaires.

Talanoa

Talanoa was conducted in two iTaukei villages and with the Institute of Language and Culture field officers. In facilitating the talanoa, there were guiding topics provided so that conversations do not deviate from the primary purpose of this research study. Talanoa was conducted with the following focus group:

  i.   Village youth group (Male and Female: Age group – 18 to 30),
 ii.   Village Women's Club (Age group 35+),
iii.   Men (Age group – 40+),
iv.   iTaukei Institute of Language and Culture field officers.

Talanoa is part of the VF where knowledge sharing in the form of talanoa requires a strict adherence of the iTaukei values and protocols (Nabobo-Baba, 2006; Otsuka, 2005). Talanoa is a way of exchanging ideas or thinking, a conversation, a talk, always carried out face to face. Talanoa is a culturally appropriate method of data collection when conducting research in iTaukei villages, and with iTaukei participants when the topic of conversation is in reference to iTaukei knowledge and wisdom (Otsuka, 2005). Before each talanoa session, prior consent was sought from locals and participant for the use of recording devices during the talanoa sessions.

The articles by Farrely and Nabobo-Baba (2012) and Vaioleti (2006) emphasize talanoa as a research method for Pacific people. Talanoa, from iTaukei view, is to speak freely, converse without boundaries, and the topic of discussion would vary. Talanoa, as a research method, is a culturally-appropriate Pasifika research methodology. For indigenous Fijians, iTaukei conducting research in a village setting by means of talanoa, there are other things that should be taken into consideration if talanoa is to be successful in terms of gathering data. Although valid information can be gathered

from formal or informal talanoa, for participants to partake deeply in conversation, to fully 'offload' information, then the whole process of the VF needs to be carefully carried out following all the guidelines of the vanua. Otsuka (2005) also highlights that prior to conducting talanoa, the researcher must establish a culturally-appropriate interpersonal relationship with participants. This can only be achieved by following the VR process.

The VF, as articulated by Unaisi Nabobo-Baba (2006) in *Knowing and Learning: An Indigenous Fijian Approach*, is must-know traditional practice for any iTaukei and this is also the best way of gathering data while conducting research. Below is a sequence that illustrates the VF, and talanoa is part of this research methodology:

1.   Navunavuci (conception)

2.   Vakavakarau (Preparation and planning)

3.   iCurucuru and Sevusevu (entry)

4.   Talanoa (Story telling/data collection)

5.   Reporting/Analysis

6.   Gifting/Thank you

7.   iTatau (departure)

8.   Reporting Back

The VF has proved to be an effective method for the iTaukei researcher as well as the community in question in gathering quality data. Especially if one is considering conducting research regarding the iTaukei traditional knowledge and expression of culture, the vanua approach should be recommended. The iTaukei regard their traditional knowledge and culture as treasures, and they would not give them freely and fully, unless proper protocols are followed, and uphold other traditional values and behaviour that is expected in a village setting.

Prior to entering the village, presentation of sevusevu, physical appearance in terms of dressing code is important. The researcher would not want to create a boundary between locals in terms of dressing too formal that demands respect from local. For instance, if a researcher were to conduct research in a village wearing a corporate uniform, this would instantly demand respect from locals since the attire represents the government. This will affect the talanoa session as that barrier has already been created just by the attire, and data gathered from talanoa would not be in depth, no matter how formal or informal it is. In addition, where the researcher positions himself/herself in the village hall will also determine that barrier that will affect the talanoa, how and when to speak, his/her knowledge of the protocols (sevusevu) has to be clear and concise. All these accounts to the quality of the data gathered during the talanoa session. Thus, for talanoa to be effective in terms of quality data, there are many important things to consider which are all part of the Vanua Approach research methodology.

Open-ended questionnaires

Open-ended questionnaires were distributed to iTaukei participants in two cultural institutions, the iTaukei Institute of Language and Culture (TILC) and The Fiji Arts Council (FAC). There were fifteen questionnaires for each institution, and these open-ended questions were in iTaukei version, which were then translated by the researcher along with the responses post data collection. Open-ended questionnaires allowed participants to reflect their personal views on the purpose of the research study as these personal views maybe suppressed during talanoa sessions. Adopting open-ended questionnaires enabled the researcher to triangulate the data gathered from talanoa sessions and questionnaires which will enhance the confidence in ensuing findings.

Therefore, carrying out talanoa sessions and issuing open-ended questionnaires ensured methodological triangulation of this research study. Methodological triangulation refers to the use of more than one method from different approaches to investigate the research questions of a research (Williamson, 2013). This will increase the ability to interpret findings and avoid potential errors and biases (ibid). If findings from each method agree with each other, then the validity of this research is achieved. Guion et al (2011) highlight that when "conclusions from each method are the same, then validity is established" (p. 2). In terms of reliability of this research study, the adoption of the indigenous methodological framework, the VF, contributed towards the reliability of the findings gathered. Following all the right sequences of iTaukei protocols to gather data, and that all research approach and techniques are ethically acceptable in the eyes of the iTaukei community, ensured the reliability of this study. Adopting the VF allowed the researcher to pay attention to ethics and reflexivity when accessing indigenous knowledge (Snow et al., 2015).

Findings

A sustainable community or a sustainable way of life is not a new concept in the iTaukei ways of knowing, living and being. The iTaukei people have always understood that there needs to be a balance in everything they do, as through balance there is 'sautu' (Nabobo-Baba, 2005). Testimonies from participants indicated that aspiration for sautu was the key causal mechanism that drives solesolevaki in iTaukei communities. This then ultimately led to their sustainable way of life. Solesolevaki was at the centre of this sustainable living, most notably in their social development. This was evident in this study as articulated by one of the participants:

> Na solesolevaki edua na ivakarau ni cakacakavata se na kena qaravi edua na itavi vakalewelevu, vakaisoqosoqo, vakoro se vakavanua. E tu na iwalewale ni kena qaravi na solesolevaki ia e kena inaki levu ga me dau kauti ira vata mai na lewelevu mera mai duavata ka ligavata ena kena qaravi e dua na cakacaka. E sala talega ni kena valuti na dui yaloyalo, dravudravua, veiqati kei na dravuisiga ena noda itikotiko vakoro se vakavanua. E levu sara na ka edau solevaki mv na teitei, taravale kei na oga kece ni vuvale, lotu, vuli kei na vanua [Solesolevaki is a social practice that involves a group of people working together to achieve a common goal. It is a practice that allows everyone in a community to come together, cooperate and work towards improving and sustaining their livelihood. Solesolevaki can involve farming, housing constructions, and meeting religious, school and community obligations] (K. Ravonokula, personal communication, May 17, 2019).

The mobilization of people in an iTaukei community due to solesolevaki has accounted for social sustainability for iTaukei in the past. In this study, it is argued that inclusive social development was consistent in each iTaukei communities in the past, as there was an abundance of capital, especially social capital from solesolevaki. Social capital is the key link to mobilizing inclusive social development (Dale, 2005). Without social capital, there cannot be any inclusive social development as the formation and maintenance of networks dictate sustainable communities (ibid). In the past, this was not an issue in iTaukei communities as there were an abundance of social capital through solesolevaki, and their shared networks and relationships were always maintained and empowered this way (Mavono & Becken, 2018). Local iTaukei, regardless of gender, age and religion, have always been engaged in solesolevaki activities and there have always been trust and cooperation between each individual (ibid). Other key elements that build social capital as according to Dale and Onyx (2005) are also apparent in the practice of solesolevaki. These are collective norms, knowledge diffusion and a sense of shared futures. It is as if solesolevaki is social capital in the iTaukei context.

Social capital accumulated from solesolevaki enabled the iTaukei to construct networks that allowed community engagement, trust, cooperation, collective norms, knowledge diffusion, and shared futures. Solesolevaki was at the heart of community engagement and the willingness for participation in solesolevaki practices soared (Mavono & Becken, 2018). This empowers the

individual to always engage with others in everything they do in their life. To always think of the *veiwekani*[1] at first rather than individualism. Empowering individuals is not an easy feat, especially when it comes to sustainability approaches as individual needs are overshadowed by the needs of the community. However, findings from this study have indicated that iTaukei communities in the past have always emphasized more on the 'communal' rather than the 'individual'. Empowering individual for community engagement was not an issue for iTaukei communities in the past. In fact, there was no need to empower the individual as through solesolevaki and understanding its causal mechanism, voluntarily engagement was always part of iTaukei daily lives in the past.

Social cohesion was also an important attribute of solesolevaki as discovered from the study. Social cohesion "involves building shared values and communities of interpretation, reducing disparities in wealth and income, and generally enabling people to have a sense that they are engaged in a common enterprise, facing shared challenges, and that they are members of the same community" (Maxwell, 1996, as cited in Fonseca et al., 2019, p. 235). Leadbeater (1999) further highlighted that for social cohesion to be present and successful, trust is crucial. The causal mechanism of solesolevaki allows individuals to trust in themselves, trust in each other, and trust that everything they engage themselves with will yield to *sautu*[2]. This was highlighted by one of the participants during a talanoa session:

> *E dodonu me vakabulabulataki na solesolevaki veikeda na iTaukei ena noda veikoro me rawa ni sautu tikoga na vuvale, vuli, lotu kei na vanua. Qo na iwali levu ga ni dravudravua, vakaloloma kei na veidredre tale e sotavi tu nikua. Ni tiko na cakacakavata ena kune na veilomani kei na sautu* [Solesolevaki should be revitalized in all iTaukei villages so that there can be *sautu* in families, school, religion and vanua. Solesolevaki is the solution to poverty and many other social issues we face today. When we work together through solesolevaki, there will be social cohesion and *sautu* amongst members of the community] (S. Rabulu, personal communication, July 5, 2019).

The aspiration for sautu has enabled trust to be part and parcel of iTaukei lives. While this might be questionable at present, however, in the past, a trustworthy relationship in a trustworthy network was crucial to their physical, social, cultural and spiritual wellbeing. Therefore, in the past solesolevaki yielded trust which was crucial for social cohesion.

Another attribute of solesolevaki that was discovered from this study was cooperation. Similar to social inclusion, cooperation was and always is at the center of solesolevaki. Without cooperation to achieve a common goal, there would be no social capital (Dobell, 1995). The social networks empowered by their kinship system enable iTaukei people to cooperate with one another in achieving a common goal. This is the very underlying focus of solesolevaki - people trusting one another and cooperating with each other to achieve a common goal. Through cooperation, iTaukei people were able to have a sense of purpose and connection. Not only with each other but also with their natural and spiritual environment.

Lessons learnt and their implications to social capital in a classroom

It was apparent from the findings that there are a number of lessons one would gather from solesolevaki. These are:

i.   abundance of social capital through shared networks and connections,
ii.   engagement, trust, collective norms, knowledge diffusion, and shared futures,

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[1] Social relationships
[2] A state of wellbeing where there is peace & prosperity between humans, with each other and their natural environment.

iii.   social cohesion,
iv.   cooperation.

In the context of a classroom, so much can be learnt through solesolevaki in accumulating child-level social capital and classroom social capital.

In this study, it was evident that by increasing social capital through working together (solesolevaki - which can be through group activities whether in the classroom or within the school premises), students are being introduced to new networks and connections. Once these networking are established, students can be able to exchange ideas freely, and even simple items such as stationary. In establishing these networks among students, the act of using school (and even individual) resources jointly pave ways to building trust and cooperation. In a study by Arriaza and Rocha (2016) on growing social capital in the classroom, it was discovered that by collectivizing resources, there were trust and reciprocity among students. This promoted an egalitarian learning environment where individually possessed items were shared to the group. This view aligns to the concept of solesolevaki.
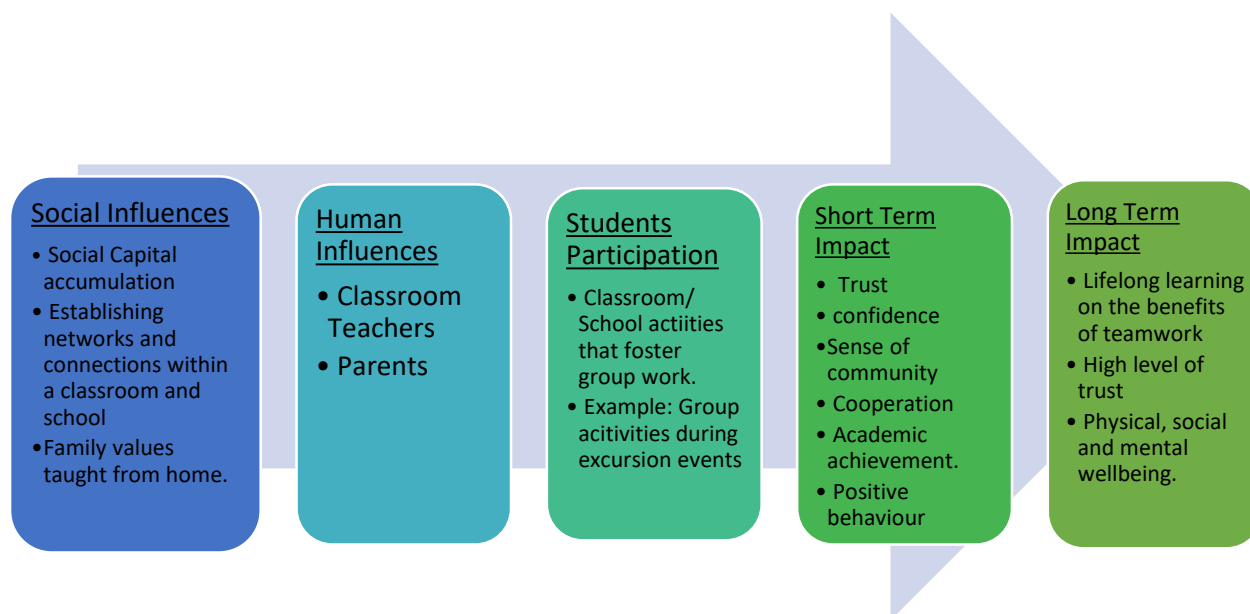
It was also evident in solesolevaki that accessing shared networks and connections, an individual can build trust and have confidence in the group. The social values embedded in solesolevaki through trust will allow students in a classroom to willingly work together and accomplish shared goals. The ability for students to have high levels of trust goes a long way. Goddard (2003) argued that students who attend schools with high levels of trust are better off than those who attend schools with low levels of trust. Therefore, in building social capital through shared networks and connections in a classroom, students will more likely excel academically.

The findings of the study also demonstrated that by working together, through solesolevaki, there is social cohesion. As an attribute of solesolevaki, social cohesion can be listed as a desired outcome for any educational institution. Accomplishing social cohesion in a classroom can be a difficult feat. However, as indicated from the findings of the study, solesolevaki allows social cohesion to prosper. It is through social capital accumulated from solesolevaki that students of that network can have trust, confidence and community in each other. This would create a learning environment of sharing which is crucial in building new networks not only within the classroom, but also across other classrooms within the school.

Another attribute of solesolevaki that is very much applicable in a classroom is cooperation. The social capital accumulated through social networks within a classroom would allow students to cooperate within that shared network. Through trust and confidence in team engagement, students would begin to understand the opportunities they get by being involved in that social network thus student would cooperate. These lessons have prompted a need to establish a Solesolevaki Framework that could be implemented into Fiji's school curriculum.

Recommendation – Towards a Solesolevaki Framework

Figure 1 - Solesolevaki Framework

Social Influences	Human Influences	Students Participation	Short Term Impact	Long Term Impact
• Social Capital accumulation • Establishing networks and connections within a classroom and school • Family values taught from home.	• Classroom Teachers • Parents	• Classroom/ School actiities that foster group work. • Example: Group acitivities during excursion events	• Trust • confidence • Sense of community • Cooperation • Academic achievement. • Positive behaviour	• Lifelong learning on the benefits of teamwork • High level of trust • Physical, social and mental wellbeing.

In this proposed Solesolevaki Framework, it is envisioned that by putting emphasis on social capital in a classroom, students' behaviour and academic achievement would benefit. However, for this framework to work, establishing positive networks and connections are crucial. This can only be achieved if classroom teachers and students' parents play their roles well. For instance, parents should be encouraged to motivate their child to engage in productive group activities. Similarly, teachers could reward students for their group participation. These positive motivations to allow students to engage in accumulating social capital will allow trust, cooperation, and reciprocity among students. These will ultimately lead to short and long term impacts as indicated in Figure 1. So much has being learnt from solesolevaki on the benefit of accumulating social capital and it is certain that these lessons can be adopted in classrooms. Thus, this calls for future research on how social capital is constructed (or can be constructed) in Fijian schools.

References

Bourdieu, P. (1986). The forms of capital', in J Richardson (Ed.). *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). New York: Greenwood. doi: 10.1002/9780470755679.ch15.

Dale, A, & Onyx, J. (2005). *A dynamic balance: Social capital and sustainable community development*, UBC Press.

Dale, A. (2005). Social capital and sustainable community development: Is there a relationship?', in A. Dale & J, Onyx (Eds.) *A Dynamic balance: Social capital and sustainable community development* (pp. 13-30). Vancouver: UBC Press.

Dobell, R. (1995). *The 'Dance of the deficit' and the real world of wealth: Re-thinking economic management for social purpose*. Paper prepared for the National Forum on Family Security, March.

Farrelly, T. and Nabobo-Baba, U. (2014). Talanoa as empathic apprenticeship. *Asia Pacific Viewpoint*, *55*(3), 319–330.

Fonseca, X., Lukosch, S., & Brazier, F. (2019). Social cohesion revisited: a new definition and how to characterize it. *Innovation: The European Journal of Social Science Research*, *32*(2), 231–253.

Guion, L. A., Diehl, D. C. and McDonald, D. (2011) *Triangulation: Establishing the Validity of Qualitative Studies*. Retrieved from http://www.ie.ufrj.br/intranet/ie/userintranet/hpp/arquivos/texto_7_-_aulas_6_e_7.pdf

Leadbeater, C. (1999). *Living on thin air: The new economy.* Harmondsworth: Penguin Books.

Movono, A., & Becken, S. (2018). Solesolevaki as social capital: A tale of a village, two tribes, and a resort in Fiji. *Asia Pacific Journal of Tourism Research*, *23*(2), 146-157.

Memmott, P. and Meltzer, A. (2005). Modelling social capital in a remote Australian indigenous community', in J, Dale and J, Onyx (Eds.) *A Dynamic Balance: Social Capital and Sustainable Community Development*. Vancouver: UBC Press. Available at: https://ebookcentral.proquest.com/lib/uspfj-ebooks/reader.action?docID=3412062

Nabobo-Baba, U. (2006) *Knowing and Learning: An Indigenous Fijian Approach*. Suva: Institute of Pacific Studies: The University of the South Pacific.

Otsuka, S. (2005, November). Talanoa research: Culturally appropriate research design in Fiji. Presented at the International Education Research Conference, Melbourne Australia.

Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, *6*(1), 65-78.

Putnam, R. D., Leonardi, R. and Nanetti, R. (1994). *Making democracy work : Civic traditions in modern Italy*. New Jersey: Princeton University Press.

Shortall, S. (2008). Are rural development programmes socially inclusive? Social inclusion, civic engagement, participation, and social capital: Exploring the differences. *Journal of Rural Studies*, *24*(4), 450–457.

Snow, K. C. et al*.* (2016). Guiding principles for indigenous research practices. *Action Research*, *14*(4), 357–375.

Vaioleti, T. (2006). Talanoa research methodology: A developing position on Pacific research. *Waikato Journal of Education*, *12*(1), 21–34.

Van Rossem, R., Vermande, M., Völker, B., & Baerveldt, C. (2015). Social capital in the classroom: a study of in-class social capital and school adjustment. *British Journal of Sociology of Education*, *36*(5), 669–688.

Williamson, G. R. (2013). Illustrating triangulation in mixed-methods nursing research. *Nurse Researcher*, *12*(4), 7–18.

Educated young women and the challenges of reintegration in rural villages of Papua New Guinea.

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Abstract

Formal education for women and girls ostensibly plays a major role in the development of Papua New Guinea, in rural villages and throughout the country. However, educated young women returning to their home villages face many challenges including bearing the weight of their own and their parents' frustrated expectations. The main reasons they return to the villages is because they cannot continue in the education system or they cannot find formal employment. This paper uses qualitative data from two communities to demonstrate the striking lack of vocational outcomes from PNG's education system, particularly for women. The findings are discussed in relation to the nation's economic and political structures and current educational practices.

Introduction

Papua New Guinea is a country of rural farmers. While enjoying a comparatively high level of customary land autonomy and food security, they harbour strong and well-known aspirations for modernisation and greater control over their engagements with global markets (McCormack & Barclay, 2013; Patterson & Macintyre, 2011; Robbins & Wardlow, 2005). International development rhetoric promotes education as a primary means to achieving these aspirations. Many Papua New Guineans seek to follow this vision through the education of their children as the means to a better life. We examine the outcomes of this quest through the lens of the capability approach of Amartya Sen (2001, 2005) and Martha Nussbaum (2011).

Development as a concept in the capability approach is a process of expanding the real freedoms of people so that they can become and do what they have reason to value (Sen, 2001). Peoples' well-being derives in part from their capability to use available opportunities in the pursuit of a life they value. It is the capabilities people have that enable them to be and do different things in life (Nussbaum, 2011; Sen, 2005). Education is understood to be a capability in itself that can stimulate the development of other capabilities (Saito, 2003; Walker, 2006).

However, while young people have capabilities, many do not have the ability to overcome obstacles to achieving the kinds of occupations and lives they aspire to. This is primarily about a distinction between schooling and education. That is, capabilities are not only enhanced by formal schooling as a form of education but also by other forms of education, including learning about traditional, cultural and environmental knowledge (Unterhalter, Vaughan, & Walker, 2007).

Aside from content-based education, an education that can equip people with the agency to think, the capability to use information, analyze complex problems, and recognize their right to these capacities, is an education that can help them to enjoy the life they value. Using this broader understanding of education and capabilities, this article investigates the outcomes for the educated young women who return to the village.

For Papua New Guinea youth, like youth in other parts of the world, formal education is promoted as a means to a good future. The belief is, that with higher education, one could run a business, find a job, and therefore have more access to money in general. However, the majority of students do not make it through the system, then even if they do, opportunities for employment are limited.

The high population growth of almost 2% and low median age of about 22 years in Papua New Guinea means the country is facing huge youth challenges, especially with increasing rates predicted in population growth (NDOE, 2016b; NSO, 2011; Pham, Okely, & Whittaker, 2019; WorldBank,

2019). To address this, PNG would need to invest a large proportion of its resources in social services such as health and education as well as employment creation. However, health, education and employment creation programs are all chronically under-resourced (Pham et al., 2019). This forms a chain of obstacles for young people that has little to do with their individual capacity to achieve high results at school or abilities for employment.

Limited funding and capacity of PNG schools means that, despite having the ability to do well in school, many students cannot stay at school. Teachers are underpaid and overloaded with large classes. For example, a grade 9 class in Mount Hagen Park Secondary School had 90 students to just one teacher. While the effects of recent educational reform are still being monitored, current statistics show that of the students who enrolled in Grade 3, 92.2% would drop out along the way to national examinations in grade 8 and 10. That is, only 7.8% would finish Grade 12. Eventually only 0.7% of the population would obtain tertiary education (ILO, 2011; NDoE, 2016a; Pham et al., 2019; UNDP, 2019; WorldBank, 2018).

