Using Mixed-Methods to Investigate Student Teacher Learning Outcomes

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The Deakin University Faculty of Arts and Education’s Global Experience Program (GEP) aims to “develop the knowledge, cultural sensitivity and skills needed to address diversity within the educational environment” among student teachers (Deakin, 2009). This research aims to investigate the short term student teacher learning outcomes from their participation in the program through their perceptions and real-life international teaching experiences. The data are collected using mixed-methods to get breadth and in-depth insights on learning outcomes. The survey was conducted to investigate student teacher perceptions on their professional and cultural learning using a Likert scale, while an ethnographic case study was intended to reveal the real-life student teachers learning outcomes from their participation in the GEP in Vanuatu.

Research Problem and Questions

Aiming to “develop the knowledge, cultural sensitivity and skills needed to address diversity within the educational environment” among student teachers (Deakin, 2009), the Global Experience Program (GEP) has been conducted in several countries including Vanuatu, India, Thailand and China, for more than five years. According to the typology of international curricula (OECD, 1996), since the GEP provides international experience for students, it could be considered as an example of initiatives in internationalising the curriculum. In this regard the benefits of a program, in particular its student outcomes, are usually not researched (Rizvi, 2007).

Given the context, I proposed three research questions. As it is important to get insights on the learning outcomes from a large number of participants, the first research question was “what perceptions do student teachers have regarding the benefits, learning, limits and opportunities of the GEP program?”. The second research question, “what is the actual lived experience of student teachers undertaking a GEP?”, aimed to reveal authentic learning experiences. How this research could inform the discourse of internationalisation is addressed with the third research questions, “how do these perceptions and recounted experiences from the GEP inform the emerging discourse of internationalisation in higher education?”.

I used a mixed methods design involving survey and ethnographic case study in the context of an ethnographic approach. The remaining part of this paper explains
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Mixed-methods to investigate the GEP

the rationales behind the selection of the research methods, the data collection procedures conducted in May and August 2010 and methodology.

Mixed-Methods as the Research Tools and Procedures

I applied mixed-method designs, which allowed me to build on the strengths of both quantitative and qualitative data to provide a complete picture of the phenomenon or issue under investigation (Creswell, 2002, Punch, 1998). The quantitative data drew the dimensions of the phenomenon whilst the qualitative data are richer and more complex. Figure 1 shows the use of two categories of data collection methods and the overall design of this study.

Figure 1: An illustration of a mixed-methods designs to investigate student teacher learning outcomes in the GEP

The mix of methods in this study started from the data collection which is designed with respect to the different research questions. Thus, it generates two different data sets requiring the analyses to be conducted separately, and the findings compared at the last stage (Alexander, Thomas, Cronin, Fielding & Moran-Elis, 2008, p. 130). Clearly the two methods serve to reveal more accurate and multifaceted findings which are complement to each other. The following section explains data collection procedures and the analysis for each method.

Survey method

A survey was used to collect data on student teacher perceptions of learning outcomes in the GEP. Survey questionnaires were sent through emails to student teachers who went to the GEP in 2008 and 2009 in May 2010. The questionnaires were also distributed to student teachers participating in the GEP in the Northern Territory and Vanuatu through their co-ordinators in August 2010.

Research on international teaching practicum shows student teachers learning could be into self, teaching and cultural learning (Clement & Outlay, 2002; Quesada, 2004). This research focuses only on professional and cultural learning, considering the significance of the GEP as a professional development program for student teachers in the context of internationalisation of the curriculum. Hence, the questionnaire asks the participants for their perceptions of learning experiences, and
limits and opportunities of GEP apart from demographic questions (Appendix 1). The four Likert scales are used to examine these perceptions on professional and cultural learning. The students were also given an opportunity to give further comment on their learning using open-ended questions.