Most of these students, despite their education being cut short, are still better educated than their village dwelling families. However, due to lack of resources and opportunities for employment using their education, many end up back in the villages and communities or in urban centres with no jobs (NDOE, 2016b; Pham et al., 2019). PNG has a strong tradition of clearly divided gender roles. Context, possibilities and outcomes for educated but unemployed young men and women differ considerably. This article focusses on young women's plight in particular. The research question in this paper is: what are the challenges of reintegration in villages and communities for educated women in the absence of job opportunities?

Methods

The lead author and primary field researcher carried out participant observation, interviews and surveys in villages in Papua New Guinea, during the course of PhD research in 2015 for six months and then in 2017 for a month. The lead author is a Papua New Guinea national, though not from the area in which her research took place. Her analysis and theoretical approach straddled the emic-etic divide by applying a critical theory lens to a wider context of which she herself is a part – the PNG education system and culture.

Critical theory was used as a lens to explore the research question. Critical theoretical approaches use dialogic methods that combine participant observations and interviews. This approach is useful in making problematic what is taken for granted in culture, particularly in the interests of 'social justice' and the oppressed (Nichols & Allen-Brown, 1996, p. 226). This approach helped in conversations and reflections that allowed questioning the 'natural' state of happenings and phenomena under study. The life story method, as a narrative approach, was used to understand clearly the feelings and thoughts of the young women interviewed, in the context of their lives as they saw them (Bernard, 2006). Interviews were conducted in PNG *tok pisin* and Melpa, a language in the Western highlands province. These narratives are given wider context using anecdotes and informal discussions from other village women and men.

Inequality, a colonial legacy of passive learning mode, gender issues and educational outcomes are some of the themes explored through the narratives of two young women: Pombra, a university graduate, and Kala, a grade 10 drop out. Pombra's story is presented through her own words in an interview transcript. Kala's story is presented as a composite third person narrative in the present tense, created through interviews and conversations with Kala. The purpose of this technique is to show her story in its whole context with her own perspective. The paper begins with narratives to depict the themes that emerge which are then discussed using other interview material as corroborating evidence. These themes are discussed through the lens of the capability approach, to analyse and question education as an output that leads to human development outcomes. Pombra and Kala are pseudonyms.

What can I do with my education? Education and employment stories of two young women.

1. Pombra's story

Pombra is a 24-year-old woman who graduated with a university degree in science and is now living in the village. Pombra was always a top student, awarded first prizes for her high performance from primary through secondary school. She was accepted as first year Science Foundation student at the University of Papua New Guinea paying subsidised university fees. She enrolled in this program so that she could change to a medical degree in her second year. However, she did not achieve the required marks so did a science major in chemistry instead. She completed a bachelor's degree in science at the University of Papua New Guinea in 2014. After graduation she could not get a paid job despite several attempts. It was almost two years after her graduation, when interviewed, and she still did not have a job.

Pombra said she was very proud and happy to have completed her tertiary education, as this is a difficult achievement in PNG. Her expectation was that with a tertiary qualification, she would get a good job, but she was still unemployed. She blamed this partly on nepotism in hiring practices. The researcher, IA in the transcript, had the following conversation with Pombra:

> Pombra: I am happy, really happy that I got to graduate at college level and have a diploma which is what's important at the end of the day. So many hundreds of youths of my age desire to have a qualification like this but they can't because the system does not allow them. Those of us who are lucky happen to get to university and other higher education. I can get a job with it but unfortunately finding jobs these days has been so hard.

> IA: Can you tell me more about the difficulty of finding a job these days?

> Pombra: Having a degree or a qualification is one thing but getting a job is another thing. I have sent almost twenty different applications to companies and organisations but none of them have come back positive. There are many mines and extractive industries in the country, and I thought I would have a greater chance of being employed but sadly no. I am not needed maybe so I'm still waiting.

> IA: Why do you think this is happening?

> Pombra: most of these companies and industries practice nepotism. *Wantoks* [relatives] help *wantoks* even though some one may not be as qualified to do the job. If that person has a relative or '*sawe pes*' [someone known/ friend] he or she will get employed.

The conversation shifted to what Pombra has been doing in this interim period of trying to find a job. It became apparent that there was nowhere appropriate or satisfying for Pombra to be. This is due to her own expectations as well as the expectations of others of what it means to have a tertiary education.

> IA: What have you been doing for the last almost two years?

> Pombra: I was in the village for almost a month now but before that, since I graduated, I stayed with a relative in the city. I saw it convenient to stay in the city to apply and follow up on jobs applied for. I was provided food and accommodation, so it was ok.

IA: Were your relatives happy to accommodate you?

Pombra: My relative whose house I stayed at was the bread winner and he was related to me by blood (first cousin). He wanted to help me find a job, so he accepted me there. It was all good but as the months dragged on, I could sense the uneasiness and unpleasant behaviour of the spouse who thought I was a liability.

IA: What did she say?

Pombra: She thought I was doing nothing and wasting resources and that I should get a job or go to the village.

IA: What did you do?

Pombra: I didn't care or pay much attention to what she said because it was my brother/ cousin under whose roof we all stayed and benefited from. It was his hard work not her even though she was the wife, so I continued staying.

IA: What brought you to the village then?

Pombra: I am in the village because my brother [cousin] died. He died so young. He was around my age. I had to pay my last respect, so I came to the village.

IA: I'm sorry. Are you thinking of staying in the village or return to the city?

Pombra: For now, I will stay as I have a rent-free home, food and water that are almost free though we pay for some food at the market which is cheaper than the city. However, I can't stay here for so long as it's not a good feeling. I will be a topic of discussion and gossip in the village. I don't want to be referred to as; '*kisim sawe nating*' [educated for nothing]. People will want me and those with such qualification to have a formal job not like one of the uneducated ones in the village. Also, I must have a paid job to repay some of my parents' hard work and sweat put in getting me to school.

IA: So, with the knowledge, skills and qualification you have, is there any way you could apply or put it into use in the village?

Pombra: There is nothing much in the village with such a qualification.

2. Kala's story

The following prose is written from a conversation with Kala, a drop out from high school. It is in the present simple and in the third person for an empathetic effect.

It is around 8 am and people who are supposed to work in town are already gone, school children and students have left already too. They are so happy it's the last day of the schooling week before a fun-filled weekend. A weekend full of simple joys of running to the river to swim, to collect insects and make fires to cook sweet potatoes and other vegetables and fruits to share with the others and those from the village.

Kala sees their excitement of going to school and what it has for them because in their minds they are convinced the education and schooling they are getting will bring them a decent life, a life of a secured job that means better homes and lifestyle. It means moving into the city and living with other people from other provinces and regions and maybe the wider international community as well.

She remembers her own school days. Typically, students would open the textbooks to certain pages and just do the activities as prescribed in the textbook. This kind of teacher did most of the talking and students just followed and did what they were told. Such approaches were so boring so she sometimes would lose all the concentration and dream away of what life will be like once she completed school. When the day came for her to go to high school Kala was excited as that meant she would be among others to graduate with a high school certificate and be able to go on to further her education. She was chosen to go to Fatima Secondary School, which meant she did well and had passed the National Grade 8 examination. Fatima Secondary would earn her a grade twelve certificate. Fatima Secondary, like other secondary schools, accepted students who passed grade ten national examinations.

Secondary school was different in every way as she had to adjust to boarding life (as she had to board at school) and study as well. It was fun in many ways too, as she got to meet different students from other places and got to make friends with new ones. Every activity from formal classes to after class activities were programmed and strictly followed so she had to put in a lot of effort in trying to cope and certainly after the first term, she got used to it and loved it.

Formal classes were taken from 8am to 4pm everyday Monday to Friday with recess and lunch breaks in between. Kala enjoyed her lessons. The main or core subjects were English, maths, science and social science. English was taught every day and sometimes twice a day in 50 minute blocks. This had the highest load followed by mathematics, science and social science. These subjects were referred to as the core subjects. Non-core subjects were cooking, physical education, agriculture, guidance or life skills and practical skills and commerce. National examinations on core subjects determined tertiary education entrance. The non-core subjects were internally assessed but not nationally examined.

English was a desirable language as it was the language of instruction. English was a subject that was taught every day unlike other subjects. It had the largest time allocation. To speak, write and read in English meant that you were doing well and that you were truly an educated person. Students were discouraged from speaking a lot of their native language: 'stop speaking your Tokples [vernacular language]' or 'speak English at all times' signs were in many building.

When Kala found out at the end of Grade 10 that she was to discontinue and not make it to Grade 11 she was troubled and knew her life would not be easy. Sure enough, missing out for a Grade 11 placement was not welcome news. People gossiped that she was a failure who wasted school fees. Now she will just be like the rest of the villagers.

Her dad was so upset he just did not care how she lived in the village. His view was that a limited education was wasted money – completing school and going to university was the expected outcome of the investment of the family in a child's school fees. This would mean that the child could get a good job and in turn support her family who had enabled her schooling.

Kala felt disappointed, depressed and ashamed because of the pressure to 'repay' or give back something to the father who paid school fees that in his eyes didn't deliver the intended outcome. Additionally, it was a struggle for her to live in a polygamous family where her biological mother was not there for her and the other siblings. She left to live with her natal family. After a year she was tired and frustrated of doing nothing in the village. She decided to find a casual job in the town, so she secured secretarial work in Mount Hagen.

The stories of Kala and Pombra together with testimony and anecdotes from informants allow us to examine firstly the supposed benefits of education, followed by a discussion of other outcomes and themes that emerge.

The following discussion explores the structured effects of a system that promotes a colonial legacy of a passive learning model in education, producing graduates who are not prepared well to contribute to village level community development. Therefore, we further claim that the education

system promotes inequality. The conclusion is made in the light of the gender inequality that exists in the country.

Discussion

The benefits of a formal education

Literacy is identified as one of the fundamental roles of the nationally determined education system for it is considered as an important element in nationally uniting diverse Papua New Guinea (Gewertz & Errington, 1991). Women who have had formal schooling have the skills of reading a newspaper, instructions and manuals, opening accounts and doing banking and communicating generally in writing and speaking. Education that gives them such benefits reflect instrumental value (Brighouse & Unterhalter, 2010). These women are functionally literate and thus have the basic skills that can enable them to take part in community, provincial and national happenings and politics.

Literacy can also affect other skills and attitudes. When a girl or woman is educated and comes to live in the village, she is better informed about health and hygiene. She may take more control over her health, fertility and children. For example, Rori from Lealea says "I decided to take my child for immunisation because I know the importance of it. However, there are others who don't bother taking their children to the clinic for immunisation." Job opportunities also improve for some. An educated young woman has the potential of being employed in a paid job. Mori from Lealea says "after I finished Grade 12, I didn't get my offer to continue in the education system, so I went to Port Moresby and got myself a part time casual job at a local salon. I worked there for a few months then I worked at another office with a relative in town."

Kala also said "I was able to enrol myself at a local secretarial school and got myself a basic office and secretarial skills certificate at the school. With that I was employed as a casual in an organisation. The money earned helped me to buy basic items needed and at times helped with family and community obligations. When I got my wage, I was able to buy good second-hand clothes to look and feel good. Also, I would buy cooking oil, rice, tinned fish and sugar and tea for the house so my siblings and stepmother would have goodies like this apart from eating *kaukau* [sweet potato] and vegetables all the time."

Educated to do what?

While young women report these benefits from their formal schooling, often they report a lack of education appropriate to a productive village life. Often there is a conflict between their formal education and others' expectations of what their life should be in the village. The testimony below of young women returning to the village reveals these aspects of their experiences.

When girls enter secondary school, their routines and activities are quite different from day to day village life. "Secondary school separates the girl from the everyday transactions of the village…"(Sykes, 1996, p. 107). For example, at 16 years old Daisy was sent back to the village after Grade 10. She had been away at boarding school since she was 12 years old. Daisy was expected to carry out basic village-oriented tasks for which she had no education. She recalled the following incident:

> When I was in the house grandmother was taking care of me as my mum left dad because of their issues. I was literally taken care of by my grandmother. Domesticating pigs was important for grandma. One morning, she asked me to take the pig to put in the nearby bushes outside for fresh air. Although I wasn't too familiar with tying the pig correctly to a strong tree or plant, I didn't want to refuse my grandma's request, so I took the pig to the bush. It wasn't easy. I tied the pig onto a tree and ran back. After an hour or so, there was a loud call and scream from a neighbour for my grandma to come and take back her pig because it was running loose and destroying kaukau (sweet potato) gardens. Angry, grandma managed to get the pig back with the help of others. It was not acceptable as it

reflected my failure of not knowing the correct way to tie the pig. It required a special way of doing it, which I had no knowledge of. Things would have been worse because of the possibility of the pig being stolen or doing more destruction to food gardens as it was on the loose. Pigs are the most valued domesticated animals and if it were stolen, I would have been in great trouble.

Aside from the lack of training in such practical skills for these young women, their future prospects are not clear. Frustrated, like other young people who do not get any job offers, they just stay in the village. There is no organisation to help these young women learn life skills and civic knowledge. There is no government support system or recognition of these problems. These young women do not have a voice or a place where they can make their voices known and there are no paid jobs for them. Kala recalls:

> When I was in the village after being a boarding student for four years and then coming back in the village to live, it was a little awkward. I would always do house chores by helping in cooking sometimes, clean and sweep the house. I never did much gardening but instead would help sometimes to dig and wash sweet potatoes. I had to be with all the grandmothers and mothers to attend church meetings in the nights when I felt like doing something different but most times it was spent doing nothing. Sitting and talking about happenings and other people's problems was a common activity.

> Almost twice or once a week, I went to town with friends and would hang out in town doing nothing. It was fun just going into towns and window shopping and walking from one street to another.

> Apart from all these we would hang out and dance and listen to music. Communication was easier with the use of mobile phones.

Kala' frustrated expectations were shared by others in her life who thought that the education she had received should mean that she would have a successful job somewhere and be sending money home. Her lack of direction and feelings of inadequacy were compounded when she was judged as a failure by her village community and family. She says:

> The day we found out that we could not further our education, village wasn't on our mind as we had to bear the gossip and ridicule of people seeing us as failures. This included our immediate family members because they now know their efforts in getting us to school and having a job in the end has gone. I was so embarrassed and confused with the kind of education I got. I didn't know what to do. People would sit in groups at times and stare and I knew from their nonverbal actions that they were talking at my back.

So while the young women benefit in some ways from their education, if their only opportunity is to return to life in the village there is a disconnect between the life one is supposed to lead once educated and the reality of having nowhere to go but the village for which they have become unsuited, on several levels, due to the nature of their education.

They are perceived as failures. This is very disappointing and leads to negative self-esteem. The young women are disillusioned. They get angry at the gossip and shame they have to bear. At times they question why be educated in the first place.

Education for freedom and dignity in the absence of opportunity?

Do individuals after leaving school feel empowered to live a life they value and are happy about wherever they are, in rural villages or in urban settings? Brighouse and Unterhalter (2010) say that the capability approach in education has intrinsic value which refers to the benefits one obtains such as having a better mental life whether employed or unemployed. That is not true for most of the educated young women like Pombra and Kala who return to their villages or communities. Despite the benefits of being educated, they feel disempowered, disillusioned and confused.

These negative emotions and self-perceptions are signs of a person who is oppressed and not free psychologically. This contradicts some scholars' (Nussbaum, 2000; Sen, 2001) view that education frees individuals from low self-esteem and that human capabilities are the basic social minimum of what individuals are able to do, and be, which is informed by a culturally homogenized notion of what promotes dignity and self-worth. Healthy thoughts and self-image are low for these youngsters who go back to their communities.

Freedom in the capability approach assesses whether people are successful or not by looking at the kinds of freedoms they enjoy and they have reason to value. Sen (2001) argues that freedoms include political freedoms, economic facilities and social opportunities. He argues that people cannot do or be what they have reason to value in life when there are 'unfreedoms' or hindrances that block their way from doing or being what they have reason to value. Being accepted by one's natal community is culturally valuable in the kin-based culture of PNG. Yet this acceptance is denied many unemployed educated young women, paradoxically because of their education – the factor that the capability approach assumes it ought to deliver.

The reality of subsistence vs the expectation of skilled paid work
Papua New Guinea's broader social, economic, and political conditions are part of the chain of disempowerment in the life of an educated person who gets pushed out of the education system and is unemployed. PNG has abundant land resources. Almost 90% of all land in the country is customarily owned, either by individuals or under some form of clan ownership governed by traditional land tenure systems. Most people meet their basic needs through subsistence agriculture. A large part of the rural population and, to a lesser extent, the urban population relies for their livelihoods on fishing, hunting and a mix of subsistence and small-scale commodity agriculture (UNDP, 2018; UNESCO, 2007a). Food, relatively speaking, is easy to come by, but cash is far more elusive.

Despite national GDP figures that show economic growth, there is little correlation with employment (World Bank, 2019). The PNG economy is heavily dependent on primary industry, especially the extractive industries. But benefits of such extractive industries are not sustainable and do not translate to the wider job market. For example, a man from Lealea village impacted by mining, said: "The employment was good in the construction phase of the Liquefied Natural Gas plant, but only for two or three years. Now that construction is over, these youth including men and women do not have any job to make money. They are back and sit in the village without anything to do while the project is right on our land."

Economically, there is inequality between national income and the wealth and economic entitlements of individuals (Martin, 2012). The few who have good business and political power can enjoy a comfortable life and get richer. The rest, including the educated "drop outs", struggle (Gewertz & Errington, 1999; Martin, 2007).

The very sparse delivery of basic social services such as health services, good roads, well-resourced schools, electricity, and so forth, add to the constraints. These services most often do not reach the poorer strata of society and rural areas. Weak infrastructure, weak service delivery mechanisms, marketing difficulties, as well as low government and civil society capacity reduce the possibilities of alternative livelihoods. With about 87 percent of the population living in rural areas, this is a major concern (UNESCO, 2007b; World Bank, 2018, 2019).

Youths are often left unguided in the skills necessary to sustain and maintain community. Traditionally, young people had special social places such as the '*haus man'* for men and '*haus meri*' for women. In those places, they were taught and educated about life, culture, community responsibilities, values and '*pasin*' [ways] of a tribe or community. These practices were no longer in evidence in the two communities studied.

Occasionally, advice is given at village public meetings and gatherings, which may not be reflected in the young people's subsequent behaviour. This is because "being educated" means they are expected by their families and the broader community to live an exemplary life. Inter-generational conflict, originating from both sides can result. Hostility and pressure can come from older generations to educated youth returning to village life because of the general expectation that once one has completed an education, he or she should be employed earning cash, and supporting the extended family. Paying for an education for one's children is seen as an investment: an educated employed person will in return give back to the family and the community in monetary terms. From the other direction youths may not be listening to, or respecting, elders who are illiterate. In general, disintegration within traditional social units and breakdowns of law and order are obstacles.

Another reason for the position of educated PNG youth, on either staying in urban areas or returning to the village, is the minimal practice of critical pedagogy in schools and prevalence instead of the passive mode of learning passed on from colonial times. Both the form and content of formal education determine the broader life skills students do or do not acquire.

Passive learning hinders Critical Consciousness

Critical pedagogy is about the purpose and the process of education. Paulo Freire originally presented critical pedagogy as an approach to deal with issues of social injustice through literacy programmes. In Freire's (1972) renowned book 'Pedagogy of the Oppressed', he argues against a banking model of education, where students are seen as "empty vessels to be filled" by the teacher (p. 79). This practice can lead to domination and oppression. Freire (1972) suggests problem-posing education which encourages students as critical co-learners where all teach and all learn (Sadeghi, 2009). In problem-posing education the teacher challenges the learners' existential situation by asking "simple but stimulating and probing questions" concerning the problems of learners' lives (Crawford, 1978, p. 96).

The curriculum and approach taken in PNG schools may not necessarily be producing critical learners. Teaching and learning is more focused on academically oriented subjects that are structured to be examined. This is a 'top down' approach in an education system that stresses competitiveness. Students tend to focus on passing exams at the expense of learning to think critically and independently (Saito, 2003).

> Under this kind of education system, children find difficulties in learning to become autonomous. In this case, the children have no choice but to follow what others tell them to do and are considered to have limited capabilities even though compulsory education is provided. As a consequence, it seems appropriate to argue that education which plays a role in expanding the child's capabilities should also be a kind of education that makes people autonomous (Saito, 2003, pp. 27-28).

From Kala's story, many schools in PNG are teaching students as 'empty vessels to be filled' by the teacher. Competition for limited school places emphasises passing exams with high marks rather than think critically, autonomously or laterally.

There are two related issues to this approach to education in PNG. The first is that people's education does not equip them for the life they will eventually lead, due to the realities of livelihood opportunities in PNG. Secondly, a lack of critical pedagogical approach may mean an apolitical young population with limited problem-solving skills. The many people who get dropped out of the education system do not know what to do with their lives and cannot understand why they are jobless and feel so displaced.

Students are not taught about the socio-economic reality of the profound tension between cultures and social structures based on reciprocity and a global market system that demands possessive individualism. The education system does not make students realise that PNG's economy and food security is fundamentally underpinned by agriculture and that this is inextricably bound to an ancient and unbroken cultural and spiritual relationship to land that is anathema to the commoditising forces of markets and market ideology (Bourke, 2005; Koczberski, Numbasa, Gemis, & Curry, 2017). The formal education system focusses on graduates gaining white collar jobs which are very limited. Why would they think that there is a job out there for everyone when there is really none? Why is there so little teaching about the rich ethnic and cultural diversity that exists in PNG, or critical studies of colonialism and its legacies?

This is because within the school itself, the curriculum content is fragmented and teachers teach subjects rather than educate the whole person (Matane, 1986). The agents of education - home, school, church, community and others are not effectively integrated. They are fragmented. The community tends to view education in political and economic terms. Many teachers lack the social skills and motivation needed to work effectively with the community. In many cases, the church works alone in its attempt to provide for the spiritual development of the child. Many of the local, provincial and national political leaders are not effective role models for integral human development. Schools are becoming more and more isolated from the communities, and are too busy with administrative issues to develop these vital links with those other influences on the child's life (Matane, 1986).

The youth, the foundation for the present and future society spend a large portion of their lives getting educated. But what kind of education are they getting? Are they learning to be knowledgeable and responsible citizens of society? (Mel, 2002).

Inequality is promoted

The passive and rote form of learning commonly seen in the formal education in PNG today is to some extent the product of the colonial education system (Bargh, 2002; Johnson, 1993). There were various colonial administrators; British, German and Australian, but their aims and purposes were similar. Some of these aims were to pacify and civilize the territories in order to impose law and order and instill loyalty to the colonial regime, and as a result to cultivate a local population of passive listeners and observers. Development of the territories for economic profit was the main goal of colonisers. Education was for the purpose of producing a disciplined, docile native workforce for the plantations. One of the least important aims was to produce a small number of teachers, skilled artisans and clerks useful in the lower levels of commercial enterprises and the colonial civil service. These individuals became the elites who benefited from affluent lifestyle and power (Bray & Smith, 1985). Those who did not receive any of this education remained disempowered and controlled.

The colonisers are gone but their imprints are still visible (Bargh, 2002). The system that promoted passive listeners and observers is still the only option today for the majority of ordinary Papua New Guineans who are educated but excluded from the capitalist culture and economy that created it. The emphasis on English language learning is a legacy of the power of English for the colonised. However, in an international sustainable development model the education system is supposed to empower and free people to be autonomous to participate equally in a globalised society. Ironically, it is disempowering young women (and men) and creating an underclass. McKenna (2013) notes, "The powerful have succeeded in creating a social structure that profoundly reinforces passivity" (Johnson, 1993; Mckenna, 2013, p. 467).