Characteristics of the participants and perceptions of professional and culture learning were established using descriptive statistics. They are the initial statistical tools to analyse the data to depict a general picture of the participants including their variations. Moreover, contingency tables were used to analyse the relationships between two variables and identify patterns of association. According to Bryman (2004), it is the most flexible method to examine relationships, whereby the independent variables are located in columns while dependent variables are in rows of a data set. The significant influences of particular independent variables such as prior international experience, GEP location and age, on the learning outcomes were examined using Chi-square test. It is a test of statistical significance to identify the confidence of the finding displayed in a contingency table for generalisation purposes (Bryman, 2004). Further analyses, such as Rasch Analysis, could be pursued to identify the indicators that best represent the professional and intercultural learning outcomes. Rasch analysis is a model-based approach in measurement whereby ordinal observations are converted into linear measures in order to measure questions in the survey that signify differences in student knowledge and ability (Osborne, 2008). It also serves to allow validation of the questionnaire.

**Ethnographic case study**

Ethnographic case study was used to investigate the in-depth meaning of learning experiences among student teachers from participating in the GEP. It is defined as ‘a case analysis of a person, event, activity, or process set within a cultural perspective’ (Creswell, 2002, p.483). According to Cousin (2009, p.109) ethnography could be conducted by staying in a research field for ‘at least a couple of weeks for sustain of observation and informal interviewing’ in order to learn of participants’ ‘ways of doing things and viewing reality’.

As the GEP has been conducted in several countries, I applied ‘instrumental case study’ in an attempt to select a case which could ‘provide insight into an issue or to redraw a generalisation’ (Stake, 2003, p.137). In this regard, the Vanuatu GEP was chosen for the ethnographic case study as it was expected it could facilitate general understanding of the learning outcomes in the GEPs. In this case, the Vanuatu GEP is the longest GEP resulting in having the most established program of activities including its relationships with the local schools.

Participants were selected based on convenient sampling (Punch, 1998), which consist of 13 student teachers, one Vanuatu GEP co-ordinator and 13 Vanuatu supervising teachers involving 6 local primary and 1 secondary school. Prior to the fieldtrip I had no relationship with the participants. I have built my relationships with the student teachers and program co-ordinator prior to departure by attending several pre-departure meetings. To develop rapport with them in Vanuatu I participated in
most activities managed by the program co-ordinator and hung around with the participants when the time allowed. Living arrangements in the same motel and shared room with the participants also served to build rapport and gain trust.

Data were collected using several methods as follows.

- Interviews were conducted with student teachers, program co-ordinator, and Vanuatu teachers. The questions could be classified into experience and behaviour, opinion and values, knowledge, feeling and background/ demographic questions (Merriam, 2009, p.96); and descriptive, structural and contrast questions (Spradley, 1995, P.60) (Appendix 2). When interviewing the local teachers I tended to use the ‘feminist approach’ since most of the teachers were female (Roulston, 2010). I started my interviews by introducing myself including sharing information about my schooling years in Papua, whereby its culture, people and socio economic conditions are similar to Vanuatu. I showed them a couple of pictures of Papua. This strategy allowed me to gain their ‘trust’ and allowed them to talk comfortably.

- Overt classroom observation was conducted once for each student teacher (Cousin, 2009). I sat in the classroom for about 30 minutes to one hour to observe physical setting, participants, emerging activities and interactions, conversation and my own behaviour (Merriam, 2009).

- A reflective report was required at the end of the program. The student teachers were given guidance about writing up the reflective notes.

- Personal field notes were used to record my thoughts about the research and data collection procedures during in the field.

- Documents about Vanuatu school practices, socio-economy and cultures were collected from the local national library.

Regarding ‘trustworthiness’, I attempted to send my transcriptions and preliminary interpretation drawn from the interviews to the student teachers and program co-ordinator for the purpose of validity (Creswell, 2008). Moreover, data observation and interpretation of interviews with local teachers would be discussed with the program coordinator who has been managing the program for almost 10 years.

The data were analysed following the procedure for thematic analysis of Creswell (2008). The transcribed interviews and other data were read. In the meanwhile, comments could be made. Then, the data would be coded, whereby further reading of the data could yield categories. Further re-reading the data will entail looking for themes. The outcomes will be the thick description of the ethnographic case study. Furthermore, as a case study, the data would be analysed using higher-order concepts or theories to examine the learning outcomes. Appendix 3 provides, briefly, a theoretical framework that could be used to analyse short term learning outcomes. The possible outcomes could be a meaning generated from a comparison of findings confirming past information and extending further to suggest a new finding including identification of questions for further research’ (Creswell, 2008).
**Ethnographic Methodology**

The mixed-methods as the research tools and procedures in this study were positioned within an ethnographic approach. The main rationale behind the ethnographic approach is that this study focuses on the student teachers participating in the GEP whereby the research questions aim to gain meanings about their learning outcomes. According to Cousin (2009) an ethnographic approach might be applied in the investigation of a group of students in a higher education program. Although the GEP is conducted in various places, ethnography is still relevant since it is ‘implicitly or explicitly multi-sited even though the focus may be in a single field’ (Cousin, 2009, p.112). Ethnography is also appropriate as it could be used to yield rich data of both specific and general features of the research context (Cousin, 2009). The use of mixed methods to collect and analyse data could be possibly conducted within the context of ethnographic methodology. In this regard, Pole and Morrison (2003, in Scott & Morrison, 2007, p.91) argue that methods associated with positivist approach can be incorporated in ethnography ‘as long as the quantitative methods adhere to the epistemological principles of naturalism’.

Furthermore, in the context of internationalisation of the curriculum, current studies show the importance of intercultural competence as a student outcome of internationalisation (Deardorff, 2004, 2006, 2008). In addition, the research on professional development for teachers in the USA, reveals the need of intercultural competence for teachers in the globalisation era (DeJaeghere & Cao, 2009). Intercultural competence is defined as ‘the ability to communicate effectively and appropriately in intercultural situations based on one’s intercultural knowledge, skills and attitudes’ (Deardorff, 2004, p. 194). Therefore, in this study I needed to apply a research approach that enabled me to examine the learning experiences of student teachers from interaction with different culture during teaching practicum overseas.

According to Punch (1998, p.162), ethnographic approach is ‘an excellent way of gaining insights into a culture or social process, particularly those in complex behavioural settings, and particularly those involving other cultures and subcultures, including those of organizations and institutions’. Ethnography allows me to use the lens of culture to interpret attitudes, experiences, language and shared pattern of behaviours of the group and to immerse myself in the location (Creswell, 2008). In this situation, I could also study the context of the experiences, which is necessary to understand fully the phenomenon itself. Therefore an ethnographic approach enabled me to produce a ‘thick picture’ of the learning outcomes from an international teaching practicum including its context. Furthermore, ethnography allows me to describe my position and involvement with the group that could affect my understanding of the phenomena.

**Conclusion**

This paper demonstrates the use of mixed-methods within an overall ethnographic approach to investigate student teacher learning outcomes in the GEP. In particular, a survey of large number of participants gives broad data that indicate the perceptions...
of student teachers about their learning experiences from participation in the GEP. Meanwhile, the ethnographic case study serves to investigate the in-depth insights on student teacher learning experiences that enable me not only to describe the case but also to analyse the learning outcomes.

References

Appendices
Appendix 1. Survey questionnaire: Internationalising the curriculum: Learning Outcomes in the Global Experience Program

Section 1. Demographic Information
Please tick the box that applies to you.
1. Which of the following cultural groups do you belong to?
   - Australia □
   - European □
   - Middle Eastern □
   - Asian □
   - African □
   - Other: ..... □
2. Sex: Male □ Female □
3. Which age group do you belong to?
   - Younger than 20 □
   - 20 – 29 □
   - 30 – 40 □
   - Older than 40 □
4. Which course(s) are you enrolled in?
   - Primary Education □
   - Secondary Education □
   - Primary and Secondary Education □
   - Others: ..... □
5. Currently which year are you enrolled in?
   - Second □
   - Third □
   - Fourth □
   - Other: ..... □
6. In what year did you participate in the GEP?
   - 2009 □
   - 2010 □
7. In which location was your GEP?
   - Malaysia □
   - China □
   - Northern Territory □
   - Thailand □
   - Vanuatu □
   - Switzerland □
8. Besides the GEP, have you been overseas? No □ Yes □
   Please answer the following questions:
9. If yes (you have been overseas), which country did you visit? ..... □
10. For how long? ..... □
11. For what purpose? (Recreational/ work/ study/volunteering) …..