The education system is promoting inequality. Education becomes a problem in terms of equality only when one segment of the population is educated, and another is not (Romaine, 1992). Education in postcolonial Papua New Guinea is positively associated with political and economic advantage. The minority of the people who have been able to enter and continue in the education system have been more likely to attain political office and higher incomes. This is attached, however

to the ability to gain employment, which in turn relies on other factors, including opportunity and family connections.

Conclusion

Papua New Guinea has a Gender Inequality Index (GII) value of 0.741, ranking it 159 out of 160 countries in the 2017 index (UNDP, 2018). Since 2017 there have been no parliamentary seats held by women. Only 9.5 percent of adult women have reached at least a secondary level of education compared to 15.0 percent of their male counterparts. Female participation in the labour market is 69.0 percent, slightly lower compared to 70.8 for men (UNDP, 2018).

A young woman who drops out of the education system and returns to the village faces compounding challenges at different levels as opposed to the young men. In many parts of PNG women are systematically disadvantaged by traditional patriarchal institutions as well. For example, in patrilineal societies sons are privileged in the inheritance of family and clan land because daughters are expected to marry out. While not the focus of this research, young men in PNG face their own unique challenges, these as well are explicitly gendered. Evidence, including extremely high level of gender-based violence in PNG (HRW, 2017; JICA, 2010; Melis, 2016) suggest that gendered inequalities are the cause of much suffering.

While formal education can be disempowering because of the social, political and economic state of PNG, it nevertheless can also have some broad benefits. There is global-scale statistical evidence that being educated in a formal system has economic, social, political and other benefits for many women and girls in developing countries like Papua New Guinea (World Bank, 2018). Educated women normally are healthier, participate in formal markets, earn higher incomes, and choose to have families of their own later (World Bank, 2018). However, women have lower representation in formal employment due to lower levels of post-secondary and lower tertiary education (Edwards, 2015 ; UNDP, 2019).

Educated young women in PNG do report some of the attributes claimed by national and global statistics (Pham et al., 2019). However, what becomes apparent from their testimony is that in the context of their lives, having a higher education can sometimes lead to dissatisfaction and feelings of failure. This is often due to the disjuncture between what an education is broadly expected to achieve, by themselves and their community, and what the real possibilities are in PNG for those who do get an education. If we adopt the capabilities approach in education for PNG, policy makers and stakeholders in education need to differentiate between schooling and education. Everyone, including children and youth, needs an education that can equip them with the agency and capability to critically reflect, to identify and use reliable information, and to understand complex issues and solve complex problems, as well as to recognize their right to these capacities, which can help them to enjoy the kind of life they actually value (Unterhalter et al., 2007).

Young women need an education that includes an explicit approach to consciousness raising that will result in empowerment for community participation and development. While this does not overcome structural issues that mean lack of job opportunity and wealth inequality, it is one step towards system change. Such education and consciousness raising allows for an educative process that prepares young women as such to increase their power (Ife & Tesoriero, 2006). Such consciousness raising should be about "helping people to understand the society and structures of oppression, giving people the vocabulary and the skills to work towards effective change" (Ife & Tesoriero, 2006, p. 75). Attention must be given to what people are capable of doing and being in their lived social, economic and political circumstances. There also must be consideration for the real opportunities available to them in the communities. Relevant stakeholders can work together to address this challenge.

References

Bargh, E. M. (2002). Recolonisation and Indigenous Resistance Neoliberalism in the Pacific. Australian National University

Bernard, R. (2006). *Research Methods in Anthropology: Qualitative and Quantitative Approaches.* Lanham: AltaMira Press.

Bourke, M. (2005). Agricultural production and customary land in Papua New Guinea. In J. Fingeleton (Ed.), *Privatising land in the Pacific*. Canberra.

Bray, M., & Smith (Eds.). (1985). *Education and Social Stratification in Papua New Guinea*. Melbourne: Longman Chesire.

Brighouse, H., & Unterhalter, E. (2010). Education capabilities and primary goods. In H. Brighouse & I. Robeyns (Eds.), *Measuring justice: Capabilities and primary goods*. Cambridge: Cambridge University Press.

Chambers. (1994). Participatory rural appraisal (PRA): Analysis of experience. *World Development, 22*(9), 1253-1268. doi: 10.1016/0305-750X(94)90003-5

Crawford, L. M. (1978). *Paulo Freire's philosophy: derivation of curricular principles and their application to second language curriculum design.* (Doctoral), University of Minnesota, ProQuest Digital Dissertations.

Edwards, J. (2015). Gender and education assessment, Papua New Guinea: A review of the literature on girls and education. Report prepared for the Australian High Commission, Papua New Guinea and the Education Capacity Development Facility.

Freire, P. (1972). *Pedagogy of the Oppressed*. London: Penguin.

Gewertz, D. & Errington, F. (1999). Emerging class in Papua New Guinea: The Telling of difference. Cambridge University Press.

Gewertz, D., & Errington, F. (1991). *Twisted histories, Altered Contexts*. Cambridge: Cambridge University Press.

HRW. (2017). Human Rights Reports World Reports 2017. USA: Human Rights Watch.

Ife, J., & Tesoriero, F. (Eds.). (2006). *Community development: community-based alternatives in an age of globalisation* (3 ed.). Australia NSW: Pearson Education Australia.

ILO. (2011). Child labour in Papua New Guinea: Report on the rapid assessment in Port Moresby on commercial sexual exploitation of children and children working on the streets 2011. Geneva: IPEC.

JICA. (2010). Country Gender Profile Papua New Guinea. IMG Inc.

Johnson, P. L. (1993). Education and the "New" inequality in Papua New Guinea   *Anthropology and Education Quarterly, 24*(3), 183-204.

Koczberski, G., Numbasa, G., Germis, E., & Curry, G. N. (2017). Informal land markets in Papua New Guinea. In S. McDonnell, M. Allen & C. Filer (Eds.), *Kastom, property and ideology: Land transformations in Melanesia,* Canberra: ANU Press.

Martin, K. (2007). Your own Buai you must buy: The Ideology of possessive individualism in Papua New Guinea. *The Anthropological Forum, 17*(3), 285-298.

Martin, K. (2012). Big men and business: morality, debt and the corporation A perspective Keir Martin. *Social Anthropology, 20*(4), 125-142.

Matane, P. (1986). A philosophy of education for Papua New Guinea. Ministerial Report. Waigani: National Department of Education.

McCormack, F. & Barclay, K. (2013). *Engaging with Capitalism: Cases from Oceania*. UK: Emerald.

Mckenna, B. (2013). Paulo Freire's blunt challenge to anthropology: Create a Pedagogy of the Oppressed for your times. *Critique of Anthropology*. https://doi.org/10.1177/0308275X13499383

Mel, M. (2002). *The place of arts in Papua New Guinea in relation to education in the new millennium*. Paper presented at the IEA Art Conference, Goroka: Papua New Guinea.

Melis, C. (2016). Challenging approaches to gender inequality.

NDOE. (2008). *Service statistics DOE 1990, 2000-2007*. Port Moresby. Retrieved from https://auspng.lowyinstitute.org/article/challenging-approaches-gender-inequality/

NDOE. (2016a). National education plan 2015-2019 Quality education for all. Waigani: NDOE.

NDOE. (2016b). National education plan 2015- 2019 Quality education for all. Port Moresby, NDOE.

Nichols, R. G. & Allen-Brown, V. (1996). Critical theory and educational technology. In D. H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (pp. 226-252). New York: Simon & Schuster Macmillam.

NSO. (2011). *Papua New Guinea National Population and Housing Census 2011*. Port Moresby.

Nussbaum, M. C. (2000). *Women and human development: The capabilities approach*. Cambridge: Cambridge University Press.

Nussbaum, M. C. (2011). *Creating capabilities: The human development approach*. Harvard: Harvard University Press.

Patterson, M. & Macintyr, M. (2011). *Managing Modernity in the Western Pacific*. St Lucia: University of Queensland Press.

Pham, N. B., Okely, A. D., Whittaker, M., Siba, P. & Pomat, W. (2019). Millennium development goals in Papua New Guinea: towards universal education. *Educational Research for Policy Practice, 19*, 181-209.

Romaine, S. (1992). *Language, Education, and Development*. New York: Oxford University Press.

Sadeghi, S. (2009). Critical pedagogy in an EFL teaching context: An ignis fatuus or an alternative approach? In L. J. R. Zhang, C.R. & Alsagoff ,L. (Ed.), *Englishes and Literatures-in-English in a Globalised World: Proceedings of the 13th International Conference on English in Southeast Asia* Singapore: National Institute of Education.

Saito, M. (2003). Amartya Sen's Capability Approach to Education: A Critical Exploration. *The Journal of Philosophy of Education, 37*(1), 17-33.

Sen, A. (2001). *Development as freedom*. Oxford: Oxford University Press.

Sen, A. (2005). Human rights and capabilities. *Journal of Human Development, 6*(2), 151-166.

Sykes, K. (1996). Making Paau New Guinean Women: The extension of women's initiation practices to secondary education in Central New Ireland. *Pacific Studies, 19*(4), 99-130.

Terry, N. & Abdullat, A. (2005). *Instrumental Freedom and Economic Development.* Paper presented at the Proceedings of the Academy for Economics and Economic Education

UNDP. (2018). Human Development Index Report. United Nations Development Programme.

UNDP. (2019). Human Development Data: Education. United Nations Development Programme.

UNESCO. (2007a). Country Programming Document- Papua New Guinea; 2008-2013 (Vol. 6). Apia: UNESCO.

UNESCO. (2007b). Country Programming Document 2008 - 2013. Apia: UNESCO Cluster office for the Pacific States.

Unterhalter, E., Vaughan, R., & Walker, M. (2007). *The Capability Approach and Education. Human Development and Capability Association* Prospero: The Capability Approach and Education. Human Development and Capability Association

Walker, M. (2006). Towards a capability-based theory of social justice for education policy- making. Journal of Education Policy. *Journal of Education Policy, 21*(2), 163-185.

World Bank. (2018). Understanding Poverty *Girls' Education*.

World Bank. (2019). World Bank in PNG Data. Retrieved from https://data.worldbank.org/country/PG

Acquisition and enhancement of teaching competencies during teaching practice: A Fijian Experience

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Abstract

This paper is a report of the study conducted to find out how much teaching competencies student teachers had acquired and enhanced during teaching practice. The research sample included 64 student teachers in urban secondary schools in Fiji. The findings revealed that student teachers had a good grasp of some teaching competencies but needed more preparation in others. There was evidence that teacher education providers and Associate teachers, play a pivotal role in enhancing these significant teaching competencies to student teachers. The findings reveal that any laxity in this provision gives rise to a number of problems such as lack of confidence, and poor classroom management, to name a few.

Introduction

Teaching practice is an essential component of any teacher education program. It provides experience to student teachers in a real teaching and learning environment (Marais & Meier, 2004; Ngidi & Sibaya, 2003). It is a practice that prepares students in making the transition from students to certified teachers. Once licensed the graduates start teaching at a reasonable level of teacher competency and improve with experience gained over the years. Student teachers are often not always ready to move into the classroom because converting theoretical knowledge into practice in real classrooms can be daunting and challenging. Therefore, teaching practice is a journey of overcoming such inhibitions and examining the experiences of student teachers within the real school parameters, and in the process, enhancing critical appraisal.

There is considerable research (Gruendler, 2018; Snodgrass, 2014; Thompson & Serra, 2005) to support the notion that student teachers make accurate evaluations of their teachers. Beyers (2008) further believes that "student evaluations of teacher performance are generally taken as an important measure of teaching effectiveness" (p. 102) by both teacher and pupils. Since effective teaching is linked to effective learning (Wu, 2011), there is a strong belief that students' evaluation should be encouraged. And as such, their feedback in this study reveals concerns that one often fails to see or acknowledge. Feedback is a device that allows for student teachers to measure their own knowledge and work progress. Biggs (2006) states that "the effect of feedback on low performers is to tell them that they lack ability" (p. 102) and gives them opportunity to improve their teaching. Hence, an important tool for quality teaching is student feedback on their individual teaching and learning. It is important to note that student evaluation is a process used by most universities and colleges to evaluate their lecturers' performance and efficiency (Pounder, 2007). However, feedback from students reveal that teacher evaluations are often overlooked (Emery, 2014; McPherson, 2006). Hence, this study makes an attempt to examine the feedback of students' teaching practice experience to explore what teaching competencies have been enhanced and which ones need more preparation.

Teaching practice is considered one of the most significant field experiences in preparing teachers (Clarke & Collins, 2007; Farrell, 2008; Johnson, 2004; Mpofu & Maphalala, 2018). The teaching practice component of any teacher education program is constructed on the understanding that the dominant philosophical nature of teacher education transforms into applicable realities of various classrooms (Purdy & Gibson, 2008). It is a professional exercise focused on assisting student teachers to bridge the gap between teaching and learning praxis. Teaching practice takes students into a learning environment that allows them to get involved and understand new experiences from a

variety of perspectives that are genuine and so unreal to the mock sessions of training provided by teacher education providers. It inspires them to create integrative ideas and concepts and fosters the ability to apply new ideas in realistic practice (Merriam, 2009). This process involves interactive guidance from experienced associate teachers and is a procedure that allows for development, independence and confidence in teaching. One of the major purposes of teaching practice is to sanction students to look beyond teacher education providers and address challenges encountered in schools and classrooms. Pickard (2006) emphasizes that the more exposure students have of real classroom settings, the better they can develop their own teaching philosophies and increase competence levels.

The primary aspects of teaching practice include carrying out the role of a teacher to practice teaching competencies and recognizing a whole range of all other happenings in school and integrating this praxis. The reality check of what happens in the classroom actually takes place when student teachers immerse themselves in the classroom during teaching practice. That is when they get opportunities to experiment with knowledge and pedagogies that they carry from their teacher education providers to classrooms. Teaching practice opens up new experiences for them and is often a very exciting phase of their preparation.

Teaching practice also provide students opportunities to exercise classroom management competencies and establish good relationship with pupils, staff, parents and community. Monitored under the guidance of experienced Associate teachers, students are given the practice of learning, understanding and experimenting teaching. Teaching assessment reports made on their growth and progress by their Associate teachers and their supervising lecturers enable teacher education providers to evaluate competencies or otherwise of practical aspects of teaching. Teaching assessment reports are, thus, seen as an important document that can be used to further improve teacher education programs.

Teacher education needs to be well planned, carefully structured and meticulously executed. This is because teaching practice is an important link that paves the way towards preparation of quality teachers. Hence, it ought to be seen as the critical slice of any teacher education program and given highest priority. Kansanen, Tirri, Meri, Krokfors, Husu, and Jyrhämä (2000) state that validating students' knowledge through teaching practice is the core in teachers' pedagogical thinking. This experience allows for students to become better quality teachers (Young, 2001). The basic purpose of teaching practice is, therefore, seen as the development of a personal conception of teaching. An accumulation of such experience is valuable information that, when assembled, gives teacher education providers constructive insight into the teacher education program.

During teaching practice, it is important that student teachers not only learn teaching competencies but start acquiring lifelong learning competencies like communication, collaboration, leadership and adaptability, in addition to developing new skills like advanced technology and online education. Today's pupils in the classroom are raised with technology and student teachers need to be knowledgeable with current changes in technology. Student teachers also need to be well-versed with not only their own cultures but understand, honor and respect the cultural diversity in classroom. Respecting and valuing pupils' diversity will make student teachers' life easier both in the classroom and school community. In addition, students need to develop and enhance their emotional competencies because teachers ought to empathize with pupil needs. Student teachers who adapt to such skills, in addition to classroom teaching competencies, will emerge as holistic teachers and will be much appreciated both by their pupils and the community.

Methodology

Purpose

This research was guided by the following question '*What were the teaching competencies that student teachers acquired during their teacher education degree?*' It guided in finding out how well the student teachers were prepared by their teacher educators to teach and how much of the skills they had acquired were enhanced during their teaching practice. It also sought to seek factors affecting the process of this achievement.

Sample

While participants were randomly selected for interviews, convenience sampling was employed as the participants were readily available to the researcher. Convenience sampling is a process of selecting subjects for investigation based on availability and ease of implementation (Cohen & Crabtree, 2006). In the case of this study convenience sample was the students on teaching practice. It was convenient to reach out to them because of the researcher's involvement in teaching practice. The participants had diverse academic backgrounds in terms of their areas of specialization such as sciences, commerce and mathematics and vocational studies. All participants had completed their teaching practice in urban multi-cultural schools and all of them had English as either their second or third language of communication. Gender difference in the sample was not considered a significant variable.

Instrument, design and participation

In this qualitative research, an in-depth interview using a semi-structured interview guide was used. Ten student teachers were interviewed and their views were recorded and analyzed. A semi-structured questionnaire was also administered to 64 students. Semi-structured questionnaire was used to allow students to provide their views without being unduly filtered. To gain an insight into students' experience of classroom teaching and related issues, questions were based on classroom based teaching competencies. The questionnaire was divided into two parts. Part A indicated how well the students had demonstrated teaching competencies acquired from their teacher educators. Part B of the questionnaire had additional closed and open-ended questions to access detailed explanations concerning various teacher education related issues and the kind of support provided to them by their associate teachers during the practicum.

The students for the interview were selected randomly ensuring that each was from a different school at the teacher institution. The interview was seen as a suitable instrument for gathering data as interviews allow participants to express their ideas and understandings of the context that they work in (Cohen, Manion, & Morrison, 2007; Punch, 2009). Interviews also assist in getting in-depth information around the topic through inquiry, which is not possible while using questionnaires; and this flexibility permits the researcher to ask for further explanations and also generate new questions based on their responses (Merriam, 2009). For this study, there was a need to follow up on information highlighted from the questionnaire data. The interview further allowed for discussion on the predetermined themes and at the same time allowed interviewee "free to vary, around and from that issue" (Freebody, 2003, p. 133). Moreover, interviews allowed an exploration on matters not previously revealed in data provided in the questionnaires. An additional reason is that in questionnaires there is a lot of different interpretations on one particular subject as each person may have a different perception to see and understand things (Merriam, 2009). This was quite possible in this study because, as mentioned earlier, English was the second or third language of communication for all participants. In-depth probing during interviews gave clarity to doubtful issues. One other reason for taking the interview was that students would have more flexibility to talk openly and freely about issues especially when they were away from their mentor schools and associate teachers.
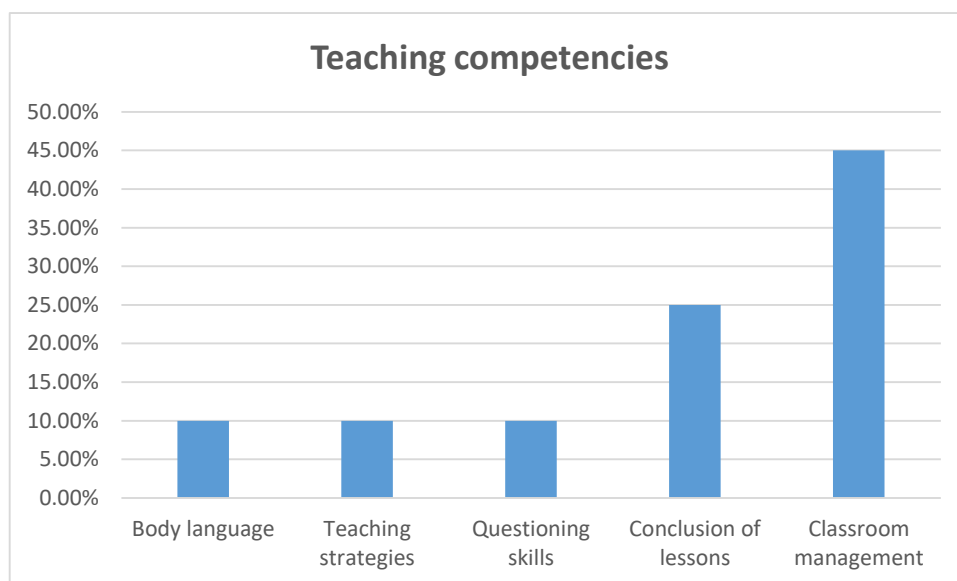
Results

Findings from questionnaire

The questionnaire focused on specific teaching competencies related to lesson planning: administering effective 'introduction' and 'conclusion' of a lesson; using a variety of teaching strategies, questioning skills, effective group work management; classroom management competencies; and appropriate use of body language while teaching. The survey questions required students to rate their own performance on a Likert-type scale of four:

a) Completely agreed
b) Moderately agreed
c) To some extent
d) Not at all

Each item was analyzed on the basis of ratings given and for each item the percentage of given scores were calculated. The higher percentage was categorized as positive and lower percentage was categorized as negative. While positive responses affirmed that students were well prepared with the teaching competencies provided during their teacher education the negative responses indicated a need for remedial work in the identified areas of teaching competencies. An analysis of this data revealed that whilst most students had a fairly good or moderate knowledge of implementing most of the teaching competencies, the ones that needed attention were competencies related to 'concluding their lessons' and 'classroom management'. This outcome is shown in the graph below:

Figure 1: Graph showing the percentage of teaching competencies that needed to be enhanced

Findings from interviews

The interviews explored qualitative dimensions in particular and yielded results which reinforced that teacher education providers had been fairly good in preparing students in their teaching competencies and that teaching practice was the best way of practicing and enhancing these competencies. The interviews also revealed that once in practice the student teachers realized that there was a need to re-address and strengthen a few of these competencies. An analysis of their responses from the transcript interviews revealed the following:

a) Lesson plans done by the students were well structured and 'conclusion' was carefully planned but when students implemented their lesson plans there were many factors that did not allow them to effectively 'conclude' the lesson. One of the principal factors was 'time management'. Students voiced that they had become so engrossed in teaching that they only realized the lesson duration was over when the siren rang indicating end of lesson. This led to a hurried 'conclusion' or, in many cases, no 'conclusion'.

b) Students mentioned that a lot of their teaching time was used in controlling pupil behavior and having large numbers (45 to 50 per class in urban schools) did not help. Large numbers also challenged them into implementing 'effective group work'.

c) 'Classroom management' was revealed as one of the most challenging competencies by the student teachers. A lot of this challenge related to issues mentioned earlier like large pupil numbers, behavior management, in addition to, pupil learning difficulties.

d) Students also stated that they had a lot of expectations from their associate teachers which did not come forth as expected. Some associate teachers were not so accommodating in providing much needed support and guidance. Some associate teachers also did not role model proper teaching competencies.

e) The students realized that micro-teaching sessions provided by teacher education providers cannot replicate a genuine classroom setting. The practice in mentor schools was very important and the role of associate teachers very significant.

f) Due to all of the above noted challenges students felt that they were not prepared on 'team teaching' by their teacher education providers and as this would have helped them overcome a lot of the difficulties they faced.

Discussion and implications

During teaching practice, it was important for student teachers to not only reflect on teaching philosophies of their experienced associate teachers but also understand how their own experiences in mentor schools supported them in becoming quality teachers. While literature indicated that associate teachers provided crucial teaching experiences and had an encouraging effect on students (Beck & Kosnik, 2000; Hunn, 2009; Petrarca, 2010; Wainman, 2011; Wright, 2009;), research also revealed that as student teachers in the classroom the students found some teaching competencies quite challenging.

Student responses revealed that most of them were quite content with teaching competencies related to: lesson planning, designing teaching aids, administering effective introduction of a lesson, using a variety of teaching strategies, questioning skills and the appropriate use of body language in the classroom. However, it was noted that quite a number of students faced difficulties in properly 'concluding' a lesson. In addition, majority of the students also faced challenges in appropriately 'managing a classroom'. This did not seem surprising because studies revealed that student teachers needed more support from their teacher education providers and associate teachers in mastering classroom management skills (Bezzina, 2006; Graybeal, 2017; Mpofu & Maphalala, 2018; Wainman, 2011).

In the course of interview, student teachers discussed their experiences during teaching practice, more specifically on the problems they faced. They deliberated on what could be done to enhance their weak teaching competencies during their teacher preparation phase. They conversed that their teacher educators had briefed them on how important it was to effectively 'conclude' every lesson that was taught. The students were emphatically told to 'tie the loose ends' before leaving the classroom. Students believed that their lesson plans were well structured and 'conclusion' was carefully planned but when they actually started teaching there were many factors that did not allow them to effectively 'conclude' the lesson. One of the principal factors was 'time management'. Students said that they had become so engrossed in teaching that they only realized the lesson had ended when the siren rang. They said that they 'got carried away' and lost track of time. This led to a hurried 'conclusion' or, as in many cases, no 'conclusion'.

Another factor that affected the implementation of a planned 'conclusion' was the large number of pupils in each class. Most pupils needed a lot of attention and, as a result, student teachers spent a lot of time trying to attend to their concerns and used a lot of their teaching time in controlling pupil behavior. One other problem that a number of student teachers faced was the implementation and management of effective group work as a teaching strategy. Due to the large number in class, students were challenged to complete group work activities as well as manage pupil behavior. Many times this was a futile effort and led to loss of valuable teaching time which did not allow for the 'conclusion' of a lesson. It was thought-provoking to apprehend that the preparation provided by teacher educators did not always align with the realities of a classroom (Chalies et al., 2012; Clarke & Braun, 2013; Calloway-Graham, 2012).

The outcome of questionnaire data had revealed that a lot of student teachers were not very competent in 'managing' a classroom. During the interview students talked about their own experiences and opinions on this teaching competency. Classroom management is an important skill to acquire for many students especially because often effective teaching and learning happens with pupils who are well behaved and focused in the classroom. But then again this may not be true all the time. Some pupils are used to studying in noisy classes. It is also important to note that classroom management competencies get better with experiences in teaching (Mpofu & Maphalala, 2018). One may not master this competency during teaching practice. In addition, a class with a large number of pupils is not always easy to handle even for experienced teachers.

'Classroom management' has been one of the most challenging competencies for most of the student teachers. This skill is application in nature and the difficulty of it is only realized when students deal with real pupils in real classrooms. Only when in mentor schools did the students realize that the 'micro-teaching' sessions provided at their teacher education institutions cannot replicate a real classroom setting (Clarke & Braun, 2013; Conderman et al., 2012). It also appeared that some students were quite optimistic and flexible in their approach to their competency in 'classroom management'. They mentioned that sometimes their teaching strategies worked flawlessly and sometimes things did not work out as planned, and this usually led to some pupils misbehaving while others gave full attention to the teacher. Some students also mentioned that they truly needed 'a lot more pairs of eyes', especially to monitor the whole class at one time. In addition, students mentioned that pupils' learning difficulties was another contributing factor resulting in poor classroom management.

In addition, it is important to understand that a lot of Pacific culture is community living which focuses on group work. Pacific writers like Thaman (2012) and Nabobo-Baba (2006) stress that culture cannot be separated from education. In Fiji, because of its multi-ethnic nature, school classrooms comprise of pupils who come from diverse cultural backgrounds. Pupils often carry into classroom their individual and communal lifestyles and this include numerous problems and learning complications. Multi-ethnic combinations can have adverse consequences in classroom teaching, learning and pupil behavior. While this may be one other contributing factor in students facing difficulties in properly managing a classroom, there are many other factors that exist. What is more important is how students learn to develop the competencies of managing a classroom for effective teaching and learning.

During the interview some student teachers also discussed that close collaboration with their colleagues on classroom teaching issues helped resolve or simplify a lot of problems for them. One strategy that students mentioned that they thought would assist in making classroom teaching less intimidating, was the concept of team teaching. This allowed for immediate assistance and consultation and was beneficial both for teachers and pupils. El-Haj and Rubin (2009) believed that co-teaching allowed teachers to reach out to pupils with learning difficulties because of the assistance of an additional teacher. Milne et al. (2011) added that working together allowed the co-teachers to discover what skills had worked. Student teachers have acknowledged that lessons could be improved through co-teaching. Students felt that their teacher education providers did not provide them enough knowledge and experience on co-teaching as one of the effective methods of

teaching. Students realized that this was a good method especially for them, as beginning teachers, because they needed a lot of support in the classroom. They realized that co-teaching attracted the interest of pupils as well because there were more instructors in the class which made classroom management easier and increased pupils' eagerness to learn.

Healthy communication and collaboration between student teachers, their colleagues and associate teachers about their daily activities assisted in sharing experiences and exchanging ideas that helped students deliberate on various teaching strategies and classroom management competencies. This interaction and partnership helped students determine whether their methods actually worked or not. It further led to identifying strategies that failed to work and suggesting alternatives. This seemed a good way to acquire and implement diverse teaching techniques to enhance competencies in classroom management.

It is important that student teachers learn to create a positive and encouraging classroom environment where pupils can learn in a relaxed yet well controlled setting. Students are not expected to become proficient teachers during their teaching practice phase but should at least have good knowledge of what to do and how to do it. Bezzina's (2006) study revealed that student teachers expect a lot more support from both their teacher education providers and associate teachers in understanding and implementing classroom management competencies. The students need good role model teachers who can explain and demonstrate good teaching competencies. One needs to understand that competencies in classroom management comes with practice. For many students the transition from limited micro-teaching sessions provided at teacher education institutions to an authentic classroom setting can be a difficult period. Competencies in classroom management need to be nurtured as this is one of the many purposes of teaching practice. Student teachers and the teacher education providers need not panic if these competencies are not well displayed. Teaching practice is just the beginning of a long journey of practicing and refining all teaching learning competencies.

Conclusions

Student teachers were asked to rate their experiences on classroom teaching competencies through a questionnaire survey. The teaching skills that were focused on were related to lesson planning, administering effective introduction and conclusion of a lesson, using a variety of teaching strategies, questioning skills, effective group work management, classroom management skills, and the appropriate use of body language whist teaching. The collated data revealed that majority of the students were well prepared with most of these teaching competencies by their teacher education providers. The competencies that students identified as weak were how to effectively 'conclude' a lesson and 'classroom management'. The students were asked to elaborate on these two challenging teaching skills and in response the students discussed issues that contributed to their difficulties such as large class sizes; inability to manage time appropriately; and being unable to manage the behavior of some noisy and disobedient pupils in the classroom. It is important to note, however, that the respondents were student teachers and one cannot expect them to be as good as their experienced counterparts. Nevertheless, the students took the given opportunity to learn from the professional experience and competencies of their associate teachers.

Students also acknowledged the opportunity provided to them to practice their theoretical knowledge in real classrooms and believed that teaching practice had a great impact on their learning. They further stated that they needed more support from their teacher education providers to enhance some challenging teaching competencies. This is a matter that the teacher education providers can take note of because there is no remedial practicum program at most teacher education institutions to remedy, rectify and enhance the challenging teaching competencies. This is because most students graduate after successfully completing teaching practice. It is, therefore, important that Education Ministries and school heads carry on the preparation of teachers from where teacher education providers supposedly end. The baton of teacher guidance and coaching,

after a student is issued with teaching license, is passed on to other stakeholders so that professional development of teachers continues. Collectively, these three stakeholders (teacher education providers, the Education Ministries and school heads) can continue to develop and enhance teaching skills for new teacher graduates.

Recommendations

Based on the findings of the study the following recommendations are made:

a) Classroom management

Most student teachers found managing a classroom quite challenging. This was expected since classroom management is not a skill one learns in theory. It is very practical in nature and the behavior of pupils in any class depends on numerous factors which are not always manageable by teachers. Student teachers' minimum experience in a real classroom setting also contributed to this. It is recommended that teacher education institutions provide real classroom micro teachings sessions in the course of study. Also, as noted earlier, most urban schools had large numbers of pupils in the classroom which partly led to difficulty in controlling pupil behavior. It is important to note that student teachers cannot be expected to master classroom management competencies in their initial days of teaching practice. It is a competency that comes with years of experience.

b) Time management

Once again a number of students were not able to adjust their lesson plans with the duration of the lesson time. They faced difficulties in completing group work (that required precise planning and implementation) and in 'concluding' lessons. In most cases effectively 'concluding' a lesson was a major challenge for many students especially due to poor time management. Students need to be more mindful of time whilst teaching. They need more micro teaching sessions during their teacher preparation phase on how to effectively 'manage time' and 'conclude' lessons.

c) Teacher education providers

It is vital that teacher education providers evaluate experiences of students during teaching practice and work on competencies that students find challenging.

d) Associate teachers

The associate teachers need to be more committed towards enhancing teaching competencies of student teachers. Some of them need to be better role models and display exemplary teaching competencies.

References

Beck, C., & Kosnik, C. (2000). Associate teachers in pre-service education: Clarifying and enhancing their role. *Journal of Education for Teaching*, 26(3), 207-224.

Beyers, C. (2008). The hermeneutics of student evaluations. *College Teaching, 56(2),* 102-107. http://www.jstor.org/stable/pdf/20695187.pdf

Bezzina, C. (2006). Views from the trenches: Beginning teachers' perceptions about their professional development. *Professional Development in Education, 32*(4), 411-430.

Biggs, J. (2006) *Assessment and Classroom Learning: a role for summative assessment, Assessment in Education: Principles, Policy and Practice*, *5*(1), 103-110. https://www.tandfonline.com/doi/abs/10.1080/0969595980050106

Calloway-Graham, M. (2012). My life as a practicum director. *Reflections: Narratives of Professional Helping, 18*(2), 8-14. http://ezproxy.usp.ac.fj/login?url=https://search.proquest.com/docview/1462024033?accountid=28103

Chalies, S; Escalie, G; Bertone, S. & Clarke, A (2012). Learning 'rules' of practice within the context of the practicum triad: A case study of learning to teach. *Canadian Journal of Education, 35*(2), 3-23. http://ezproxy.usp.ac.fj/login?url=https://search.proquest.com/docview/1032661946?accountid=28103

Clarke A., & Collins, S. (2007). Complexity science and student teacher supervision*. Teacher Education,* 23(2),160-172.

Clarke, V. & Braun, V. (2013). Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. *The Psychologist,* 26(2), 120-123. http://eprints.uwe.ac.uk/21155

Cohen D., & Crabtree B. (2006). *Qualitative Research Guidelines Project*. http://www.qualres.org/HomeConv-3802.html

Cohen, L., Manion, L. & Morrison, K. (2000). *Research Methods in Education*. London: Routledge/Falmer.

Conderman, G., Johnston-Rodriquez, S., Hartman, P., & Walker, D. (2012). Honoring vices from beginning special educators for making changes in teacher preparation. *Teacher Education and Special Education, 36*(1), 65-76.

El-Haj, A T., & Rubin, B. C. (2009). Realizing the equity-minded aspirations of detracking and inclusion: Toward a capacity-oriented framework for teacher education. *Curriculum Inquiry, 39*(3), 435-463.

Emery, R. A. (2014). *The relationship of teacher evaluations and changes in classroom instructional practice* (Order No. 3691437). (1672921012). http://ezproxy.usp.ac.fj/login?url=https://search.proquest.com/docview/1672921012?accountid=28103

Farrell, T. S. C. (2008). Here is the book, go and teach: ELT practicum support. *RELC Journal*, 39(2), 226-241.

Freebody, P. (2003). *Qualitative Research in Education: Interaction and Practice*. London: Sage Publications.

Graybeal, A. E. (2017). *Independent school teachers' perceptions of supervision and evaluation.* http://ezproxy.usp.ac.fj/login?url=https://search.proquest.com/docview/1954090480?accountid=28103

Gruendler, D. L., J. (2018). *Student Evaluations of Teaching: Perceptions of Faculty Knowledge and Their Relation to Learning* (Order No. 10928162). Available from ProQuest One Academic. (2130612285). http://ezproxy.usp.ac.fj/login?url=https://www.proquest.com/dissertations-theses/student-evaluations-teaching-perceptions-faculty/docview/2130612285/se-2?accountid=28103

Hunn, L. L. (2009). *Field experience supervision: A comparison of cooperating teachers' and college supervisors' evaluations of student teachers.* http://ezproxy.usp.ac.fj/login?url=https://search.proquest.com/docview/305035349?accountid=28103

Johnson, S. M. (2004). *Finders and keepers: Helping new teachers survive and thrive in our schools.* San Francisco, CA: Jossey Bass. http://au.wiley.com/WileyCDA/WileyTitle/productCd-0787969257.html

Kansanen, P., Tirri, K., Meri, M., Krokfors, L., Husu, J., & Jyrhämä, R. (2000). *Teachers' Pedagogical thinking. Theoretical landscapes, practical challenges.* New York: Peter Lang.

Marais, P. & Meier, C. (2004). Hear our voices: student teacher's experience during practical teaching. *Africa Education Review*, *1*(2), 220-233.

McPherson, M. A. (2006). Determinants of how students evaluate teachers. *Journal of Economic Education,* 37(1), 3-20.
http://www.jstor.org/stable/30042683

Merriam, S. (2009). *Qualitative Research: A Guide to Design and Implementation*. San Francisco: Jossey- Bass.

Milne, C., Scantlebury, K., Blonstein, J., & Gleason, S. (2011). Co teaching and Disturbances: Building a Better System for Learning to Teach Science. *Research in Science Education*, *41(*3), 413-440.

Mpofu, N., & Maphalala, M. C. (2018). A comprehensive model for assessing student teachers' professional competence through an integrated curriculum approach. *The Journal for Transdisciplinary Research in Southern Africa, 14*(2).
doi:http://dx.doi.org/10.4102/td.v14i2.486

Nabobo-Baba, U. (2006). Teacher education for new times reconceptualising pedagogy and learning in the Pacific. *Directions: Journal of Educational Studies*, *28*(1 & 2), 63–91.

Ngidi, D.P., & Sibaya, P. T. (2003). Student teacher anxieties related to practice teaching. *South African Journal of Education*. *23*(1), 18–22.
http://sajournalofeducation.co.za/index.php/saje/article/viewFile/129/160

Petrarca, D. M. (2010). *Associate teacher learning tool: An exploration of associate teachers' use and responses.*
http://ezproxy.usp.ac.fj/login?url=https://searchproquestcom.ezproxy.usp.ac.fj/docview/847581866?accountid=28103

Pickard, J. (2006). Collaboration between teacher educators: A 4-year action research study to improve our own professional practices. *Childhood Education, 82(3),* 165.

Pounder, J. S. (2007). Is student evaluation of teaching worthwhile? An analytical framework for answering the question. *Quality Assurance in Education, 15(2),* 178-191.
https://www.wku.edu/senate/archives/archives_2015/e-4-o-is-studentresearch .pdf

Punch, K. (2009). *Introduction to Research Methods in Education*. Los Angeles: Sage Publications.

Purdy, N., & Gibson, K. (2008). Alternative placements in initial teacher education: An evaluation. *Teaching and Teacher Education*, *24*(8), 2076-2086.

Snodgrass, R. D. (2014). *Consequential Validity in For-Profit College Student Evaluation.*
http://ezproxy.usp.ac.fj/login?url=https://www.proquest.com/dissertations-theses/consequential-validity-profit-college-student/docview/1540841518/se-2?accountid=28103

Thaman, K. H. (2012). *Keynote presentation: Reclaiming a place: teachers and the education of Indigenous peoples in Oceania.* MATSITI National Conference.
https://pdfs.semanticscholar.org/b821/ec372cbebb4acb38004c5035e6eefc64bd43.pdf

Thompson, R. J., & Serra, M. (2005). Use of course evaluations to assess the contributions of curricular and pedagogical initiatives to undergraduate learning objectives. *Education, 125(4),* 693-698.

Wainman, K. E. (2011). *The associate teacher in the preservice practicum.*
http://ezproxy.usp.ac.fj/login?url=https://search-proquest-com.ezproxy.usp.a   c.fj/docview/914750342?accountid=28103

Wright, C. (2009). *A study to explore the strategy of field -based teacher preparation: Professional development schools.*
http://ezproxy.usp.ac.fj/login?url=https://search.proquest.com/docview/304874431?accountid=281

Wu, Y. S. (2011). *Research of effective classroom teaching* (Order No. 10549403). Available from ProQuest One Academic. (1874893662).

Young, L. J. (2001). Border crossing and other journeys: Re-envisioning the doctoral preparation of educational researchers. *Educational Researcher, 30*(5), 3-5.

Qualitative Meta-Synthesis of studies on the use of ePortfolios for language learning: A Grounded Theory Approach

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Abstract

The purpose of this study was to conduct a qualitative meta-synthesis using a Classical Grounded Theory approach to examine previous studies on language ePortfolios. A preliminary search on the EBSCO host database alone yielded 15,111 results and a specific search for peer reviewed case studies on language ePortfolios yielded 105 results, which were used as the initial sample. The classical grounded theory approach employed analytical processes such as open, selective and theoretical coding; theoretical sampling, memo keeping and the constant comparative method. What emerged from the analysis of the data was the overwhelming focus of proponents of language ePortfolios to develop self-directed or autonomous learning skills in their language students. Their particular response to this concern with the language ePortfolio can be captured by the concept of *facilitated engagement* which is essentially the designing, developing, implementation and evaluation of methods, processes and spaces for the engagement of language (L2) students. This engagement involves interaction with the content, language and culture, activities, peers, assessment and assessment feedback and learning process. The four self-explanatory sub-categories or sub-themes that emerged were teacher-driven facilitated engagement, peer-driven facilitated engagement, self-driven facilitated engagement and finally content-driven facilitated engagement.

Introduction

The case of ePortfolios has been perceived differently by different users and researchers in different geographical locations, chronologies and contexts holding differing experiences and views of this technological educational tool. The views range from the positive at one end of the spectrum—ePortfolios being a useful tool for education (Challis, 2005) to the negative at the other end—it being a waste of conference time and effort (Clark, 2011). In the middle of this continuum are people like Maddux and Cummings who in 2004 were of the opinion that "the jury is still out regarding the fate of ePortfolios" (Challis, 2005). It is hoped that a meta-synthesis of the different views and experiences of ePortfolios would help to explicate a theory that is grounded in the data.
This study is important for The University of the South Pacific (USP) as a tertiary institution where the language of instruction (English) is predominantly a second language for the majority of students and probably a third or even fourth language for some of them in Vanuatu, for example (Lankbeck & Mugler, 2000). A substantial number of USP students come through to university with poor written and spoken English skills (being a foreign language) and thus struggle in their university studies because of these barriers. Various initiatives have been set up to mitigate these factors such as having language committees, ELSA tests and supplementary English language courses, to name a few.

Technology in general and the ePortfolio has played a major role in the delivery of learning and teaching at USP, because of the nature—small island states separated by huge expanses of water—of the twelve South Pacific island countries which our students are drawn from coupled with the inability of most students to afford traversing these huge distances. The language ePortfolio has been used as an instructional tool by a number of educational institutions in various countries/regions for teaching language and it is envisaged that this study will pave the way to introducing and facilitating language ePortfolios at USP if the study can prove its effectiveness. This research is important to USP as ePortfolio assessments are key components of generic courses like

UU100, a number of Education and Sociology courses as well as the Post Graduate Certificate in Tertiary Teaching (PGCTT) programme where it serves as both an assessment and training tool.

The three research questions are:

1. What is the reported effectiveness of ePortfolios in language learning?
2. What are the key concerns of the stakeholders in a language ePortfolio? implementation and how has this concern been resolved or processed?
3. What are the characteristics of an effective integration of ePortfolios into a language course/programme of study?

The findings of this study will make a positive contribution to the discussion and current language enhancement initiatives at USP.

Background

The ePortfolio has been described at its most basic level as a digital repository of one's evidence that demonstrates their learning or achievements. It is both a product and a process (Barrett, 2005; JISC, 2008). Yusuf and Tuisawau (2011) contended that there were numerous definitions of ePortfolios and that some people found it helpful that ePortfolios be defined by their various purposes.

According to the Foreign Languages and Literatures Resource Centre (FLLRC) website of the United States' Lafayette College, a language "ePortfolio is a digital archive that documents the achievement of specified goals and learning outcomes within language learning." According to the FLLRC of Lafayette College (n.d.), this Language Portfolio was seen as a "cutting-edge concept that seeks to encourage a multiplicity of approaches to assessing cultural and communicative competency." The Centre for Modern Languages of the Council of Europe says that its language ePortfolio "offers a number of features suitable for formal and informal learning and an electronic portfolio provides an ideal tool for documenting competencies and the proficiency levels acquired."

Challis (2005) while writing about and advocating the attributes of mature ePortfolios cautions the stakeholders of higher education that "the jury is still out regarding the fate of electronic portfolios which, like 'fads', are susceptible to disrepute and abandonment." He encourages educators to "be open to the promise" of ePortfolios but also "be aware of the implications for their adoption." Yusuf and Tuisawau (2011) have reported that the majority of the students viewed ePortfolios as a very useful learning tool (78%) and consider it to be an important assessment component in a course (72%).

Apart from the use of homegrown ePortfolios for learning and assessment by some language teachers in their various classrooms in the educational institutions around the world, there are two major types of language ePortfolio systems that have come to the fore in language learning in Europe (The European Language ePortfolio) and North America (LinguaFolio).

As was advocated by Glaser and Strauss (1967), a literature review is conducted only after the core categories or themes emerge. These are categories of teacher-driven, peer-driven, self-driven and content-driven facilitated engagement. In line with the Classical or Glaserian model of grounded theory (ibid), in this Grounded Theory study of language ePortfolios, the literature was viewed simply as more data to be synthesised and to be integrated into the emerging theory. The concepts and theory emerged from the data rather than from the literature review. It was found that there were three ways that the phrase facilitated engagement was used in the literature:

1. The first was a more common loose usage of the phrase in passing to imply what was being done to enable the accomplishment of some goal.
2. The second was a more focused use of the phrase in the medical field to specify a process or condition of the mind.
3. The third was the use of various permutations of the words engagement and facilitation in combination with the Theory of Engagement in the field of education.

In Moore's Transactional Distance theory (1993), he suggests that the quality and intensity of the interaction or engagement between the learner and his or her learning environment will influence performance. He talks about three key clusters of variables: dialogue, structure and learner autonomy that have also emerged out of the data of this study. The peer-driven facilitated engagement where collaboration or *dialogue* is a key component, content-driven facilitated engagement where the development of or *structuring* of content is key and self-driven facilitated engagement where self-directed learning or *learner autonomy* is a key component.

The Engaged Learning theory (Kearsley & Schneiderman, 1999) is based around the idea of "creating successful collaborative teams that work on ambitious projects that are meaningful to someone outside the classroom". These three components, summarized by the terms Relate-Create-Donate, imply that learning activities: occur in a group context (i.e., collaborative teams), are project-based, and have an outside (authentic) focus.

A closer look at the components of the Engaged Learning Theory and comparing them with the components and the processes involved in language learning and teaching with the help of language ePortfolios reveal quite a few similarities too. In the language ePortfolio, students are supposed to be able to *relate* to their L2 goals, content and peers; they are supposed to be able to *create* new artefacts or evidence of their learning as well as *donate* or publish to an outside audience. The influence of engagement theory can be seen in the design of ePortfolios in general and Language ePortfolios in particular.