12. Where were you born? …………………

13. What nationality were your parents? …………………

Section 2. Learning experience from participating in a GEP

Please indicate the learning experience you have gained from participating in GEP by responding to the following statements on this scale: Strongly Disagree, Disagree, Agree, and Strongly Agree. Tick the box that best represents your opinion.

<table>
<thead>
<tr>
<th>Statement</th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
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<td>My GEP experience has broadened my understanding of the differences between Australian and host schools in terms of:</td>
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<td>1. The cultural norms of the school.</td>
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<td>2. The strategies for classroom management.</td>
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<td>3. The curriculum design (teaching materials/programs).</td>
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<td>4. The teaching practices.</td>
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<td>5. The students’ learning style.</td>
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<tr>
<td>My GEP experience has enabled me to:</td>
<td>SD</td>
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<td>SA</td>
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<td>6. Use appropriate teaching approach according to the cultural norm of the school.</td>
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<td>7. Use different strategies to manage the classroom from those I use in Australia.</td>
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<td>8. Infuse a global or cultural perspective in my teaching materials.</td>
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<td>9. Adopt different teaching approaches.</td>
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<td>10. Adjust my teaching practice to accommodate my local students’ learning style.</td>
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<td>11. Develop my ability on observation of teaching practices.</td>
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<td>12. Develop my ability to be reflective (thinking about practice).</td>
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Please write in this box below any comments about the professional learning you gained from participating in GEP
### Cultural Learning

**After participating in GEP, I am able to:**

13. Become more sensitive of my own culture.

14. Appreciate the different culture of my GEP students

15. Appreciate my GEP student’s patterns of behaviour

16. Appreciate my GEP student’s cultural values

17. Appreciate my GEP students’ ways of thinking

18. Recognise various visible elements of my GEP student’s culture such as foods, clothing and festival.

19. Recognise elements of my GEP student’s culture such as communication, behaviour, values and beliefs.

20. Understand my pattern of behaviour, values and ways of thinking.

21. Understand different social interaction and ways of communicating between Australian and GEP students.

22. Understand different values between Australian students and GEP students.

23. Develop coping strategies to adjust myself in a new culture

24. Develop skills of observation and reflection to learn about my GEP student culture.

25. Develop my skills to interact appropriately and effectively with my GEP students.

Please write in this box any comments about cultural learning you have gained from participating in the GEP

### Section 3. Limits and opportunities of GEP

**I believe that:**

1. The experience from the GEP will enhance my chances of obtaining employment.
2. All student teachers should participate in the GEP.

3. The experience from the GEP is relevant in most work settings.

4. Experience from the GEP can facilitate those who will teach in a multicultural classroom.

Before departure for GEP, I should be equipped with:

5. Multi-cultural classroom teaching strategies

6. Curriculum preparation

7. Intercultural communication

8. Cultural knowledge

Please write in this box below any comments about the limits and opportunities of GEP

Please respond briefly to the following questions

1. Why did you participate in the GEP?

2. Does the experience you gain from GEP meet your expectations? If ‘yes’, briefly describe in what ways? If ‘no’, briefly describe why?

3. Has the GEP strongly influenced the choice of your future career preference? If ‘yes’, briefly describe in what ways? If ‘no’, briefly describe why?

Appendix 2. Interview questions
A. Questions for student teachers in the first week
1. Is there anything interesting about local culture?
2. Have you got any negative experience or culture shock?
3. What have you noticed in the class room? School yard?
4. Do you have any difficulties interacting with the Vanuatu’s teachers/ Vanuatu’s students/ colleagues?

B. Questions for student teachers in the last week
1. Could you tell me about your daily routine here?
2. Tell me about a lesson you have conducted recently?
3. Were there any instances where you feel dissatisfied with your teaching?
4. How has this practicum been different from your previous practicum experiences?
5. Have you been assisted by the supervising teacher?
6. What was the most challenging experience you have had? How have you addressed this issue?
7. What have you learnt from this experience?

C. Questions for the supervising teacher
1. How long have you been teaching?
2. Have you had any question and answer session with the student teacher?
3. Do you encounter any problems communicating with the student teacher?
4. Do you think the student teachers should learn about teaching Vanuatu children?
5. Did you gain anything from the student teachers? Did your school get an advantage from the GEP?