Research methodology and design

This study is a qualitative meta-synthesis of case studies, following the classical grounded theory methodology. Meta-synthesis is a relatively new method for examining qualitative research (Jensen & Allen, 1996). It has been used in diverse areas such as management (Pielstick, 1998), computing (Knowles et al., 2012) and nursing (Sandelowski, 2013). This study drew extensively on classical grounded theory as the theoretical framework to conduct the qualitative meta-synthesis on existing studies on ePortfolio integration into language learning that were available online.
The following steps suggested by Scott (2009) in Grounded Theory Online were followed in designing this study too:

1. Identification of substantive area: A substantive area was identified (language ePortfolio integration into higher education).

2. Data collection: Case studies on the study area was collected.

3. Open coding**:** of data was carried out to identify discrete categories and properties and these were compared with each other in the constant comparative process.

4. Memos**:** were written throughout the entire process on the developing concepts/categories and theory.

5. Selective coding: was conducted once main categories were identified through open coding and relationships between categories were established.

6. Theoretical sampling: was determined by developing categories.

7. Sorting of memos: was conducted to find the Theoretical Code(s)

8. Literature: the literature was read and integrated with the developing theory.

9. Write up: write up of theory.

The steps above seem to show a linear process but as should be evident from the graphical representation by Fernández (2004), the process is more of an iterative and cyclical nature.

Since studies on ePortfolios have built up over the recent years, a set of criteria was specified to select appropriate research for this study. This set of criteria was used to justify the inclusion or exclusion of studies. Theoretical sampling was used to gain a deeper understanding of the analysed cases to facilitate the development of analytical frameworks and concepts to be used in the research.

Preliminary criteria included: peer reviewed journal articles, content relevance, methodological adequacy and year of publication (last 10 years). In the process of data collection, the following questions were asked of the studies on ePortfolio integration in language learning: What was the process (core phenomenon). What influenced the process to occur (causal conditions)? What actions were taken in response to the process (strategies)? What were the outcomes of the strategies (consequences)?

Electronic database

The initial search for data was systematic through the use of electronic databases. This first phase of data collection commenced with the use of computers to query research databases such as:

- ProQuest
- Eric
- EBSCOhost
- Emerald

A preliminary search in 2016, using the phrase "language ePortfolio" on the EBSCOhost database alone yielded 15,111 results and a specific search for peer-reviewed case studies on language ePortfolios yielded 105 results. After a preliminary scan through the abstracts and the application of the abovementioned criteria, the number of studies was whittled down to 86. Below is a table summarising the selection process for the initial primary case studies.
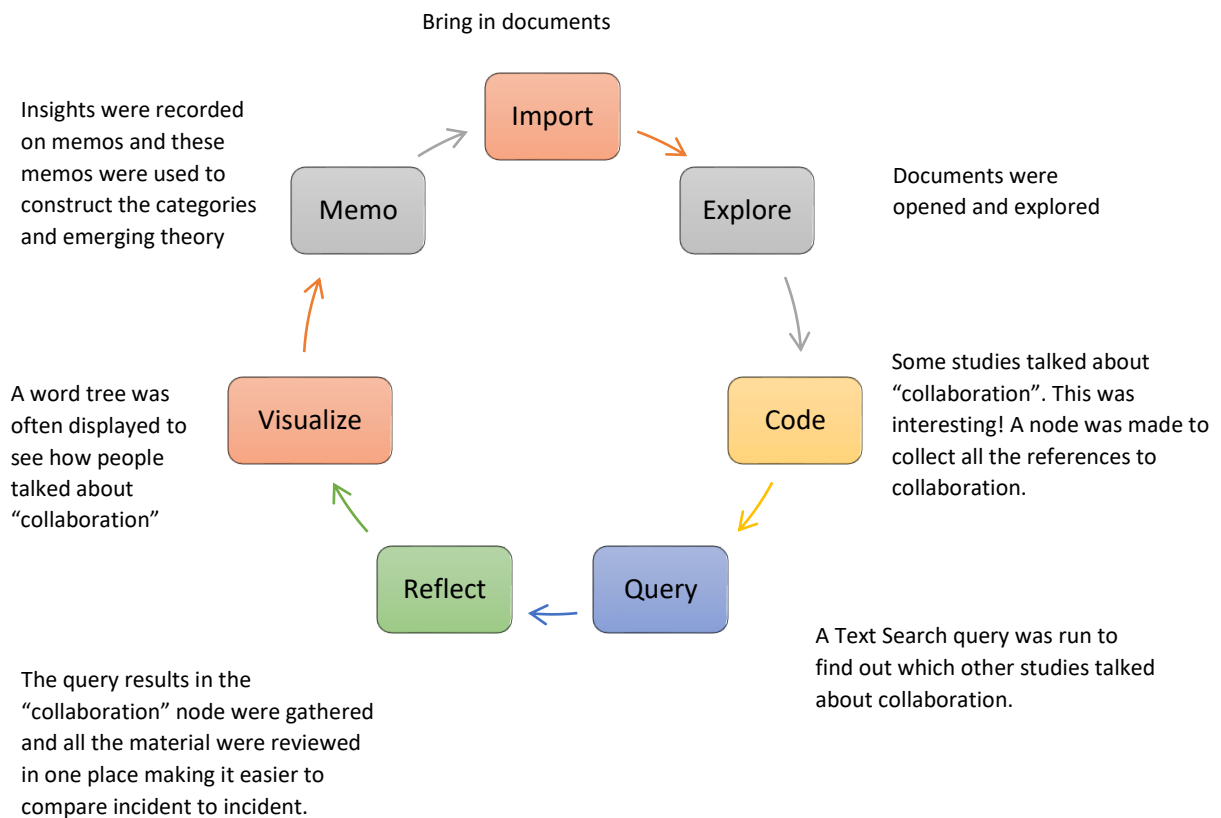
Table 1
Summary of database search

Database	Ebscohost	Proquest	Eric	Taylor & Francis online (25 Databases)	Google Scholar
Search terms	Language ePortfolio	Language ePortfolio	Language ePortfolio or portfolio	Language ePortfolio	Language ePortfolio (in title)
Filters	Full text, Scholarly (peer reviewed) Journals	Full text, Scholarly (peer reviewed) Journals	Full text, Scholarly (peer reviewed) Journals		
Results	1,037 articles Academic Journals (347) Reviews (7) **Total=1391**	Scholarly Journals ((300 Trade Journals ((5 **Total=305**	**Total=780**	**Total=12609**	**Total=26**
Filters applied	2007-2016 Case study/ Research report/ ePortfolio Full text	2007-2016 Case study/Research report/ ePortfolio Full text	2008-2017 Case study/Research report/ ePortfolio Full text	2007-2017 Full Text	2007-2017 English
Application of Criteria	Review of Abstract	Review of Abstract	Review of Abstract	Review of abstract	Review of Abstract
Results	**20**	**8**	**52**	**2**	**23**

Theoretical sampling

The principle of theoretical sampling was used whereby sampling was driven by the emerging theory from the iterative process of coding and analysis of data (Breckenridge & Jones, 2009). Leads were followed as they arose in the data focusing the ongoing collection of data to refine and integrate the theory (Glaser & Strauss, 1967).

Analysis of Data using Nvivo 11

Both the inductive and deductive approaches to analysis was used in this study. The study started with the inductive approach when conducting open coding trying to establish some theoretical ideas and concepts from the collected data and further on in the analysis process used a more deductive approach when formulating a provisional hypothesis and carrying out theoretical sampling (Corbin & Strauss, 2008). The coding software NVivo 11 was used as a tool to analyse data for this study. Below is a representation of the type of iterative processes that was involved.

Bring in documents

Insights were recorded
on memos and these
memos were used to
construct the categories
and emerging theory

Memo

Import

Explore

Documents were
opened and explored

A word tree was
often displayed to
see how people
talked about
"collaboration"

Visualize

Code

Some studies talked about
"collaboration". This was
interesting! A node was made to
collect all the references to
collaboration.

Reflect

Query

The query results in the
"collaboration" node were gathered
and all the material were reviewed
in one place making it easier to
compare incident to incident.

A Text Search query was run to
find out which other studies talked
about collaboration.

Figure 2: Coding and analysis process in Nvivo
Adapted from Using Nvivo for Qualitative research, (n.d). http://help-
nv10mac.qsrinternational.com/desktop/concepts/using_NVivo_for_qualitative_research.htm

Constant comparative model

This study drew heavily on Glaser's (1969) constant comparative model of data analysis. Data
analysis started with open coding and developed categories out of the data. A process of moving
back and forth between data collection and data analysis enabled the process of data analysis to
drive data collection. The process involved three types of comparisons:
(1) incidents were compared to other incidents for the emergence of concepts,
(2) concepts were compared to more incidents for further theoretical elaboration, saturation,
and densification of concepts, and
(3) concepts were then compared to concepts for their emergent theoretical integration (Glaser
& Strauss, 1967).

Coding questions

The following questions as suggested by Glaser (2004) were asked throughout the coding process:

1. What is this data a study of?
2. What category does this incident indicate?
3. What is actually happening in the data?
4. What is the main concern being faced by the participants? and
5. What accounts for the continual resolving of this concern?

Stage 1: Open coding

The abstracts of the sampled studies were read as a whole with notes written at the end. The researcher looked at what the text was about. Major themes were determined and data labeled accordingly through the use of the coding tool in Nvivo. Unusual issues and events were also noted. The 86 studies were also grouped by region to assist with reporting of findings, in particular for answering the question of effectiveness of language ePortfolios for language learning (Bryman, 2008).

The studies were read again after the initial first reading and the marking and highlighting of texts were undertaken. At this stage, initial codes were reexamined to further focus the data. Marginal notes or memos were made and codes given definitions and labels. Some of the more frequent codes that were appearing were categorized into collaborative learning, autonomous learning, reflection, feedback and language writing as in Figure 2:
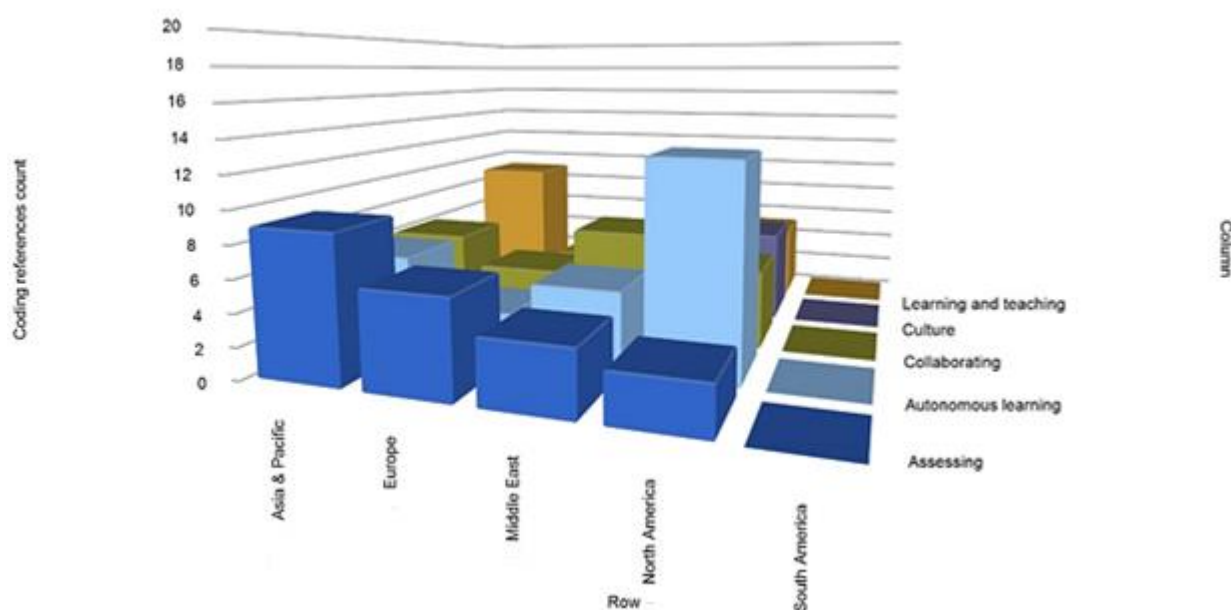
Figure 3: Categories by region from Nvivo11

Also, at this stage word frequency queries were conducted with Nvivo to determine or confirm the most prevalent words or themes in the data. These queries were also carried out on codes to determine the most associated or related words/themes within a code. Key words were also highlighted and any analytic ideas suggested by the studies noted in the memos.

Stage 3: Memoing

Nvivo was used initially to write memos but Microsoft word as well as Onenote were used more to write up memos throughout the entire process as formatting was not available in Nvivo (Figure 3). Method memos recorded developments and issues encountered with the method of the study and helped with the writing up of the methodology. More importantly, theoretical memos were written about the codes developed and their potential relationship to other codes as well as incidents (Scott, 2009).

| **Memo on Collaborative Development** |
| Facilitating Collaborative Development: (ePortfolio activities: showcasing and reflection)
Some practitioners of language ePortfolios are employing or supporting the collaborative development of products (like games for example) by L2 learners to enhance their language learning capabilities. These practitioners provide and facilitate opportunities for shared experiences and recording as well as showcasing and collaborative and autonomous reflections on these experiences and products.

•   Development
•   Modelling
•   Mentoring
•   Showcasing
•   Reflection (social and peer) |

Figure 4: Sample memo from Nvivo11

Stage 4: Selective coding and theoretical sampling

Through the previous stages and processes of open coding and memoing, the main concern of the users of language ePortfolios became clear. The majority of language ePortfolio users were concerned about the transfer of self-directed or autonomous learning skills to their L2 students. To resolve this concern, the users were involved in what this study has termed facilitated engagement. The phrase seemed to capture what they were doing through their use of language ePortfolios. Once the core category of facilitated engagement had been identified, open coding stopped and selective coding took over whereby coding was only done for the core category and related categories. The four related categories that were discovered from the data were: Teacher-driven facilitated engagement, peer-driven facilitated engagement, self-driven facilitated engagement and content-driven facilitated engagement.

Now, after the core category and related categories were determined, theoretical sampling took place whereby further sampling was directed by the developing theory. Case studies or further data was consulted to learn more about and help strengthen facilitated engagement and other related categories (Scott, 2009).

Table 2:

Coding Process from Nvivo11

Raw data	Open Coding	Selective Coding	Theoretical coding
"They were also asked to review their peer's written tasks in groups of two. Moreover, the students consulted their teacher to receive comments in a one-to-one conference after the class."(Ghoorchaei, Tavakoli, & Ansari, 2010, p. 82)	Reviewing peer tasks Sharing of written work Collaborative teaching and learning	Peer assessing and interacting Collaborating	Peer-driven facilitated engagement
Then, at home, the students revised and redrafted their essays based on their own reflections and the teacher's and peer's comments. In short, the portfolio project required that students write essays of different genres. They revisited, reflected on and revised the essays in response to peer and teacher feedback during the term." (Ghoorchaei et al., 2010)	Peer comments Foster the development of inclusive communities of learners (COP)	Learning community model Facilitating review of feedback	
Although the number of submitted reflection sheets did not correlate with the increase in the students' test scores, the data suggests that group learning and reflection had strengthened students' learning motivation. (Ghoorchaei et al., 2010)	Reflection on work and peer and teacher feedback	Reflection	

In Figure 4, a screen capture of the Nvivo provides a sample of the coding process from raw data to core category. In the right panel is the raw data from the PDF of one of the primary studies. It has been coded through open coding under "review of peer tasks" and "collaborative teaching". Both of the above-mentioned open codes are then categorized into the categories, "peer assessing and interaction" and "collaborating" under the process of selective coding. In the process of theoretical coding, we compare these later categories with other categories and cases to get to peer-driven facilitated engagement.
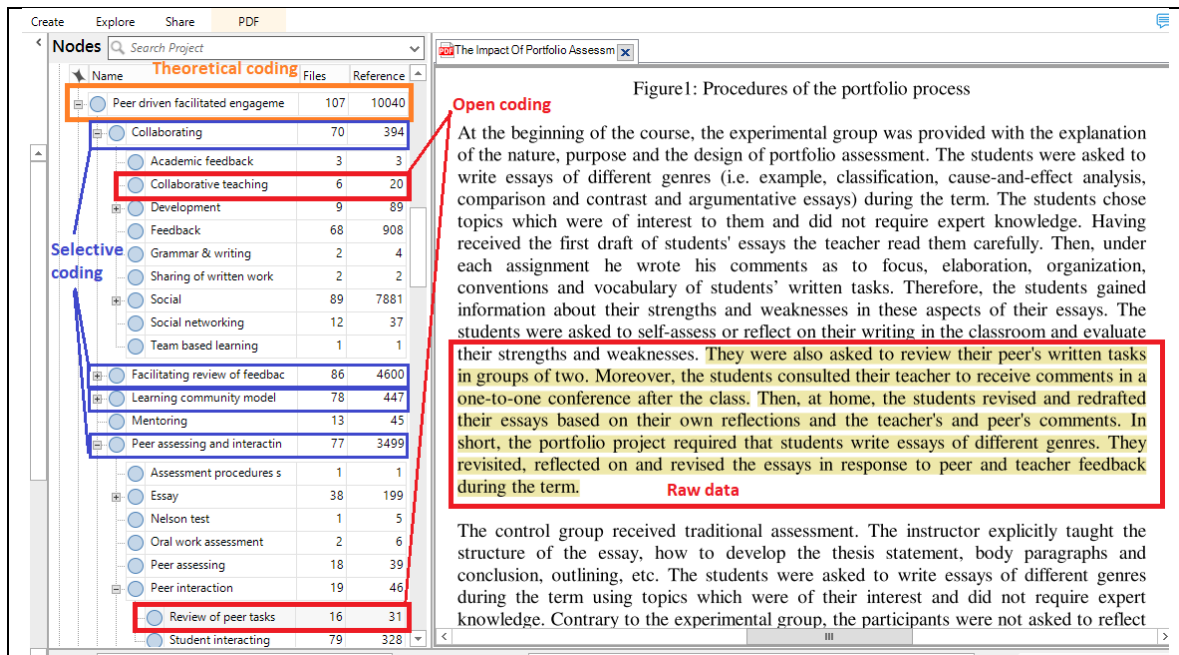
Figure 5: Nvivo screen capture showing the coding process.

Stage 5: Sorting of Memos and finding general theoretical ideas/codes

The writing and sorting of memos happened concurrently in this study as concepts were emerging from the saturated categories/themes. Interpretations were attempted on the coded and analysed data. The questions asked at this stage included: What are the key ideas or concepts of significance from the data? Interpretations were attempted on interconnections between codes. The concept-mapping tool from Nvivo 11 was used to visually capture some of these interconnections as shown in figure 5.
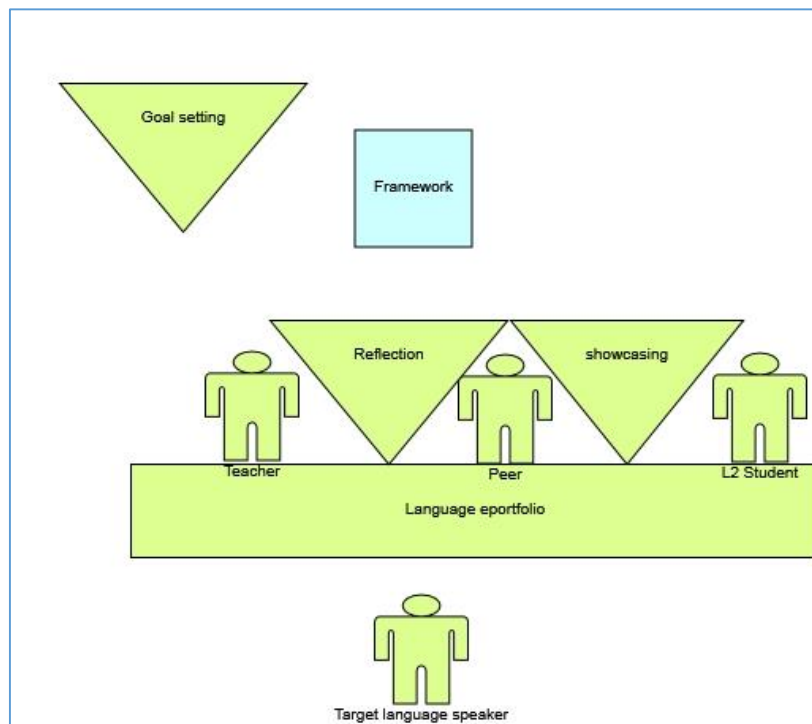
Figure 6: Sample of a memo: Draft Attempt to Map theme of Collaboration in Nvivo 11

Collaborative learning was the major theme that was developed into the sub-category of peer-driven facilitated engagement. Autonomous learning was developed into the sub-categories of self-driven facilitated engagement and content-driven facilitated engagement.

Stage 6: Reading the literature

In this stage before the write up of the theory, the relationship between codes to research questions and literature were examined and interpreted. Theoretical sampling played an important part at this stage as the components of the theory (core category and sub-categories) being developed directed the search for literature to saturate the core category and related categories.

A quick search on Google Scholar revealed the various ways in which people were using the phrase "facilitated engagement" which was the core category of this study.

Stage 7: Write up of theory

At this seventh stage, an attempt at writing up a basic theory—as opposed to a full-fledged substantial theory—was embarked upon due to the scope of the study and limitations of time and resources. As has been explained previously under stage 5, the constant process of memo writing throughout the study would have provided valuable input into this final stage. The theory would have been then compared to more incidents and would have involved taking out irrelevant properties or categories in an attempt to delimit the theory. This stage would also have involved ensuring that the analytical framework formed a systematic substantive theory and was reasonably an accurate statement of the interactions and processes in the field of language learning with ePortfolios. Finally, this stage would have involved the writing of the theory in a form that others going into the same field could use (Ke & Wenglensky, 2010).

Results and Discussion

The analysis of data revealed different perceptions with respect to the effectiveness of ePortfolios in language learning, but the majority concluded that language eportfolios were effective for language learning. The core category (facilitated engagement) that emerged from the Nvivo data analysis highlights a probable theoretical framework which could guide educators to decide on their use of ePortfolios for language learning for their particular context.

Effectiveness of ePortfolio for language learning and key concerns

The figure 6 reveals an overwhelming majority (85%) considered ePortfolios were effective for language learning with a very small proportion (2%) with an opposite view of ePortfolios.

Are e-portfolios effective for L2 learning?

Not applicable 2%

Negative 1%

Mixed 12%

Positive 85%
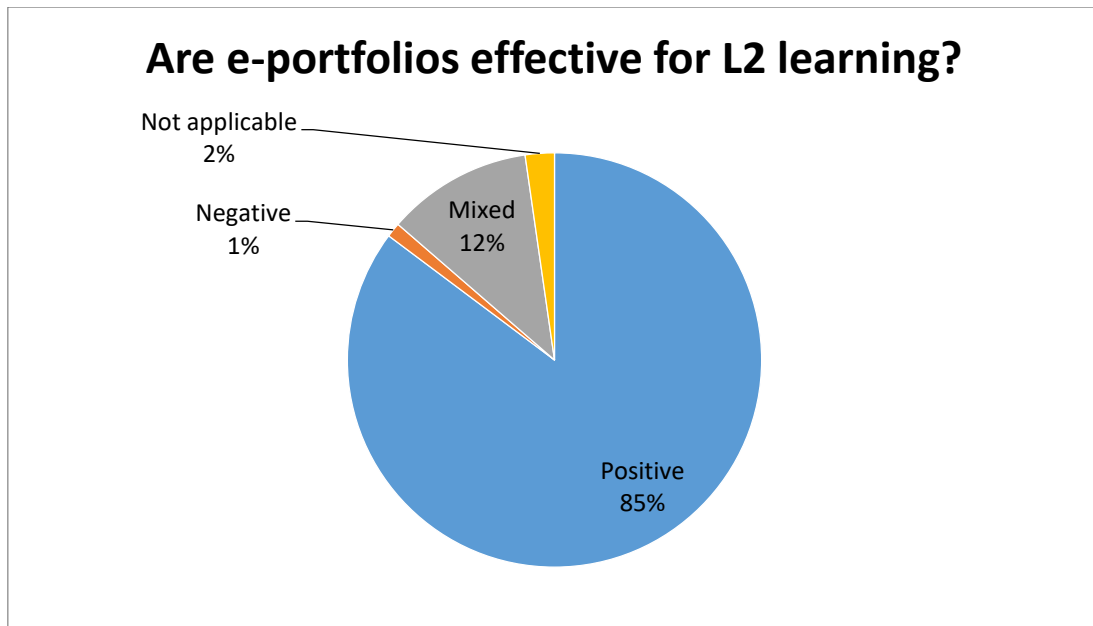
Figure 7: Summary of 86 studies on the effectiveness of language ePortfolios

Out of 86 studies, there was only one (1) study for which the balance of the arguments for and against came out negative about the effectiveness of ePortfolios for language learning. Ten (10) of the studies reported mixed results while a total of seventy-five (75) of the studies reported positive results from the use of ePortfolios for language learning. Two of the studies did not make judgments on the effectiveness of ePortfolios in language learning.

Table 3: Effectiveness of ePortfolios

Effectiveness of ePortfolios	Number of studies	Percentage
Positive	73	85%
Negative	1	1%
Mixed	10	12%
Not applicable	2	2%
Total	86	100%

The process included the coding of negative and positive claims regarding effectiveness (Figure 7).

	A : Region	B : Sector	C : Effectiveness
1 : A Comparison of the Effects of Reflective Learnin...	Middle East	Tertiary	Postive
2 : A Digital European Self-Assessment Tool for Stud...	Middle East	Tertiary	Postive
3 : A model for new linkages for prior learning assess...	Europe	Tertiary	Postive
4 : A Qualitative Research on Portfolio Keeping in En...	Middle East	Tertiary	Postive
5 : A Survey on EFL Teachers' Assessment Methods...	Asia & Pacific	Tertiary	Postive
6 : An Approach to Integration- The Integration of La...	Europe	Tertiary	Postive
7 : An Attempt to Raise Japanese EFL Learners' Pra...	Asia & Pacific	Tertiary	Mixed
8 : An Evaluative Case Study~ A Portfolio Assessme...	Middle East	Tertiary	Postive
9 : Analysing written production competence descript...	Europe	Tertiary	Postive
10 : Assessing Student Writing~ The Self-Revised E...	North America	Tertiary	Postive
11 : Assessing the language of young learners	Europe	Primary & High school	Mixed
12 : Authoring Teacher Development in a Graduate ...	Asia & Pacific	Tertiary	Postive
13 : Bridging the Gaps~ Multimodal Theme-Sets in t...	North America	Tertiary	Postive
14 : Can E-Portfolio Improve Students' Readiness to ...	Middle East	Tertiary	Postive
15 : Cross-university collaboration for work-place lea...	Europe	Tertiary	Postive
16 : Cultural Transfer as an Obstacle for Writing Well...	Middle East	Tertiary	Postive
17 : Design Process for Online Websites Created for ...	Middle East	Tertiary	Mixed
18 : Determining the Feasibility of an E-Portfolio Appl...	Middle East	Tertiary	Mixed
19 : Developing a Conceptual Framework~ The Cas...	Europe	Tertiary	Postive
20 : Developing a Portfolio Assessment Model for th...	Asia & Pacific	Primary & High school	Postive
21 : Electronic portfolios~ A blueprint for deep langu...	North America	Tertiary	Postive
22 : Electronic Portfolios~ A Demonstration of Multi-l...	North America	Tertiary	Unassigned
23 : Embedding Key Transferable Employability Skill...	Europe	Tertiary	Postive
24 : Embracing the learning paradigm to foster syste...	North America	Tertiary	Postive
25 : Encouraging Self-Directed Group Learning throu...	Asia & Pacific	Tertiary	Postive
26 : E-xperience Erasmus~ Online Journaling as a T...	Europe	Tertiary	Postive
27 : Experiences with Autonomy~ Learners' Voices o...	North America	Primary & High school	Postive
28 : Fostering EFL Learners' Autonomy in Light of Po...	Middle East	Tertiary	Postive
29 : From a Social Digital Identity to an Academic Di...	North America	Tertiary	Postive
30 : From Action to Insight~ A Professional Learning ...	North America	Work & Community	Postive
31 : Global Trends and Local Realities~ Lessons abo...	Europe	Tertiary	Postive

Figure 8: Nvivo Screen capture of effectiveness of language ePortfolios (a sample).

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A substantial number of the 86 case studies in this research were explicit in reporting (Figure 8) the usefulness of ePortfolios for language learning, while two of the studies did not consider the issue of effectiveness and were coded as not applicable. Moreover, a number of studies did not explicitly consider the effectiveness question thus, judgements were also made on the positive and negative claims regarding ePortfolios made in these studies. In addition, their recommendations for future use of this tool were also considered. If studies recommended the use of ePortfolios in their conclusions, they were classified in the positive category.
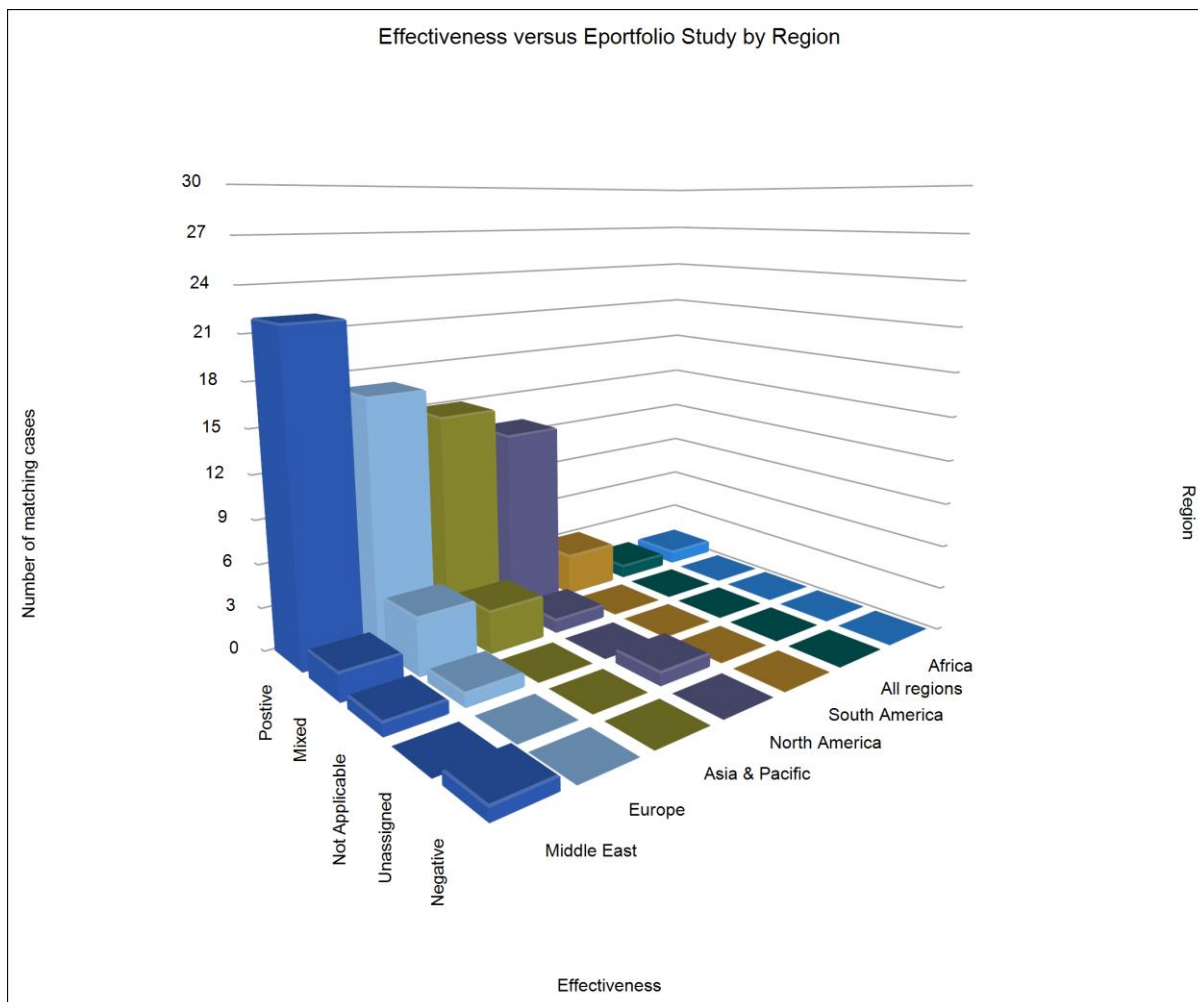
Figure 9: Effectiveness of language ePortfolios by region from Nvivo11

Mixed reviews

For the studies that had mixed reviews of language ePortfolios, one of the common features was that students actually enjoyed working with ePortfolios but often disliked the amount of work and time that were involved. The quotation below seems to capture this dichotomy in action.

> "In reply to the first question, which examined the participants' opinions with respect to the use of portfolios, their satisfaction with the use of portfolios to develop their oral skills was positive. Moreover, they claimed that they had felt comfortable when using portfolios, even though their workload in such a short period of time was actually their main objection." (Xamaní, 2013, p. 11)

In a study from Turkey, although the study was more on the student's opinions of the design of their online language learning materials and not on the effectiveness of ePortfolios per se, it was reported that students found the materials

for reading, writing and listening objectives of their language course sufficient yet, had mixed views on the effectiveness of the design of their materials to satisfy the speaking objectives of the course.

Negative Reviews

Only one of the studies had clearly negative arguments regarding the effectiveness of ePortfolios for language learning, while almost all studies had both negative and positive things to say about language ePortfolios. Below are some of the negative statements with respect to ePortfolio activities and processes. Some of the challenges are not specific to ePortfolios but have to do with different aspects of language learning activities such as essay writing, for example, which would still be a challenge even if language ePortfolios were not involved:

- Portfolio keeping took too much time and was tiring for others,
- Some students thought that Portfolio keeping prevented them from creative writing.
- Some students found giving feedback to their peers as the most difficult part of portfolio keeping,
- Some students found it a challenge to write the second and third drafts of their essays in their ePortfolios—particularly to find the appropriate words,
- Some students found it challenging to deal with negative comments.

Like the above, some of the quotes highlight specific challenges students and teachers face with language ePortfolios. However, a fair number of these quotes have more to do with the challenges of language learning in general than with language ePortfolios per se. Also, some issues that Aydin (2010) noted while discussing workload and time concerns are referring to paper portfolios instead of an electronic portfolio. Paper portfolios can demand more work and resources from students than electronic ePortfolios. The challenges reported by students were related to workload and time concerns; lack of Teacher Training; student misconceptions; conflict with the established curriculum; issues with self-assessment; extraneous variables (e.g. control group accessing internet for their activities and affecting results); and finally a lack of motivation and inflexible structures experienced by students in higher education.

Positive Reviews

It was interesting to find that the majority of primary studies in this meta-synthesis had positive statements about language ePortfolios as they were considered an effective learning tool with opportunities at hand. The positive comments focused on different aspects of skills, knowledge and opportunities for the students and teachers: Out-of-class language learning (OCLL) and reading proficiency; Feedback; Learning and Teaching; Assessing; Collaborating; Autonomous learning; Reflecting; Culture; Evaluation and research; Planning and Designing; Showcasing and Documenting; Awareness; Managing workloads; Supporting; Goal supporting; Accrediting; Practicing; Environmentally friendly; Employing; Perceptions; Scaffolding and Templates; Grammatical accuracy.

Facilitated Engagement

Facilitated engagement emerged as the core category with some key verbs in Figure 9 below indicating what comprises facilitated engagement.

Figure 10: Top 15 words from all data coded under category Facilitated Engagement (Nvivo11)

There are two parts to the core category of facilitated engagement: one has to do with facilitation and the other with engagement. Facilitated engagement is essentially the designing, developing, implementation and evaluation of learning outcomes, teaching strategies and spaces for the engagement of language (L2) students in learning. This facilitation should result in engagement that involves interaction of L2 learners with the language and culture, resources, activities, peers, assessment, assessment feedback and learning process.

Specifically, for the majority of the 86 cases, it meant facilitating engagement of the L2 students, besides other things, the components and processes of his or her language ePortfolio. In particular, teachers are concerned about the ability of their students to engage with instructions, assessments and teachers (and peers) and with the feedback to their assessed activities. The lack of engagement with feedback cited by various studies and language experts means that there is, for example, very slight to no improvement of students writing skills with the sum result of students continuing to make the same mistakes from primary and secondary schools right up to tertiary level.

| Teacher-driven | Peer-driven | Self-driven | Content-driven |

Facilitation ← → Engagement
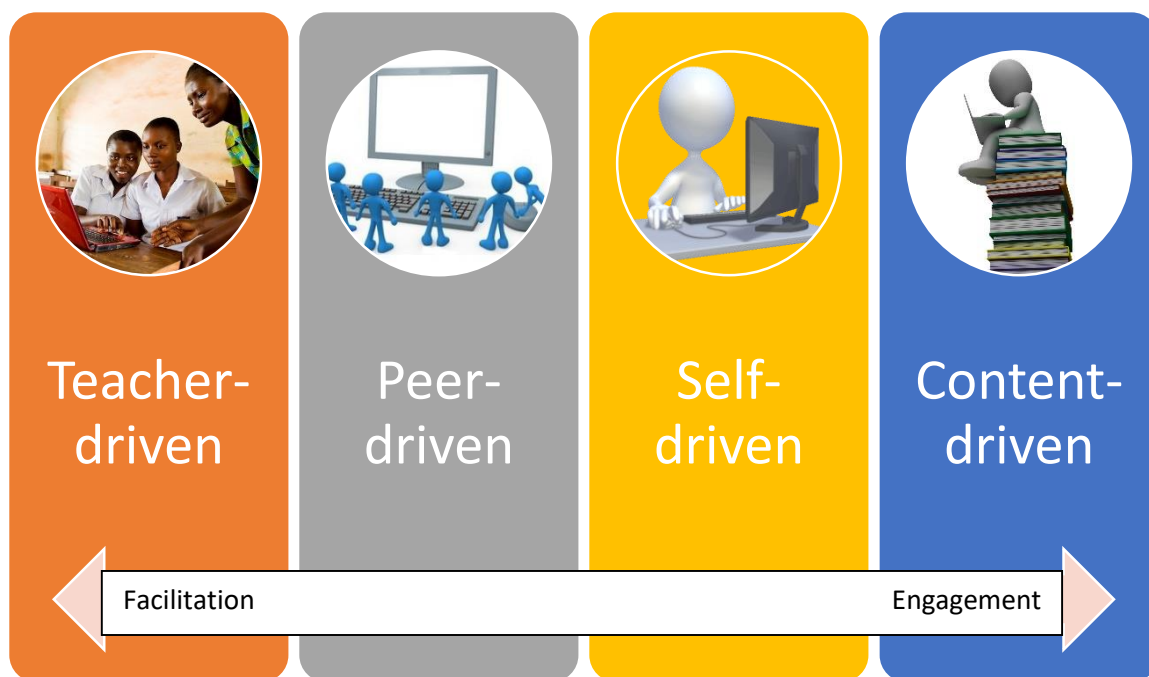
Figure 11: Phases of Facilitated engagement

As language learning moves from the teacher-driven phase to being content-driven, facilitation by the teacher should decrease as student engagement increases. The four sub-categories or sub-themes that emerged from the data are:

1. Teacher-driven facilitated engagement;
2. Peer-driven facilitated engagement;
3. Self-driven facilitated engagement; and
4. Content-driven facilitated engagement.

These sub-categories are essentially properties of the core category and are not mutually exclusive. Most instances of formal language learning involving a language ePortfolio, tend to belong to one of the first three sub-categories depending on whether the teacher, peer or self is directing, regulating and assessing the learning. All three variants can exist in the same formal language course at the same time depending on how far along the self-directed learning continuum the students in the cohort are located. The fourth sub-category of content-facilitated engagement we have allocated specifically to informal language learning and does not involve a teacher or formal course.

Facilitation

Facilitation is leadership without reigns and sums up the new role of the teacher as they move from the face to face stage to being a guide, on the students' side, in the online environment. Teachers and administrators can facilitate through the content of their language courses by the way they design and develop the language competencies and standards (e.g. CEFR and ELP) as well as the design, development and implementation of resources, assessment activities and virtual spaces such as the language ePortfolio and other learning management systems (LMS). Classroom and online learning and teaching are typically conducted by teachers and support staff members' skill and knowledge of design, development, coordination, cooperation, organization and motivation. These roles however, can be shared with students and their peers through collaborative and autonomous learning.

The data suggests that educators need to create opportunities and facilitate experiences that will develop the students' capacity to reflect on their practice (Frick, Carl & Beets, 2010). This facilitation of opportunities and experiences not only by teachers but support staff such as learning designers, can be considered as a key factor to promote learner autonomy

and self-directed learning. Mirici and Herguner (2015) suggest that this facilitation of experiences for reflection by stakeholders can develop metacognitive learning strategies in language learners.

Engagement

What is being observed in the data is the continuous attempt by administrators and teachers to, through the language ePortfolio, facilitate students' engagement with their language assessment activities such as for example, revising written assignments and engaging in particular with the feedback to assignments. Engaging in the above processes and in particular with the feedback from teachers and peers are seen as a key part of learning and teaching with language ePortfolios.

Figure 12: Top 10 themes for data coded under the node, Engagement from Nvivo11

It is clear from the data that ePortfolios can enhance engagement with:
- other learners (peer interaction or collaboration)
- teaching (language competencies)
- assessment activities
- feedback
- reflections
- the process of language and lifelong learning.

Teacher-driven facilitated engagement

Teacher-driven facilitated engagement is the design, development and use of language ePortfolios with formal language learning classroom activities that ensures engagement with L2 content, assessment activities and assessment feedback. The learning and teaching process in this sub-category is predominantly dominated or driven by the teacher and has as its goals the acquisition of a second language as well as the acquisition of autonomous or self-directed learning skills.

Figure 13: Top 10 words for data coded under Teacher-driven Facilitated engagement from Nvivo11

Two studies made suggestions for reducing workloads along the lines already mentioned above such as using peer review or assessment as opposed to the teacher doing all the assessments:

> …reduce portfolio entries to a number that teachers can manage, depending on their time and energy… pair[ing], instead of individual, portfolios would both halve the number to be graded and encourage peer check and review (Yang, 2003). …teachers may use peer review, engaging students to check grammar, providing answers for comprehension questions, and sharing their thoughts on issues… (Lo, 2010, p. 90).

One of the results of teachers implementing authentic assessment practices in the classroom and facilitating language ePortfolio assessments is students becoming motivated, independent learners who know and use essential concepts, learning skills, and obtain work habits. Throughout the performance of their formative or summative learning activities, learners are expected to perform an activity, produce a response to their peers, or create an idea.

Peer-driven facilitated engagement

Peer-driven facilitated engagement refers to the process of engagement in a language ePortfolio and related activities in a language course that can be facilitated initially by the teacher, but that are driven largely by peers and is essentially collaborative in nature.

Figure 14: Top 10 themes for peer-driven facilitated engagement from Nvivo11

Peer-driven facilitated engagement gives rise to a number of benefits as well as its own challenges. When peer-driven facilitated engagement works well in a language class with the support of the language ePortfolio and associated group activities, it can:

- enhance a sense of community (Khales, 2016; Kristmanson, Lafargue, & Culligan, 2011),
- lead to peer comments enhancing a sense of peer dialogue,
- raise learners' awareness of their own strengths and weaknesses,
- encourage collaborative learning and,
- foster the ownership of text (Tsui & Ng, 2000).

Moreover, the data suggests that collaborative activities such as collaborative writing, group learning, group reflection and peer feedback that can and do happen in language ePortfolios can result in the following:

- strengthen students' learning motivation,
- encourage critical reasoning through peer feedback (Berg, 1999),
- produce better texts in relation to "task fulfilment, grammatical accuracy, and complexity" (Storch, 2005, p. 153),
- In Blackstone, Spiri, and Naganuma's (2007, p. 1) study an application of a "blogging buddy" system also facilitated "greater learner interaction and reflection on skills development."

In their study, Tsui and Ng (2000) reinforced the role of peer comments and highlighted the potential of peer review in enhancing writing competency.

Self-driven facilitated engagement

This is facilitated engagement or the use of language ePortfolios in language learning that is driven by the self (student) and often used with students who have developed some skills of autonomous learning. In this self-driven category, learning language ePortfolios can be part of formal courses. However, for the purposes of this study, this category has been distinguished from the informal content-facilitated category which does not involve teachers at all.

Figure 15: Top 10 themes for self-driven facilitated engagement from Nvivo11

This is one of the most desirable output whereby learners are self-driven and independent as evidenced in some of the studies:

- The facilitation of assessments is not the final goal of language ePortfolios that are self-directed but effective learning is (Hemmati & Soltanpour, 2012).
- Self-driven facilitated engagement promotes learner autonomy, self-directed learning and facilitates developing metacognitive learning strategies (Mirici & Herguner, 2015).

Content-driven facilitated engagement

Content-driven engagement refers to the type of learning and teaching that is driven largely by the content of the language ePortfolio (e.g. ELP) and associated documents (e.g. CEFR). There is no teacher or administrator involved except perhaps at the initial stage of the design and development of the language ePortfolio and associated documents such as the CEFR.

A typical content-driven facilitated engagement is when, for example, a university student decides to informally learn a new language and uses a combination of a language application and the European Language EPortfolio (ELP) to self-assess, document and plan his/her language learning journey. If he/she is in the USA, he/she may use the Linguafolio or if he/she is in Europe, he/she may use a combination of the "Can do" statements of the CEFR and the ELP to self-assess and set goals. The student may then use a language app (e.g., Dualingo or Babel) and be involved in language immersion activities to teach himself a second language and continually return to the ELP to self-assess his/her language competencies and document the learning journey.

Figure 16: Top 10 themes for content-driven facilitated engagement from Nvivo11

The data seems to show that content-driven facilitated engagement does work. That a language learner if motivated enough and armed with the prerequisite SDL skills can successfully acquire competencies in a new language with the use of just a combination of a language ePortfolio and their chosen method of language acquisition. The three parts of the language ePortfolio (passport, language biography and dossier) should assist him/her in evaluating the language competencies, plan learning as well as monitor it.

Literature review

As was advocated by Glaser (1967), a literature review was conducted only after the data has emerged and core categories or themes were established: the categories of teacher-driven, peer-driven, self-driven and content-driven facilitated engagement. In the course of the literature review, it was found that there were three ways that the phrase facilitated engagement was used in literature. The following are the three ways that the phrase facilitated learning or variations of the phrase was used:

➢ The first was a more common loose usage of the phrase to imply what was being done to enable the accomplishment of goals.
➢ The second was a more focused use of the phrase in the medical field to specify a process or condition of the mind.
➢ The third way was the use of various permutations of the words engagement and facilitation in combination with the Theory of Engagement in the field of education.