D. Questions for program coordinator
1. Could you explain about the educational practices in Vanuatu school?
2. What are the main issues in preparing the Vanuatu GEP?
3. Could you explain about your roles during the teaching practicum in Vanuatu?
4. What do you expect for the student teachers to learn from their participation in the GEP?

Appendix 3. Theoretical framework to analyse short term learning outcomes in the ethnographic case study of Vanuatu GEP 2010

Framing learning in the GEP. The following descriptions were retrieved from ERIC WEB’s thesaurus on the 3rd of April 2010.
• Experience: process of observing, encountering or undergoing a set of circumstances or events from which knowledge, understanding, skills or attitudes are derived.
• Learning: process of acquiring knowledge, attitudes or skills from experience.
• Learning by doing: knowledge and skills acquired outside of book through work/play/ and other life experience.
• Attitude: predispositions to react to certain persons, objects, situation, idea etc in a particular manner. In this respect, the predisposition is not always consciously held, not readily verbalised’ as in ‘opinion’, and are characterised as either affective or valuative. Moreover, attitudes are measured through quantified descriptions of an individual’s predispositions to react to certain people, objects, situation, ideas, etc.
• Belief: predisposition is held consciously.
• Skills and knowledge: comprise the components of competency.

Analysing professional growth. The work of Shulman could be employed to examine the elements of professional growth. According to Shulman (1987) there are three categories of content knowledge that form a teacher’s professional knowledge base. These are:
1. Content knowledge (includes three subsets of content knowledge: substantive knowledge; syntactic structures; and beliefs about content matter);
2. Teaching process knowledge:
   - General pedagogical knowledge (broad principles and strategies of classroom management and organisation that appear to transcend subject matter);
- Curriculum knowledge (knowledge of the materials and programs that teachers write and use);
- Pedagogical content knowledge (teaching practice knowledge that is particular to content areas and the diverse interest and abilities of learners);
- Knowledge of educational ends, purposes and values;
3. Teachers’ knowledge of the students
- Knowledge of educational context (knowledge of the working of the group or classroom, the character of the communities and cultures and government agendas);
- Knowledge of learners and their characteristics.

**Analysing culture learning** Culture learning could be analysed using the following perspectives. Firstly, the Paige’s five dimensions of intercultural learning might be used to understand the elements of cultural learning experiences. They are: 1) Learning about the self as a cultural being; 2) Learning about the elements of culture; 3) Culture-specific learning constitutes the elements of a particular culture comprising subjective and objective culture; 4) Culture-general learning; 5) Learning about learning (Paige & Goode, 2009, p.336-337).

Second approach to analyse the culture learning could be Byram’s model of intercultural competence. It is defined as “the knowledge, skills and attitudes, complemented by the values one holds because of one’s belonging to a number of social groups, values which are part of one’s belonging to a given society” (Byram, 1998, p.5).

Moreover, the intercultural competence, which is defined as ‘the ability to communicate effectively and appropriately in intercultural situations based on one’s intercultural knowledge, skills and attitudes’ (Deardorff, 2004, p. 194), could also be employed in examining culture learning.

Furthermore, the Developmental Model of Intercultural Sensitivity (DMIS) of Bennet could be used to assess the observed and reported experiences of people in intercultural situation (Bennet & Bennet, 2004, p.152). It is defined as ‘the way people construe cultural difference and ....the varying kinds of experience that accompany these constructions’ (Bennet, 1993, p.24 in Paige and Goode, 2009, p.338). ‘It is the construction of reality as increasingly capable of accommodating cultural difference that constitutes development’ (Paige & Goode, 2009, p.338).

The six stages of developmental continuum are divided into two phases, which are ethnocentric (in which people perceive their own culture as the central of reality) and ethnorelative stages (in which people able to view that their own beliefs and behaviours is only one way to see the reality).

**Analysing the context for culture learning** Various perspectives in regarding the context for developing intercultural competence are outlined as follows. Byram (1997) suggests the importance of field work to develop skill of interaction; reflection and intercultural mentor in the field. Deardorff (2008) argues the necessity of