Although the phrase facilitated engagement was observed in widely different fields such as management and community work, it seemed to be used more predominantly (at first glance at least) in the fields of medicine and education, for example:

> "This group facilitated engagement and monitored difficulties across the workforce, fostering local ownership and addressing emerging problems." (Bell et al., 2014:1)

It is interesting to note that one study (Forchuk et al., 2015) used the phrase *facilitated engagement* in relation to technologies and social media enhancing the lives of participants—in this case mental patients who were part of that particular study.

A preliminary survey of the literature showed that in areas such as the field of education, the theory of engagement has been well established and is now a key component of online or technology assisted learning. Key components of this model were the engagement of students with the learning materials, learning activities and learning community.

In Moore's Transactional Distance theory (1993), he suggests that the quality and intensity of the interaction or engagement between the learner and his or her learning environment will influence performance and the three key variables are dialogue, structure and learner autonomy. These three key variables are similar to three key categories that have emerged out of the data of this study, namely: peer driven facilitated engagement where collaboration or *dialogue* is a key component, content-driven facilitated engagement where the development of or *structuring* of content is key and self-driven facilitated engagement where self-directed learning or *learner autonomy* is a key component.

In 1999, Kearsley and Schneiderman came up with the Engaged Learning Theory. The theory is based around the idea of

> "creating successful collaborative teams that work on ambitious projects that are meaningful to someone outside the classroom." These three components, summarized by the terms Relate-Create-Donate, imply that learning activities: occur in a group context (i.e., collaborative teams), are project-based, and have an outside (authentic) focus." (Engagement theory, 2017)

A closer look at the components of the above Engaged Learning Theory and comparing them with the components and the processes involved in language learning and teaching with the help of language ePortfolios will reveal quite a few similarities too.

In the language ePortfolio, students are supposed to be able to *relate* to their L2 goals, content and peers; they are supposed to be able to *create* new artefacts or evidence of their learning as well as *donate* or publish to an outside audience. The influence of engagement theory can be seen in the design of ePortfolios in general and Language ePortfolios in particular. It should not be surprising that any investigation of the human interactions around this educational tool should uncover patterns of the facilitation of engagement in the data as we have indeed discovered in this study.

Conclusion

The study set out to use the classical grounded theory approach to undertake a qualitative meta-synthesis of studies by various practitioners on language ePortfolios over the past decade. The analysis of the data shows that an overwhelming majority of the studies have reported positively on the effectiveness of language ePortfolios on language learning particularly in the area of written competencies with perhaps less data available on its effectiveness in oral competencies. Short of developing a full theory, due to the scope and time limitations of this study, it has been able to, at least, put forward core themes or categories. Wu and Beaunae (2014) recognized the limitation of time and fund even for doctoral studies underpinned by grounded theory. Overall, this study has been able to explain the core category of facilitated engagement with its related four sub-categories or phases and establish some linkages or relationships. Grounded theory proponents such as Timonen, Foley, and Conlon (2018, p. 4) seem to suggest that not all

grounded theory studies will result in a full-fledged theory. They contended "that significant progress toward constructing categories, and spelling out links between them, with the view to achieving conceptual clarity, is a sufficient (if not necessarily the ideal) outcome for a GT study." The study affirms the effectiveness of language ePortfolios for language learning which was a key aim of this research.

Recommendation and Implications

The ideas contained in the core category of this grounded theory study and its sub-categories of teacher-driven, peer-driven, self-driven and content-driven facilitated engagement may provide a conceptual guide for language teachers who would want to include language ePortfolios such as the ELP or the LinguaFolio in their language teaching tool bag whether they are teaching face-to-face or online.

Considering that the majority of the 86 studies reported positively on the effectiveness of language ePortfolios in language learning, the University of the South Pacific might want to consider taking the lead in adapting the ELP or the LinguaFolio for the region's language learning needs.

The English language initiatives at the University of the South Pacific might want to consider the use of language ePortfolios in its many initiatives as both a record and repository of students' language learning and achievements. In addition, language ePortfolios can be used as a pedagogical tool to help students self-assess their English language competencies, set goals, monitor, plan and reflect on their English language learning. There are underutilised features for goal setting and planning in the current USP ePortfolio management system called Mahara which could be utilised for such activities. If this was considered workable, we would suggest starting with an implementation of the language ePortfolio of the content-driven variety which would need the least work to get students started as all that will be needed is to make the ELP or a USP variant of it available for all USP students. Students can start their own language ePortfolio as a PDP (personal development portfolio) to improve their English language skills. They can have their peers assess them if necessary, as these ePortfolios will not be graded by teachers as content-driven facilitated engagement does not normally involve teachers and is associated with informal learning. Teacher, peer and self-driven language ePortfolios will need a bit more work to set up, as they will essentially be a part of the formal language learning curriculum at USP.

References

Aydin, S. (2010). A Qualitative research on portfolio keeping in English as a foreign language writing. *Qualitative Report*, *15*(3), 475-488.

Barret, H. C. (2005). *White Paper: Researching electronic portfolios and learner engagement*. Retrieved from http://ww.w.electronicportfolios.org/reflect/whitepaper.pdf

Bell, K. E., Hall, F., Pager, S., Kuipers, P., & Farry, H. (2014). Developing allied health professional support policy in Queensland: a case study. *Human Resources for Health*, *12*(1), 57-65.

Berg, E. C. (1999). Preparing ESL students for peer response. *Tesol Journal* 8(2), 20-25.

Breckenridge, J., & Jones, D. (2009). Demystifying theoretical sampling in grounded theory research. *Grounded Theory Review*, 8(2), 113-126.

Bryman, A. (2008). *Social Research Methods* (3rd Ed) Oxford University Press.

Challis, D. (2005). Towards the mature ePortfolio: Some implications for higher education. *Canadian Journal of Learning and Technology, 31*(3), 1-12.

Clark, D. (2011). E-portfolios – 10 reasons why I don't want my life in a shoebox. Retrieved from http://donaldclarkplanb.blogspot.com/2011/03/e-portfolios-7-reasons-why-i-dont-want.html (Accessed: 16 March 2017)

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research* (3rd ed.). Thousand Oaks: Sage.

Dick, B. (2000). Grounded theory revisited. Retrieved from http://www.aral.com.au/resources/grounded.html

Engagement theory. (2017, March 1). EduTech Wiki, A resource kit for educational technology teaching, practice and research. Retrieved 23:16, November 9, 2017 from http://edutechwiki.unige.ch/mediawiki/index.php?title=Engagement_theory&oldid=61328.

Fernández, W. D. (2004). Using the Glaserian approach in grounded studies of emerging business practices. *Electronic Journal of Business Research Methods*, *2*(2), 83-94.

Forchuk, C., Reiss, J. P., O'Regan, T., Ethridge, P., Donelle, L., & Rudnick, A. (2015). Client perceptions of the mental health engagement network: a qualitative analysis of an electronic personal health record. *BMC Psychiatry*, *15*(250). DOI 10.1186/s12888-015-0614-7.

Frick, L., Carl, A., & Beets, P. (2010). Reflection as learning about the self in context: Mentoring as catalyst for reflective development in pre-service teachers. *South African Journal of Education*, *30*(3), 421-437.

Glaser, B. G. & Strauss, A. L. (1967). *The Discovery of Grounded Theory. Strategies for Qualitative Research.* Chicago: Aldine.

Glaser, B. G. (1969). The constant comparative method of qualitative analysis, in G. J. McCall and J. L. Simmons (Eds), *Issues in Participant Observation* (pp. 217-227). Reading, MA: Addison-Wesley.

Glaser, B. G. (2004). Remodeling grounded theory. *Forum Qualitative*: *Qualitative Social Research, 5*(2), 4, 1–22.

Glaser, B., & Strauss, A. (1967). *Discovery of Grounded Theory*. Mill Valley, CA: Sociology Press.

Ghoorchaei, B., Tavakoli, M., & Ansari, D. N. (2010). The Impact of Portfolio Assessment On Iranian EFL Students' Essay Writing: A Process-Oriented Approach. *GEMA Online Journal of Language Studies*, *10*(3), 35-51.

Hemmati, F., & Soltanpour, F. (2012). A Comparison of the Effects of Reflective Learning Portfolios and Dialogue Journal Writing on Iranian EFL Learners' Accuracy in Writing Performance. *English Language Teaching*, *5*(11), 16-28.

Jensen L. & Allen M. (1996) Meta-synthesis of qualitative findings. *Qualitative Health Research 6*(4), 553–560.

JISC (2008). Effective Practice with language e-portfolios: Supporting 21st century learning. Retrieved from http://www.jisc.ac.uk/media/documents/publications/effectivepracticeeportfolios.pdf

Ke, J., & Wenglensky, S. (2010). Keep it Simple: Grounded Theory. Retrieved from http://avantgarde-jing.blogspot.com/2010/03/grounded-theory.html

Kearsley, G., & Shneiderman, B. (1999). Engagement theory: A framework for technology-based teaching and learning. Retrieved from http://home.sprynet.com/~gkearsley/engage.htm

Khales, B. (2016). Using Electronic Portfolio to Promote Professional Learning Community for Pre-Service Early Childhood Teachers at Alquds University. *Journal of Education and Practice*, 7(26), 127-136.

Knowles, S. E., Toms, G., Sanders, C., Bee, P., Lovell, K., Rennick-Egglestone, S., … Bower, P. (2014). Qualitative meta-synthesis of user experience of computerised therapy for depression and anxiety. *PloS one, 9*(1). e84323. doi:10.1371/journal.pone.0084323

Kristmanson, P. L., Lafargue, C., & Culligan, K. (2011). From Action to Insight: A Professional Learning Community's Experiences with the European Language Portfolio. *Canadian Journal of Applied Linguistics / Revue canadienne de linguistique appliquee*, *14*(2), 53-67.

Kristmanson, P., Lafargue, C., & Culligan, K. (2013). Experiences with Autonomy: Learners' Voices on Language Learning. *Canadian Modern Language Review*, 69(4), 462-486. doi: 10.3138/cmlr.1723.462

Lafayette College Foreign Languages and Literatures Resource Centre. (n.d.). The Lafayette Language Portfolio: A Reflective and Archival Record of Communicative Competence and Cultural Experience. Retrieved from http://sites.lafayette.edu/fllrc/teaching-learning/eportfolio/ (Accessed 17 November, 2015)

Lankbeck, R., & Mugler, F. (2000). Distance learners of the South Pacific: Study strategies, learning conditions, and consequences for course design. *International Journal of E-Learning and Distance Education*, *15*(1), 63-80.

Lo, Y.-F. (2010). Implementing reflective portfolios for promoting autonomous learning among EFL college students in Taiwan. *Language Teaching Research*, *14*(1), 77-95.

Luongo-Orlando, K. (2003). Authentic assessment: Designing performance-based tasks. Pembroke Publishers Limited.

Mirici, I. H., & Hergüner, S. (2015). A digital European self-assessment tool for student teachers of foreign languages: The EPOSTL. *Turkish Online Journal of Educational Technology - TOJET*, *14*(1), 1-10.

Moore, M. G. (1993). Theory of transactional distance. Retrieved from http://www.c3l.uni-oldenburg.de/cde/support/readings/moore93.pdf

Pielstick, C. D. (1998). Transformational leadership: A meta-ethnographic analysis. *Community College Review*, 26(3), 15-34.

Sandelowski, M. (2013). SAGE *research methods. The SAGE Encyclopedia of Social Science Research Method*s. Retrieved from https://srmo.sagepub.com/view/the-sage-encyclopedia-of-social-science-research-methods/n782.xml

Scott, H. (2009*). What is grounded heory? Grounded Theory Online*. http://www.groundedtheoryonline.com/what-is-grounded-theory.

Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing*, *14*(3), 153–173.

Timonen, V., Foley, G., & Conlon, C. (2018). Challenges when using grounded theory: A pragmatic introduction to doing GT research. *International Journal of Qualitative Methods*, *17*(1), 1–10.

Tsui, A. B. M., & Ng, M. (2000). Do secondary L2 writers benefit from peer comments? *Journal of Second Language Writing*, *9*(2), 147–170.

Wu, C.-H. V., & Beaunae, C. (2014). Personal reflections on cautions and considerations for navigating the path of grounded theory doctoral theses and dissertations: A long walk through a dark forest. *International Journal of Social Research Methodology*, *17*(3), 249–265.

Xamaní, I. M. (2013). Practical implications of a constructivist approach to EFL teaching in a higher education context. *Journal of University Teaching and Learning Practice*, 10(2). Available at:http://ro.uow.edu.au/jutlp/vol10/iss2/3

Yang, N. (2003). Integrating portfolios into learning strategy-based instruction for EFL college students. *IRAL*, *41(*4), 293-317.

Yusuf, J., & Tuisawau, P. (2011). Student attitudes towards the use of e-Portfolios: Experiences from the University of the South Pacific. *Malaysian Journal of Educational Technology*, *11*(4), 31-41.

Essay

State of Education Management Information System (EMIS) in Pacific Melanesia Small Island Developing States (SIDS)

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Abstract

Education Management Information System (EMIS) can generate quality data, which have the potential to guide planning, policy dialogue, assessing education performances, monitoring programmes implementation and learning outcomes. In the development of EMIS, the incorporation of important features is required to make appropriate suggestions for decision makers. However, in reality establishing an EMIS is complex, costly and takes several years to arrive at working system to accommodate all stakeholders' needs. This paper aims to review the establishments and complexities of EMIS in Pacific Small Island Developing States (SIDS) which include Fiji, Papua New Guinea, Solomon Islands and Vanuatu. The scope of the review covers current status of EMIS, stakeholders' access to data, government and donor efforts, challenges, achievements, technological solutions and advancements, and future plans to strengthen EMIS.

Introduction

In any society, the education sector remains a major catalyst for economic and socio-political development. Therefore, assessing the state of education becomes important for any government to introduce or review policies and funding schemes to continuously improve the education sector.

This involves working with large education datasets to predict cost of educating a child, equitable distribution of available resources, effective governance, improve operations and learning outcomes and by extension, an improved quality education. These education data not only evaluate operationability of governments' policies and the overall effectiveness of the education sector, but also monitor the performance of Governments' initiatives and supports (funds, grants and technical assistance) from International Development Partners (IDPs).

Education data is considered an important part of decision making and IDPs have been a leading advocate for smart data generation (Abdul-Hamid, 2017a; UNICEF, 2020). This underscores the need to collect relevant data for analysis, thereby improving a data-driven culture in day to day running of schools and activities in the education ministries. In educational planning, the presence of data assists in making effective policy and programme strategies, and priorities on the economic and demographic realities of a country[3].

In contradiction, data, information and decision making processes are interlinked, having too much of data and information leads to data saturation and without proper data mining or data management system in place makes decision making processes difficult (Aldarbesti & Saxena, 2014). Thus, the global adoption of Education Management Information System (EMIS) to collect, analyse and manage several education data to improved learning outcomes.

From an engineering perspective, EMIS is described as a smart system embedded with functions of sensing, self-induce, and control in analyzing education situation and decisions on available data in a predictive or adaptive manner with capacity for intelligent operations (Abdul-Hamid, 2017a; DeSilva, 1989). In other words, EMIS can generate quality data, which can be used to guide planning, policy dialogue, assessing education performances, monitoring programmes implementation and learning outcomes (World-Bank, 2017).

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[3] en.unesco.org/news/unesco-launches-new-simulation-model-education last accessed 16/05/2020

In the development of EMIS, the incorporation of important features are required to make appropriate suggestions to decision makers, but establishing an EMIS is complex, costly and takes several years to arrive at a working system to accommodate all the stakeholders' needs (Durnali, 2020). This is because if any part of the features of EMIS is missing or incorrectly structured, then the goals and expectations of such a system is defeated. Hence, EMIS developers need to ensure that relevant data presentation and representation within the system are established (Breiter & Light, 2006). Strengthening education management systems was also recognized in the Nadi Declaration at the 20th Conference of Commonwealth Education Ministers (20CCEM) held in 2018. The conference was attended by 34 member states from commonwealth countries. Many of these countries still struggle with data-related issues despite millions of dollars were invested in strengthening EMIS[4].

This paper explores the establishment of EMIS in four countries in the Pacific Islands and bringing to the fore efforts, setbacks and achievements.

Literature review

Pacific Island Countries

According to Costa and Sharp (2011), Pacific Island Countries (PICs) consist of 25 nations and territories, grouped along racial and cultural lines (Melanesia, Micronesia and Polynesia). The authors listed the following nations under the Melanesian group of islands; Fiji, New Caledonia, Papua New Guinea, Solomon Islands, Torres Strait Islands and Vanuatu. Secondly, the authors listed Guam, Kiribati, Marianas, Marshall Islands, Nauru, Palau, Wake Island and the Federated States of Micronesia under the Micronesian group and thirdly, the Polynesian group include American Samoa, New Zealand, the Hawaiian Islands, Rotuma, Midway Islands, Samoa, Tonga, Tuvalu, the Cook Islands, French Polynesia and Easter Island.

Of the 25 countries, 13 are referred to as the Pacific Small Island Developing States (SIDS) categorised in Table 1:

Table 1: Categorisation of Pac SIDS

Melanesia	Micronesia	Polynesia
Fiji	Federated States of Micronesia	Niue
Papua New Guinea	Kiribati	Samoa
Solomon Islands	Marshall Islands	Tonga
Vanuatu	Nauru	Tuvalu
	Palau	

Source: GPE 2020[5]

The establishments of EMIS in all four SIDS (Fiji, Papua New Guinea, Solomon Islands and Vanuatu) in the Melanesia group are discussed because of their track records of evolvement, current state and recognition in international reports by development partners(Abdul-Hamid, 2017b).

Evolution of EMIS

The education sector, similar to other sectors of life, has witnessed an increase in the application of information technologies. The areas of applications include intelligent tutoring systems, profiling and prediction systems, assessment and evaluation systems, adaptive systems and personalization (Zawacki-Richter, Marín, Bond, & Gouverneur, 2019).

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[4] https://www.globalpartnership.org/blog/what-can-we-learn-emis-diagnostics
[5] https://www.globalpartnership.org/where-we-work/gpes-support-pacific-small-island-developing-states

However, in education management and planning, the school based management information systems (MIS) was initially designed to improve the efficiency of schools, and Ministry of Education activities for data entry and collation rather than data transfer or analysis, but its importance were noticed during data integration stages (Shah, 2014). Data integration means that data from multiple sources such as the payroll, achievements, annual school census, previous years of enrolments, staff, schools and other data linked or merged (Hua & Herstein, 2003). This add value to the data that are already collected and available in variously scattered places within the same system to conduct high quality policy analysis or planning by educational policy maker.

Transition stages in EMIS for Melanesian SIDS

Table 2: Comparison of EMIS in Melanesia SIDS

Development Stages	Fiji EMIS (FEMIS)	Papua New Guinea EMIS (PNG EMIS)	Solomon Islands EMIS (SIEMIS)	Vanuatu EMIS (OPEN VEMIS)
Early stage of EMIS	• Prior to 2012, the Ministry of Education, Heritage and Arts, Fiji had three main databases, namely SIMS (School Information System), FESA (Education Staffing Information System) and LANA (Literacy and Numeracy Assessment System).	• EMIS in PNG history could be traced back between 2004 and 2005 where Microsoft Access System and Excel were used to manage education data.	• EMIS journey began in 2004. It was developed by Uniquest, an Australian Company and funded by the Australia and New Zealand Governments. • It used a main database called Pacific Island Nations Evaluation Analysis Policy and Planning Leveraging Education Statistics (PINEAPPLES) built on Microsoft SQL Server.	• Before 2016, the Ministry of Education data was held in "old" VEMIS and other several spreadsheets files.
Challenges faced	• Overlapping data in those 3 databases and non-communication among databases. • Access to them were through intranet on the Ministry of Education network.	• Overlapping figures from multiple sources • Resulted into inaccurate and conflicting data	• No Database Management System at regional and local level. • Lack of commitment and investment by the vendor and government affected the continuous review for system upgrade.	• Overlapping figures from multiple sources. • Resulted into inaccurate and conflicting data between the Ministry and Schools.
Current state	• These challenges and schools' buy-in necessitated assessment on Fiji education data systems to integrate the Ministry's major databases into a unified, web-based platform for data sharing and collaboration.	• Department of Education (DoE) introduced Oracle Application Express in 2015 and all data were successfully migrated into a web based software	• Early 2020, the Ministry of Education and Human Resources Development (MEHRD) unveiled a road plan to replace the current customized SIEMIS platform for UNESCO's off the shelf "Open-EMIS"[6]	• Challenges necessitated the consultation with key stakeholders for efficient EMIS and two solutions were proposed, a decentralized data collection and

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[6] https://www.dfat.gov.au/sites/default/files/solomon-islands-education-sector-support-program-2019-2023-design-document.pdf

Development Stages	Fiji EMIS (FEMIS)	Papua New Guinea EMIS (PNG EMIS)	Solomon Islands EMIS (SIEMIS)	Vanuatu EMIS (OPEN VEMIS)
	• In 2017 and till this moment, FEMIS has 2 physical databases, LANA and FESA while information on SIMS database was merged into FESA with a corresponding web application, FESA application still maintains staffing data while the LANA application maintains assessment data in the LANA database, Schools' class lists is being administered in the LANA database using FEMIS. • The hardware design consists of a web server to serve web pages and reports over the open Internet.	development environment • EMIS Unit previously used Oracle Discoverer for querying, reporting, data analysis, and web publishing, but now uses Business Intelligence (BI) due to non-support for Discoverer by Oracle	• This national adaptation of OpenEMIS requires capacity development and advanced lab trainings and configuration of the system to the local context, modify the student assessment and examination module to the needed context and generate thematic dashboards based on selected Key Performance Indicators (KPIs) when configured and ready for use[7].	centralized online platform approach • February 2016[8], a circular was issued to Provincial Education Officers to sensitize stakeholders in the commencement of trialing the "new VEMIS" and this led to gradual migration to Open VEMIS in 2017.
Technologies in use	• Microsoft Visual Studio was used to build web pages and reports. • Microsoft SQL Server is being used as database technology for data storage • It uses Windows Server 201X • 2 x web servers plus 2 x database servers serves as physical serves.	• Oracle Application Express, web-based software development environment that runs on an Oracle database • 2 Physical servers (one for redundancy) and two storage devices on site. Each physical server has 27 virtual servers with 6 terabytes of storage.	• OpenEMIS is a suite of interrelated software solutions that uses PHP and AngularJS developed by UNESCO and authored by Community Systems Foundation. ▪ Operating system- Linux, Windows or Macintosh ▪ Webserver –Apache /IIS and PHP ▪ Database–MySQL, PostgreSQL or SQL Server ▪ Browser-IE, Chrome, Firefox or Safari.	• Microsoft Visual Studio was used to build web pages and reports. • Microsoft SQL Server is being used as database technology for data storage. • Cloud hosting platform.
Achievements	• FEMIS has recorded many successes in managing education in the country and its main features	• Automated processes to validate data and	• SIEMIS provides data that facilitated preparation of Country Policy Documents	• In May 2019[10], Vanuatu's Education Ministry successfully integrated the Pacific

[7] https://www.communitysystemsfoundation.org/portfolio/openemis-solomon-islands

[8] http://103.7.197.77/Misc/Education%20Software%20to%20all%20Schools.pdf

[10] https://www.spc.int/updates/blog/2019/05/vanuatu-education-launches-revamped-information-management-system

Development Stages	Fiji EMIS (FEMIS)	Papua New Guinea EMIS (PNG EMIS)	Solomon Islands EMIS (SIEMIS)	Vanuatu EMIS (OPEN VEMIS)
	include basic reporting, tracking and resource allocation functions. • FEMIS data is now being used for national assessment registration and dissemination, grant allocation, student attendance tracking, recording students with disability, determination of textbook requirements, calculation of transport subsidies, school finances and determination of staffing requirements. • It has been commended in few of the World Bank reports as a potential model for other Pacific countries' EMIS, as well as a reference to the rest of the world when developing an affordable and school-centered EMIS.	flag discrepancies started in 2015. • In 2019, a "Payslip app" for Teachers and Public Servants were launched, a similar app called "My School App"[9] was launched in 2018 for collecting school census form, and this shows the country use of technology in service delivery.	(National Education Action Plan (NEAP) 2016-2020; 2019 Performance Assessment Report (PAR), and education sector support program 2019-2023) • Students' names and birth dates were collected during the 2019 annual school survey which assisted the SIEMIS team to track students more accurately throughout their entire schooling life. • MEHRD shift towards an open source EMIS which, when operational, will allow real time entry and access to data for a range of education stakeholders.	Community's cloud-based assessment management module into its VEMIS, an upgrade that is expected to boost the efficient processing of exam results. • Open VEMIS is cloud based and is accessible on any devices. • Single source of data for all Ministry information needs, schools and units own and consume their data for day to day running of School activities. • The centralized system provides national reporting on key modules such as student attendance, school finances, student health, and teacher performance.
Current Challenges	• FEMIS design is business focus (for managing allocation of grants to schools and provision of vouchers to students) against generating education statistic data that will give overall performances in the education sector[11]. • This has led to ineffective use in decision processes such as policy making and evaluation • Lack of generating education indicators such as the net and gross	• Data analytics are not automated in the current EMIS; instead, the EMIS Unit extracts data and runs analysis on Business Intelligence. • Schools and clients (e.g., parents, communities, and students) are not using EMIS because they are unaware of and/or unable to access the	• Data gap and delay, 2019 data in SIEMIS was not available until April 2020, delaying the preparation of the Performance Assessment Report (PAR)[14] • The annual school survey forms the key source of data in SIEMIS. • OpenEMIS yet to be operational and accessible on the internet.	• Most of the challenges in FEMIS is noticed as OPEN VEMIS is built on FEMIS framework

[9] https://edu.pngfacts.com/education-news/september-24th-2018

[11] https://www.dfat.gov.au/sites/default/files/access-to-quality-education-program-end-of-program-evaluation-report.pdf

[14] http://www.mehrd.gov.sb/MEHRD_Documents/Reports_2019/PAR-2019-Final-version_21.8.20.pdf

Development Stages	Fiji EMIS (FEMIS)	Papua New Guinea EMIS (PNG EMIS)	Solomon Islands EMIS (SIEMIS)	Vanuatu EMIS (OPEN VEMIS)
	enrolment rate being calculated manually by the staff, without any automated processes established. • Incomplete data for pre-primary and technical and vocational education.	Education Info Dashboard[12]. • Lack of a National Learning Assessment System integrated into the EMIS[13]. • Datec, an external firm, is supporting EMIS which comes at cost and maintenance cost of the Oracle System threatens long-term sustainability.		
Accessibility	• Schools, teachers, District Officers and Ministry Staff. • Learners' data not accessible to their parents.	• DoE staff only. • School uses "MyApp" to upload data to EMIS. • While Teacher access "Payslip" for their remuneration in EMIS.	• Only accessible at the MEHRD.	• Schools, teachers, Education Officers and Ministry Staff. • Learners data not accessible to their parents. • Public has access to some basic information such as maps including cyclone resistant buildings and Home Schooling Resources[15]
Future plan	• In March 2020, Fiji Higher Education Commission (FHEC) unveiled the plan to integrate Higher Education data onto the national education database and also discussed the implementation phases of FEMIS for the next financial year[16]	• EMIS to be further enhanced to allow for easier access to data and improved systems to store and access quality information.	• Transition to OpenEMIS • Data from OpenEMIS to be used in the development of the National Education Action Plan (NEAP) 2021-2026. • Establish student level tracking. • Data collection on disability to be improved.	• Plan ongoing to integrate a French language version which was deployed in 2021. • Improve on school internet connectivity.

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[12] http://eduportal.educationpng.gov.pg/

[13] https://www.globalpartnership.org/sites/default/files/2019-04-gpe-png-program-document.pdf

[15] http://www.openvemis.gov.vu/Public/Public_Logon.aspx (last accessed on 25/11/2020)

[16] https://www.fhec.org.fj/femis-stakeholders-information-session-western/

Development Stages	Fiji EMIS (FEMIS)	Papua New Guinea EMIS (PNG EMIS)	Solomon Islands EMIS (SIEMIS)	Vanuatu EMIS (OPEN VEMIS)
Sources	(Abdul-Hamid, 2017a; Saraogi, Mayrhofer, & Abdul-Hamid, 2017)	(World-Bank-Group, 2015a)	(World-Bank-Group, 2015b)	(Abdul-Hamid, 2017a; Vanuatu Government, 2020; VESP, 2017).

Pacific EMIS Project

Pacific EMIS provides a design of modern high-end EMIS for small Pacific Island Nations.

From 2016 to date, the project has been modernized into an Open Source Project. There are several components to this large initiative and the source code in different programming languages and other open source frameworks[17]. Some of the project contributions in the Pacific EMIS include support to improve quality data, open source software and expert support to customize the software for country education context of their clients. Now there is web application built with .NET framework, TypeScript, and Angular stack with Microsoft SQL Server (free Express edition) and their single web page application allow users to access all their data, analysis dashboards as well as generation of reports and related tools dynamically. The clients using Pacific EMIS also have access to features such as Reporting Server, Education Survey Tool, Student Information System, Data Warehouse, Office Application and Mobile Open Education Data for Android and iOS.

Support to strengthen EMIS by donors in the Pacific Islands

Development of EMIS is a difficult task, due to its robust capacities to generate timely, reliable and education data to monitor Sustainable Development Goal (SDG) indicators. This led to support for countries by IDP such as UNICEF, the World Bank, UNESCO, ADB and the Global Partnership for Education (GPE) to build efficient and maximize EMIS towards achieving the Education 2030 Agenda through funding and open discussion on how development partners can better collaborate with countries to address EMIS-related needs, apart from given technical supports[18].

Besides providing funding for the initial costs to the development of EMIS, they also developed diagnostic tools and the framework to monitor and assess the performance of EMIS and some of the notable support related to Pacific Islands are listed below:

i. Data Quality Assessment Framework (DQAF) developed by IMF in 2002 to assess quality of economic data was modified in 2004 by the UNSECO Institute of Statistics (UIS) for use in the evaluation of education data, the framework was based on six dimensions of data quality known as Ed-DQAF. Australian Department of Foreign Affairs and Trade (DFAT) in partnership with the Secretariat of the Pacific Community conducted diagnostics in six Pacific Island countries as at 2019, currently there is a simplified version for Ed-DQAF called Rapid Data Quality Assessment customized for self-assessments.

ii. Systems Approach for Better Education Results (SABER) launched in 2011 by the World Bank, SABER has analyzed more than 100 countries' EMIS[19] by 21st January 2014 and in 2019, 13 developing countries, including 6 GPE countries' EMIS had been diagnosed[20]. Diagnostic EMIS reports on Papua New Guinea, Solomon Islands and Samoa were published in 2015 and Fiji report became available in 2017. Vanuatu was diagnosed on Early Childhood Development in 2012 and the policy goals were different from SABER-EMIS country reports conducted between 2015 and 2017 (so the VEMIS has not been diagnosed), see Table 3 for benchmarking scores on four scales and Figure 1 for scoring scale of SABER

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17 http://pacific-emis.org/

18 https://en.unesco.org/news/unesco-gpe-launch-first-international-conference-education-management-information-systems-0

[19] https://www.worldbank.org/en/news/press-release/2014/01/21/world-bank-group-new-open-data-tool-helps-countries-compare-progress-on-education

[20] https://www.globalpartnership.org/blog/what-can-we-learn-emis-diagnostics

Table 3: Overview of SABER-EMIS Benchmarking Scores

Policy Goals	Fiji	Papua New Guinea	Solomon Islands	Vanuatu
Enabling Environment	Established	Emerging	Latent	Not yet diagnosed
System Soundness	Established	Emerging	Emerging	
Quality Data	Established	Established	Emerging	
Utilization for Decision Making	Emerging	Emerging	Latent	

Note: This comparison was based on the 2015 SABER-EMIS assessment of Papua New Guinea and the Solomon Islands (Source: SABER, 2017)

Figure1: SABER Scoring and EMIS Development
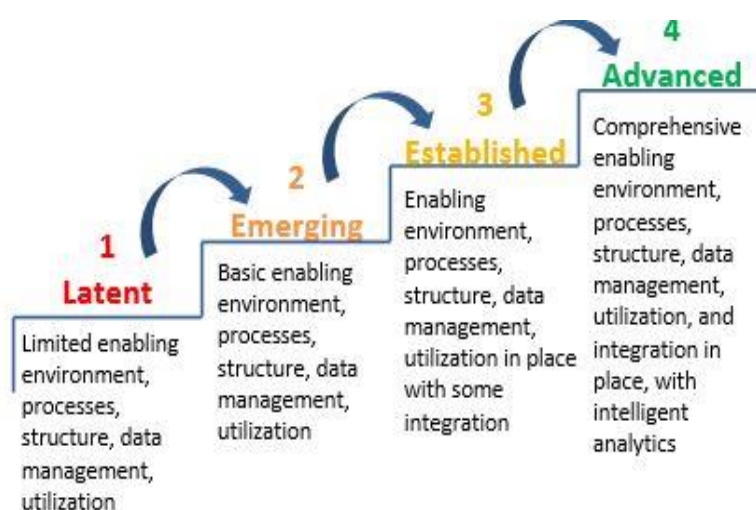
Source: Abdul-Hamid 2014

iii. As part of the commitment to make EMIS effective in the Pacific, DFAT provides funding and technical support[21] that has led to the development of the Open Vanuatu Education Management Information System (VEMIS). The development include assigning a unique identifier to students within the education system and tracks their achievement through their primary and secondary school journey[22].

iv. Open EMIS Initiatives was conceived by UNESCO, now upgraded in 2020 as a generic platform and serves as a response to its Member States' need, in the area of tools for educational strategic planning. OpenEMIS has three versions to cater for specific needs of countries including OpenEMIS Census; Core and School[23]. It has capacity to flag absenteeism and identify students who are at the risk of early school drop-out. The OpenEMIS is evolving and is earmarked for use in educational planning, policy formulation, monitoring and evaluation and comes with subscription cost.

v. Pacific Monitoring and Evaluation (M&E) Task force of the Pacific Community (SPC) was inaugurated by a consortium of development partners to improve the education statistics, monitoring and evaluation in the region, as well as improving coordination between development partners and members that include the New Zealand Aid Programme (NZAP), the University of the South Pacific (USP), the Department of Foreign Affairs and Trade (DFAT) and she Pacific Islands Forum Secretariat(PIFS).

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[21] DFAT (2012.) Pacific Education Management Information Systems—Rapid Review. Unpublished.
[22] DFAT (2018): https://www.dfat.gov.au/sites/default/files/practitioner-country-or-region-specific-analysis.pdf
[23] https://www.openemis.org/products/

General challenges of EMIS in Pacific Island Countries

Panapa[24] highlighted five major challenges facing PICs[25] as follows:

i. Lack of effective EMIS in the region which resulted into low response rates to international surveys;
ii. Lack of capacity to produce data and indicators in line with international standards;
iii. National EMIS units have tended to be under-staffed and there have been limited technical skills for the integration and analysis of large data sets;
iv. Over-reliance on external technical assistance; and
v. Staff capacities to keep pace with the region-wide redesign and expansion of EMIS.

Panapa tried to justify support received from the UNESCO Institute of Statistics (UIS) and DFAT from 2015 to 2018, for the region's significant improvement in quality of education statistics with more than 85% of countries providing data for the UIS Survey on Formal Education[26]. However, the site visits conducted in the same year by the Asian Development Bank (ADB) confirmed that the gaps identified in 2012 continue to be relevant in the region (Pillay, Velasco-Rosenheim, & Thonden, 2018).

Issues on the structural design of EMIS

1. Centralized and decentralized EMIS

EMIS design is based on country needs and consideration for design depends on the government structure, whether to build centralized or decentralized EMIS. Centralized EMIS is ideal for small island nations because it is cost effective such as in Timor-Leste. For practicality, the hybrid which is also known as a centralized school integrated EMIS can be seen in Fiji and Vanuatu. A decentralized EMIS is ideal for countries with many population such as in the United State of America, Nigeria and Malaysia due to greater access and levels of participation (Abdul-Hamid, 2017a; Cassidy, 2006; Heeks, 1999; UNICEF, 2020; Wright, 2000) but decentralized system can also be found in small island nations such as the Federated States of Micronesia with four states and a smaller population (Kendall, Dandapani, & Cicchinelli, 2016).

2. Aggregated data and Disaggregated data

Review has shown the relevance of quality disaggregated data on education for country planning, SDG reporting, national monitoring and systems improvement purposes. It has helped identify ways in which EMIS can be strengthened to promote equitable quality education. Learning a disaggregated data allow in-depth analysis and student tracking while aggregated data is only useful when a total figure is needed against the detail of such data. The importance of disaggregated data has influenced countries decision to upgrade their EMIS to allow disaggregation (Bhatti, Ali, Saqib, & Adnan, 2013; Sprunt, 2019; Sprunt, Marella, & Sharma, 2016; UNESCO-UIS, 2019).

3. Education Indicators

An efficient EMIS should generate data to report UNESCO Education Indicators, it is on record that reported countries that collect data required to produce indicators for learning outcomes ranges from 48% in the whole of Asia and the Pacific, to 72% in Latin America and the Caribbean. This low report on indicators from Pacific made UIS took an active role in SPC's training for staff in Vanuatu's Ministry of Education and Training (Vanuatu Government, 2020) when analyzing data from the EMIS database including the production of basic education indicators, as well as encouraging several Pacific Island countries on the methodologies for producing education indicators[27].

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24 Chief Executive Officer, Ministry of Education, Youth & Sports, Government of Tuvalu in 2018

25 http://uis.unesco.org/en/blog/across-pacific-building-effective-education-management-information-systems published on 10/07/2018 by the Global Partnership for Education (GPE)

26 Survey of Formal Education: which collects data on the number of students, teachers and educational expenditure for all levels of education. For countries under the responsibility of the Organisation for Economic Development and Eurostat, this survey is jointly administered between UIS and the two organizations. Source: UIS Education Data Release: September 2018

27 http://uis.unesco.org/en/blog/across-pacific-building-effective-education-management-information-systems
Blog published on 10/07/2018 by the Global Partnership for Education (GPE)

Inferences based on the review

- Pacific countries have been working towards developing an effective EMIS and in Melanesian SIDS: Fiji, Papua New Guinea and Vanuatu were noted to have improved in the establishment of an EMIS in the region (Saraogi et al., 2017; Vanuatu Government, 2020).
- EMIS in the Melanesian SIDS have a greater focus on business processes (managing allocation of grants to schools and provision of vouchers to students) rather than generation of quality education data on academic performance for decision making).
- The challenges of EMIS to generate automated education data indicators make it difficult for international reportage of data and encourages ineffective utilization of data for decision making.
- It is also noticed that FEMIS may serve as a potential model for other Pacific countries because it is affordable, design replication is easy as seen in VEMIS development, commendable in World Bank reports and its improvement over time.
- The problem of over-reliance on external technical assistance from donors, as well as the struggle to ensure that staff capacities can keep pace with the region-wide redesign and expansion of EMIS will continue to linger on if research is not conducted in the areas of design and implementation of EMIS web-based application.
- Pacific EMIS should be patronized for small island nations that are yet to have EMIS in place.
- Available studies on EMIS showed that many countries where EMIS platform is established, there are complaint that EMIS is used to report on international development indicators, and not tailored in responding to local management needs for decision making.
- Some Ministries of Education often perceive EMIS to be a top–down approach that are only used for reporting Sustainable Development Goals (SDGs) and regional indicators, as opposed to being a bottom–up tool to facilitate planning and management across the sector and no developing country in the Pacific appears to have progressed beyond the stages of collecting demographic data and reporting on sector indicators (Pillay et al., 2018).
- There is an advocacy on expansion of education sectors in the Pacific for the need to develop and operate robust EMIS platforms to support informed decision-making in increasingly complex data environments since Pacific Governments have operated EMIS platforms for more than a decade now (Pillay et al., 2018).

Recommendations

This paper has reviewed the current establishments of EMIS, stakeholders' access to data, government and donors' efforts, challenges, achievements, technological solutions and its advancement, and future plans to strengthen EMIS in SIDS within Melanesia.

PICs need to carry out in-country evidence-based survey on the status of EMIS. The findings should be published and made available to the public so that the state of their EMIS will not be under-reported by external bodies. Furthermore, Pacific academic researchers' attention is needed to provide some directions on how to improve EMIS in the region as the literature in this particular area is limited.

Moreover, internet accessibility to all schools should be prioritized by Pacific Governments as web-app EMIS has proven to be an amicable solution for cost effective and easy accessibility to data by all stakeholders in possession of technological devices. In the long term, the establishment of EMIS will solve the aftermath damages on physical ICT infrastructures witnessed during and after the impact of seasonal climate change disasters in the scattered Pacific SIDS.

Future work

The following areas require further exploration:

- The state of EMIS in other Pacific SIDS from the Micronesian and Polynesian island groups.

- The design of cloud-based web applications that will generate smart data on academic performance and other Education Indicators and accessibility to all stakeholders for decision making.
- Diagnostic SABER-EMIS needs to be conducted on Vanuatu and other EMIS in the Pacific to determine their strengths and weaknesses in line with SABER policy goals.
- There is also need for Intelligent Education Management Information Systems (IEMIS) to auto generate education indicators that will improve use of EMIS data for decision making and regular publishing of data in line with global practices.

References

Abdul-Hamid, H. (2017a). *Data for Learning: Building a Smart Education Data System*: World Bank Publications.

Abdul-Hamid, H. (2017b). Developing an Affordable and School-Centered EMIS: The Case of Fiji.World Bank. https://doi.org/10.1596/978-1-4648-1099-2_ch9

Aldarbesti, H., & Saxena, J. (2014). Management Information System for Education. *IOSR Journal of Research and Method in Education, 4*(1), 36-44.

Bhatti, S. A., & Adnan, A. (2010, June 14). *Challenges in education management information system in develpoing countries.* Paper presented at the 2010 International Conference on Information and Emerging Technologies. DOI:10.1109/ICIET.2010.5625692

Bhatti, S. A., Ali, A. R. M., Saqib, K. M., & Adnan, A. (2013, Sepyember 1). *Assessment of capacity and performance of decentralized EMIS activities in developing countries.* Paper presented at the Eighth International Conference on Digital Information Management (ICDIM 2013). DOI:10.1109/ICDIM.2013.6694013

Breiter, A., & Light, D. (2006). Data for school improvement: Factors for designing effective information systems to support decision-making in schools. *Journal of Educational Technology and Society, 9*(3), 206-217.

Cassidy, T. (2006). *Education management information systems (EMIS) in Latin America and the Caribbean: Lessons and challenges*. Retrieved from https://publications.iadb.org/en/publication/education-management-information-systems-emis-latin-america-and-caribbean-lessons-and

DeSilva, C. (1989). Control sensors and actuators, Drentice Hall. *Inc., Englewood Cliffs, New Jersey*.

Durnali, M. (2020). Managing the Utilization of Technologies in Adult Education, Training, and Administration: The Case Study of Turkish MoNE *Utilizing Technology, Knowledge, and Smart Systems in Educational Administration and Leadership* (pp. 1-19): IGI Global.

Heeks, R. (1999). Centralised vs. decentralised management of public information systems: a core-periphery solution. *Information Systems for Public Sector Management Working Paper*(7).

Hua, H., & Herstein, J. (2003). *Education management information system (EMIS): Integrated data and information systems and their implications in educational management.* Paper presented at the annual conference of comparative and International Education Society.

Kendall, J. S., Dandapani, N., & Cicchinelli, L. F. (2016). Benchmarking education management information systems across the Federated States of Micronesia. Pacific Educational Laboratory: US Department of Education.

Pillay, H. K., Velasco-Rosenheim, R. P., & Thonden, C. (2018). ICT for Better Education in the Pacific: Asian Development Bank.

Saraogi, N., Mayrhofer, D. K., & Abdul-Hamid, H. (2017). *Fiji Education Management Information Systems: SABER Country Report 2017*: World Bank.

Shah, M. (2014). Impact of management information systems (MIS) on school administration: What the literature says. *Procedia-Social and Behavioral Sciences, 116*, 2799-2804.

SPC. (2021). EMIS, a game changer for Pacific education systems Retrieved from https://www.spc.int/updates/blog/blog/2021/03/emis-a-game-changer-for-pacific-education-systems

Sprunt, B. (2019). *Validating the UNICEF/Washington Group Child Functioning Module as a method for disaggregating Fiji's Education Management Information System.* [Doctoral thesis, The University of Melbourne]. Retrieved from file:///D:/Users/User/Downloads/BethSprunt_PhD_Fiji_disability_disaggregation_EMIS.pdf

Sprunt, B., Marella, M., & Sharma, U. (2016). Disability disaggregation of Education Management Information Systems (EMISs) in the Pacific: a review of system capacity. *Knowledge Management for Development Journal, 12*(1), 41-68.

UNESCO-UIS. (2019). *The Use of UIS Data and Education Management Information Systems to Monitor Inclusive Education* (pp. 91). UNESCO.

UNICEF. (2020). *Review of Education Management Information Systems (EMIS) that Track Individual Student Data Summary Report*. Retrieved from UNICEF East Asia and the Pacific Regional Office (EAPRO), 19 Pra Athit Road, Pranakorn, Bangkok 10200

Vanuatu Government. (2020). *Vanuatu Education and Training Sector Strategic Plan 2020 - 2030* Vanuatu: Ministry of Education and Training, Government of Vanuatu.

VESP. (2017). Vanuatu Education Support Program. *Open VEMIS: The Vanuatu Education Planning Toolbox,* (4), 2. Retrieved from http://openvemis.gov.vu/Misc/VESP%20View%20Issue%204%20-%20Open%20VEMIS.pdf website:

WorldBank. (2015a). Papua New Guinea Education Management Information System : SABER Country Report 2015. Retrieved from https://openknowledge.worldbank.org/handle/10986/22994 website:

WorldBank. (2015b). Solomon Islands Education Management Information Systems: SABER Country Report 2015: World Bank.

World-Bank. (2017). *SABER annual report 2016 : smarter education systems for brighter futures (English)* (114293). Retrieved from 2017: http://documents.worldbank.org/curated/en/110781492506918681/SABER-annual-report-2016-smarter-education-systems-for-brighter-futures

Wright, C. A. (2000). *Issues in education and technology: Policy guidelines and strategies*: Commonwealth Secretariat.

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education–where are the educators? *International Journal of Educational Technology in Higher Education, 16*(1), 39-66.